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Nepal
Operational Issues and Prioritization of Resources in the Health Sector

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ABBREVIATIONS AND ACRONYMS

DALY	Disability Adjusted Life Years
INGO	International Nongovernmental Organization
NHTC	National Health Training Center
NGO	Nongovernmental Organization
NLSS	Nepal Living Standards Survey
NPC	National Planning Commission
ODA	Overseas Development Authority
SWC	Social Welfare Council
UMN	United Missionaries of Nepal
UNFPA	United Nations Population Fund
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UMN	United Missions to Nepal
USAID	United States Agency for International Development

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MAIN FINDINGS

This report asks three strategic questions: What are the main health problems (burden of disease) in Nepal? Does the allocation of resources correspond to those problems? What are the main problems affecting the health delivery system?

The key findings of the report, all of which are consistent with the priorities of Nepal's Second Long-Term Health Plan, include the following:

- Nepal's burden of disease will remain dominated by infectious diseases and maternal, perinatal, and nutrition-related disorders during the next decade.
- Interventions outside the health sector—particularly efforts aimed at improving water, sanitation, and public hygiene—would have a strong influence on the burden of disease.
- Current public sector allocations are low and poorly allocated. Between 1991 and 1996, primary health care expenditures fell from 77 to 57 percent of total health care spending. Quality-enhancing nonsalary recurrent budget allocations are woefully inadequate, and resources will remain constrained for years to come.
- Many of the core problems are not associated with money but with weaknesses in institutions, governance, and the political will needed to undertake serious reform.
- The private and NGO sectors are active and should be able to do more in the future, particularly with enhanced public sector financing and a willingness on the part of both the government and nongovernment sectors to develop collaborative partnerships.

Business as usual will not produce results in time to sustain active and increased donor support for the health sector. The efficiency and use of current resources must thus be increased. To do so, the report concludes that the government needs to focus on the burden of disease and its root causes. The government should immediately create a core package of essential health care services, take firm action to reallocate resources in support of that package, and improve its capacity to deliver health services, including through the active encouragement of partnerships with the private and NGO sectors.

To move forward the government should create a strategic framework for the future development of the health sector. Without such a framework, progress acceptable to Nepal and the donor community will probably not be possible. This report proposes a series of reforms to be phased over the next 5–10 and 15 years.

EXECUTIVE SUMMARY

OBJECTIVES OF THE STUDY

1. This study represents the first comprehensive analysis of health care delivery in Nepal. It achieves three important objectives. First, it identifies critical institutional and financial needs and gaps in Nepal's health care delivery system. Second, it suggests a policy framework for prioritizing and phasing in investments in health care. Third, it explores mechanisms for implementing feasible and desirable interventions that are efficient, cost-effective, sustainable and accessible. All of the report's recommendations reflect an understanding of the tight constraints facing policymakers in Nepal.

2. The study fills major gaps in our knowledge of Nepal's health sector. It expands our understanding of the current and prospective causes of sickness and death, the actual level of external assistance in the sector and the level of additional resources needed to meet basic needs, and the critical institutional and human resource constraints within health services. It also proposes a framework for prioritizing and phasing in investments in basic heath care services based on the key concepts of burden of disease and cost-effectiveness.

3. The study was conducted in conjunction with the government's formulation of the Second Long-Term Health Plan. Extensive consultations were made with national policymakers, medical professionals, the donor community, and other stakeholders. Research findings were also disseminated to all concerned agencies and to experts in the field for feedback. In the process, a broad-based understanding of the underlying issues and the need for action emerged.

MAJOR FINDINGS OF THE STUDY

4. Nepal is one of the poorest countries in the world. Annual per capita income is just US$210 a year, and spending on health care by the public sector is a mere US$3.10 a person (including donor funding). Inadequate financial resources and the lack of institutional capacity coupled with debilitating poverty, massive illiteracy, persistently high fertility, and unabated population growth have prevented the health status from improving.

Large projected increases in the population will place enormous pressure on already strained resources.

5. Rapid population growth rates continue to seriously constrain Nepal's development prospects and aggravate environmental fragility. Population growth, fertility, and infant mortality rates remain very high in Nepal, and life expectancy remains low. Even if population growth were to fall below its current level of 2.7 percent a year, the population could double in 35 years to more than 46 million, putting enormous pressure on already strained health care and related services. Over the next

two decades alone, Nepal's population is projected to increase by about 60 percent. This rate of population increase poses a major development problem. In the health sector, it will mean that a corresponding increase in health care services will be necessary just to sustain the current level of inadequate services.

6. Demand for reproductive health services is projected to grow even faster than the population, as the number of women of reproductive age increases by 71 percent. At the same time, the projected increase in the elderly population will increase demand for treatment of degenerative and noncommunicable diseases, especially in urban areas, where the number of elderly people is projected to rise more than threefold.

Regional disparities in health indicators and health care are large.

7. Relative to people in other parts of the country, residents of rural and remote areas in Nepal have lower life expectancy and suffer more from chronic and acute illness. Life expectancy in the Kathmandu district, for example, is 74.4 years—much higher than the 55.0-year life expectancy of the average Nepalese. In contrast, life expectancy in the remote mountain district of Mugu in the Mid-Western region is just 37.4 years.

8. Almost all of the NGOs operating in the health sector in Nepal and most of the country's private providers are concentrated in the three relatively better-off regions of the country. As a result, the impoverished populations of the underserved areas depend heavily on public sector facilities, which are most deficient in those very areas. These regional disparities are among the worst in the world.

Policymakers must deal with the "unfinished agenda" of dealing with infectious and related illnesses.

9. Infectious diseases, maternal and perinatal ailments, and nutritional deficiencies are the major causes of sickness and death in Nepal, accounting for 50 percent of all deaths. The problem is particularly severe among children under 5, among whom intestinal infectious diseases, other bacterial diseases, pneumonia, and perinatal factors account for 80 percent of all deaths.

10. Burden of disease analysis confirms the need to focus on these pretransition disorders. Group I disorders, which include infectious diseases, maternal and perinatal ailments, and nutritional deficiencies, represent 69 percent of the disease burden in Nepal. The potential threat of HIV/AIDS further exacerbates the challenge in this area and demands priority attention. Degenerative and noncommunicable (Group II) diseases account for 23 percent of the country's disease burden, with injuries and accidents (Group III) accounting for 9 percent. Projections indicate that even by the year 2011, Group I diseases could still account for 61 percent of Nepal's disease burden.

11. More than half of the disease burden in Nepal (51 percent) is borne by children under five. Death and illness among 15- to 44-year-olds account for nearly a quarter of disability adjusted life years (DALYs) lost. That burden is borne disproportionately by women.

Special attention should be devoted to improving the health status of children and to targeting disadvantaged areas and the poor.

12. Top priority needs to be given to reducing the burden of disease caused by Group I diseases. These problems must be fully addressed in the immediate future. Interventions should focus on reducing childhood illness and promoting child survival by vaccinating all children and treating nutritional and related conditions. Interventions should also seek to increase cure rates for tuberculosis around the country, to prevent HIV/AIDS, and to manage sexually transmitted diseases. Targeted interventions should be aimed at disadvantaged areas and the poor. Health sector interventions also need to be fully integrated with efforts toward improving education, particularly of girls; safe drinking water; sanitation; and public hygiene. These interventions, outside the direct control of the Ministry of Health, would have a strong impact on the burden of disease. Appropriately targeted, these interventions would also more than proportionately benefit the poor and directly assist in the reduction of illness they currently bear.

Public spending on health care should focus on primary care.

13. Estimated public per capita spending on health care in Nepal is just US$3.10 a year. Even after adjusting that figure to reflect underreporting of external funding, spending remains at about one-fourth the level needed to provide a package of essential health services in a developing country. Policymakers thus face the dual tasks of trying to increase the level of resources and to better allocate the resources that are available.

14. Bank and other studies have shown that investing in primary health care is more effective than investing in specialized care. Allocative efficiency would thus suggest that primary heath care receive the bulk of health care sector financing in Nepal. Surprisingly, such allocations have declined in recent years, falling from 77 to 57 percent of total sector spending between 1991 and 1996. External assistance to primary health care has also fallen. This trend must be reversed if the unfinished agenda of controlling communicable diseases and improving maternal and child health services is to be completed.

Institutional weaknesses and ineffective program management are at the root of poor service delivery.

15. Nepal's institutional capacity for strategic planning, policy development, resource mobilization, and coordination of external donors and national stakeholders is extremely limited. Skills in planning, management, health economics, and financial analysis are lacking. Responsibilities within the Ministry of Health and the Department of Health Services are poorly delineated. The Ministry of Finance lacks an effective mechanism for monitoring and coordinating domestic and external resources that flow into the health sector. Programs are inadequately integrated, resulting in duplication of effort and inefficient implementation. Planning, budgeting, operations, and monitoring functions remain overly centralized. Both quality and quantity of outreach services are diminished

by lack of drugs, supplies, and qualified health care providers and the problem of staff absenteeism, especially in remote areas.

16. The poor absorptive capacity of the Ministry of Health has inhibited both donor and government agencies from investing in the sector. During the past 12 years, as much as 20–40 percent of the already low development budget of the Ministry of Health has remained unutilized. Between 1989 and 1991, less than two-thirds of the allocated external resources were released, and only about 60 percent of the original allocation could be used.

The private sector and NGOs remain unregulated, and their activities are not integrated with those of the public sector.

17. The care provided by the private sector and NGOs is of uneven and often very poor quality. Lack of regulation means that many providers are unqualified or underqualified. New mechanisms must be put in place to improve the performance and accountability of the public sector. Planning and management of services should be decentralized. Special incentives should be offered for public sector providers as well as providers from private sector and NGOs to operate in underserved areas. Local communities should be involved in monitoring public health programs. Substantial effort should made to improve the quality of care throughout Nepal.

POLICY RECOMMENDATIONS

18. Several recommendations emerge from this study:

Increase political commitment.

- Health needs to be seen as a key national development priority. It should be backed by much stronger political commitment than in the past and by substantially scaled-up efforts and commitment to improve the country's health status.

Focus on Group I diseases.

- Infectious diseases, maternal and perinatal ailments, and nutritional deficiencies—which together account for 50 percent of all deaths, 80 percent of deaths of children under the age of 5, and 69 percent of the total burden of disease in Nepal—should become the major focus of the public health effort. Prevention of these diseases as well as the emerging threat of HIV/AIDS will require comprehensive national programs of vaccination, treatment, surveillance, health education, and environmental improvement. Given the externalities associated with these efforts and the public good nature of most of these interventions, a strong public finance case can be made for using public resources. A substantial portion of public health care resources should be earmarked for cost-effective interventions aimed at reducing the major burdens of diseases. These resources should target the poorest segments of the population and people who live in underserved areas. In addition to public health

interventions under the direct control of the Ministry of Health, interventions aimed at improving water, sanitation, and public hygiene would reduce the underlying causes of a significant share of the disease burden. Support for elementary education, particularly for girls, has repeatedly been shown internationally to help ensure healthier mothers, children, and improved hygiene behaviors.

Develop institutional capacity.

- Top priority should be given to enhancing institutional capacity to strategically plan, coordinate, and implement core public health interventions at the appropriate administrative levels. An initial step would be to create a strategic framework based on addressing the key burden of disease problems.

- Every effort should be made to use existing resources efficiently and effectively. Health care workers and facilities must be better utilized. The problems of absenteeism, staff shortages, and lack of equipment and supplies, particularly in rural and remote areas, must be remedied.

Develop better health care systems.

- New strategies for delivering public and curative health services include the development of public-private partnerships, appropriately subsidized by the public purse, and the inclusion of communities in the management and financing of services. Both of these opportunities should be vigorously pursued.

- Efforts should be made to augment the resource base—through private and community financing where this is consistent with equity and poverty reduction objectives and through increased public resources where they can be afforded and used effectively. Empowerment of Village and District Development Committees, expansion of community drug schemes and other cost- and health management–sharing mechanisms can encourage new, effective, and sustainable service delivery systems.

Establish priorities.

- Because Nepal lacks the institutional or financial capacity to do everything that needs to be done immediately, health system initiatives and interventions will need to be phased in. One way of doing so is shown below. Sequenced priority interventions that have the strongest impact on health status need to be planned and given the management attention and financial resources necessary for their successful implementation.

NEED FOR FUTURE WORK

19. While many new insights have emerged from this study, considerable additional work needs to be done. Policymakers need to study the feasibility and costs of different essential heath care packages within a comprehensive framework of priority health interventions. Alternative modalities of efficient and cost-effective service delivery need to be explored. The roles of the public sector, the private sector, and NGOs in health planning and delivery need to be delineated, and issues of equity and access in health care, especially with respect to the poorest segments of the population living in underserved areas, need to be studied.

Suggested Phasing of Short-, Intermediate-, and Long-Term Interventions

What/how	*Short term (1999–2006)*	*Intermediate term (2006–11)*	*Long term (after 2011)*
What should be done ?	• Complete the unfinished agenda of controlling communicable diseases, improving pregnancy outcomes and child survival, and reducing malnutrition, with a focus on access and equity. • Address the emerging threat of HIV/AIDS through community education, advocacy, and surveillance. • Ensure basic quality assurance functions for both the public and private sectors. • Support water, sanitation, and public hygiene interventions outside the direct control of the Ministry of Health.	• Consolidate the gains from the strategic focus on controlling the unfinished agenda, ensuring that efforts are of appropriate quality and are technically and financially sustainable. • Ensure that HIV/AIDS programs meet needs. • Devote more attention to interventions for the urban poor and for community education and advocacy for lifestyle-related diseases, including diseases caused by tobacco use.	• Sustain earlier gains while shifting attention to degenerative conditions and diseases of aged.

What/how	*Short term (1999–2006)*	*Intermediate term (2006–11)*	*Long term (after 2011)*
How should it be done?	• Build the capacity of the central planning division to ensure effective policy analysis and planning. • Pay particular attention to building intersectoral collaborative capacity. • Ensure high-quality health information data for policy and planning support. • Develop appropriate quality assurance mechanisms for both the public and private sectors. • Limit the role of the public sector to basic preventive care and essential clinical care. • Improve the productivity of existing health infrastructure and staff. • Ensure adequate and competent personnel to staff health facilities through a performance-linked incentive system. • Improve the enabling framework and regulatory systems so that the government can liaise with the NGO and private sectors by piloting their active participation in service delivery. • Expand public sector infrastructure only in underserved areas where private and NGO partners are unwilling or unable to provide services.	• Firmly institutionalize quality assurance mechanisms for the public and private sector and regulatory systems for the private sector. • Encourage more involvement in health care delivery by the private/ NGO sector based on pilot experience. • Develop strategies to promote private sector investment in the tertiary sector. • Initiate contractual arrangements with the private sector for clinical services for urban residents and for management of degenerative diseases. • Initiate programs such as the creation of catastrophic insurance to build safety nets for the poor. • Enlarge the resource base by improving public investments and putting in place cost-recovery mechanisms in primary and essential clinical care.	• Encourage a greater private sector role in health care delivery. • Institutionalize accreditation systems to ensure quality and contain costs in the private sector. • Refocus the role of the public sector so that it plays essentially a regulatory role, delivering services only in cases of market failure.

What/how	*Short term (1999–2006)*	*Intermediate term (2006–11)*	*Long term (after 2011)*
How should it be done? *continued*	• Strengthen district health systems to ensure effective supportive supervision and on-the-job training to improve service quality in the public sector. • Decentralize facility management with involvement of local communities (health committees, mothers' groups) to ensure increased accountability of health staff and promote cost sharing. • Encourage the use of traditional systems of medicine where they have proved effective.		

1. INTRODUCTION

The Problem of Inadequate Health Care in Nepal

1.1 The impoverished state of health care in Nepal contrasts starkly with the richness of the country's natural beauty. Chronic institutional weaknesses and severe financial constraints at both the national and local level pose formidable barriers to the delivery and utilization of health services. The problem is compounded by the country's rugged terrain, which makes it difficult and costly to reach communities in the hills and mountains. At the same time, unabated population growth and low levels of literacy undercut efforts to reduce poverty and improve health care.

1.2 The Bank's 1991 *Poverty and Incomes Study* for Nepal concludes that even at existing income levels the welfare of the poor can be enhanced by improving their health. These conclusions are reinforced by the Bank's 1998 study *Nepal: Poverty at the Turn of the Twenty-First Century*. Despite the importance of improving the population's health status, however, health care resources continue to be underutilized in Nepal. The Bank's *1998 Country Assistance Strategy* calls for cost-effective delivery of the most essential health services. That report recommends that attention be paid to decentralizing management of service delivery and using NGOs and local communities to deliver services, particularly in underserved areas.

Scope and Objectives of the Study

1.3 This study examines operational issues in health care delivery in Nepal and makes recommendations regarding prioritizing allocations and interventions in the sector. Its principal objectives are to identify critical institutional and financial needs and gaps in health care delivery in Nepal, to suggest a policy framework to facilitate the prioritization of future health investments, and to indicate a mechanism for implementing desirable interventions in the field that are efficient, cost-effective, feasible, and sustainable and pay adequate attention to quality of care, effective access, and equity considerations.

1.4 The study focuses on the following key questions:

- What are the current and projected demographic and burden of disease profiles in Nepal?[1]

[1] The burden of disease has two components: (a) a measure of the losses from premature death which is measured as the difference between actual age at death and life expectancy at that age in a low-mortality population; and (b) loss of healthy life resulting from disability while sick. Both are

- How are equity and funding considerations likely to shape health care interventions? Should priority be given to basic or specialized care? Should resources come from public or private sources? Should expenditures be financed domestically or through external funding?

- What are the major implementation bottlenecks to delivering health care in Nepal? Specifically, how will budgetary constraints and lack of human resources, infrastructure, logistical capacity, and monitoring and supervision capability affect the delivery of health care?

- What health care options are realistic given Nepal's financial constraints (annual per capita income of US$210 and public health care expenditure, including donor financing, of just US$3.10 a year)? How should these options be prioritized, and how should interventions be sequenced?

- How can decision making about health care be decentralized, so that beneficiaries play a role in the process? What kind of alternative institutional mechanisms (including public-private partnerships) should be put in place to deliver health care at the primary, secondary, and tertiary levels, especially in remote areas?

1.5 The Bank and the government of Nepal engaged in an intensive dialogue on substantive and operational health issues while preparing the Population and Family Health Project (1994). Other relevant work from the early 1990s includes the following studies:

- *Poverty and Incomes Study* (prepared by the Bank in 1991)

- *Health Resource Allocation Study* (funded by the United Nations Development Program [UNDP] and executed by the Bank)

- *Health Infrastructure Survey and Operations Research on Outreach Service Delivery in Health* (funded by Japan's Policy and Human Resource Development [PHRD] and executed by the Bank)

- *Health Sector Review* (prepared by the government of Nepal and the World Health Organization [WHO])

- *Analysis of Health Economics of Nepal* (prepared by the government of Nepal and the World Health Organization [WHO])

- *Management Audit of the Ministry of Health* (prepared by the Nepal Administrative Staff College) (1995)

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adjusted by a discount rate (3%) to reflect that future life years are valued at progressively lower levels. These are combined and expressed in disability-adjusted life years (DALYs).

- *Study of Health Manpower* (prepared by the government of Nepal, the Overseas Development Administration [United Kingdom], and the German Agency for Technical Cooperation [GTZ])

More recent studies include the following:

- "Beneficiary Assessment of Health Care Services." (Steinman and Dhakal 1996), a study of individual and community level perceptions of health-seeking behaviors and norms, prepared under the auspices of the German Agency for Technical Cooperation (GTZ)

- *Nepal Living Standards Survey* (Nepal Central Bureau of Statistics 1996) and the Bank's sector work on *Human Resource Development in Asian Mountain Settings* (1995), which provide data on household level morbidity and health expenditure data

- A study by the Nepal National Planning Commission and the Asian Development Bank (1996), *Education and Health Sectors Assistance Strategy Study,* which provides useful updates of Nepal's national health accounts

1.6 These operations and studies throw light on particular aspects of the health system, but they do not provide a comprehensive analysis of the health sector or propose systematic recommendations for improving Nepal's health care system. This study builds on those studies and formulates a framework for developing health care systems in Nepal. Several other new studies carried out by the study team in conjunction with various agencies provide valuable new information on the sector.

1.7 Given the rudimentary level of health care delivery in Nepal and the extremely limited resources currently and prospectively available to the sector, this study focuses on developing practical recommendations for facilitating cost-effective delivery of primary health care, improving institutional development, strengthening health financing, and enhancing implementation capacity.

Collaboration

1.8 The project was carried out in close collaboration with the government of Nepal, academic institutions in Nepal, the private sector, NGOs, and donor agencies, notably the WHO and GTZ. Experts from Nepal, from the Administrative Staff College of India, and from the Bangladesh Rural Advancement Committee (BRAC) worked with the Bank team. As a result of extensive collaboration, the study reflects the major policy and operational concerns in the health sector. Broad consensus on the most important health concerns and an agenda for action emerged during more than half a dozen workshops and numerous seminars. The policy dialogue carried out with the government was highly productive and collegial.

1.9 Several products were formulated at different stages of the study. These included creation of demographic and burden of disease profiles of the population, development of service norms for various levels of health care delivery, and identification of institutional

and financial constraints and strategies for dealing with them. Each of these products created an opportunity for the team to contribute to the health section of the government's draft Ninth Five-Year Plan (1997–2002) and Long-Term Health Plan (1997–2017).

1.10 The draft reports on various topics were shared with the government and other stakeholders in Nepal throughout the study period. Further dissemination will be carried out through national workshops, seminars, and policy dialogues on the future course of health sector interventions in the country. The report will also provide a substantive basis for consultations between the government of Nepal and donors, including the Bank, regarding future investments in the sector.

Structure of the Report

1.11 Chapter 2 provides a socioeconomic and demographic profile of Nepal. Chapter 3 provides epidemiological and burden of disease profiles. Chapter 4 examines spending on health care and financing issues. Chapter 5 analyzes institutional constraints and evaluates the effectiveness of specific interventions. Chapter 6 makes recommendations about prioritizing and targeting interventions and phasing in a program of reform. Three annexes provide details of specific aspects of the report. Annex 1 presents the summary results of the Nepal burden of disease study carried out as a background study to this report. Annex 2 presents the results of two cost-effectiveness studies. Annex 3 describes the methodology used to develop the basic health care package for Nepal suggested in the report. Annex 4 provides a summary of key economic and social indicators for Nepal.

2. A PROFILE OF NEPAL

Socioeconomic Profile

2.1 Nepal is a small landlocked country of 23 million people from various ethnic groups. It encompasses three distinct ecological belts: the mountains in the north, the hills in the central region, and the narrow plains of the Terai in the South. Nepal is a Hindu country, whose social system reflects the importance of family, caste, and religion.

2.2 Prospects for Development. With per capita income of just US$210, Nepal is one of the poorest countries in the world, ranking 125th among the 133 countries included in the *World Development Report* (World Bank 1998c). A number of longstanding constraints have held back development. With the exception of hydropower and the potential for tourism, the country's resource endowment is limited. Its rugged terrain and landlocked location make it costly to produce and transport goods. Its domestic market is fragmented, and it has limited access to foreign countries. The population is growing rapidly, and health and sanitation conditions are exceptionally poor. The country's social and economic infrastructure is underdeveloped, and its administrative systems and institutions lack the capacity to plan and effectively implement programs. (Annex D, Nepal at a Glance, compares social and economic conditions in Nepal with conditions in South Asia and with low-income countries elsewhere.) In recent years, frequent changes in the government seem to have weakened development efforts in general and health care delivery in particular.

2.3 Poverty and Health Status. Poverty remains widespread in Nepal. Almost 45 percent of the rural population lives below the poverty line, with a much higher incidence of poverty in the more remote areas. Although the incidence of poverty is much lower in urban areas, some 23 percent of urban residents remain poor. The costs of basic necessities, including access to health and education services, are often far beyond the reach of the poor. While improvements have occurred in recent decades, health status remains very low. Among the five most populous countries of South Asia—Bangladesh, India, Nepal, Pakistan, and Sri Lanka—Nepal ranks last or next to last on every important indicator. The infant mortality rate is 91 per thousand—much higher than the 65 per thousand rate in India or the 75 per thousand rate in Bangladesh. Seventy percent of children suffer from malnutrition, and immunization rates are well below those in India, Sri Lanka, and Bangladesh. Thirty-one percent of children under the age of 5 are underweight in Nepal—more than the 25 percent in Bangladesh and much more than the 7 percent in Sri Lanka. The maternal mortality rate is 6 per thousand -- far higher than the 1.4 per thousand rate in Sri Lanka. Life expectancy at birth is just 57 years -- below that in India, Pakistan, and Sri Lanka. Only 48 percent of Nepalese have access to safe water -- a much lower figure than in Bangladesh (83 percent), India (63 percent), or Pakistan

(60 percent). Finally, the overall burden of disease in Nepal is high relative to other countries in the region. Particularly high is the burden from infectious diseases, maternal and perinatal disorders, and conditions resulting from nutritional disorders—all illnesses associated with countries in the first stage of the epidemiological transition.

2.4 Education. Nearly three-quarters of the population 15 years and older are illiterate (86 percent of women and 59 percent of men). These figures are significantly higher than in Bangladesh, India, and Sri Lanka. More than a third of Nepalese men and boys and two-thirds of women and girls over the age of 6 have never attended school. Because education is highly correlated with reproductive and health-seeking behavior, these low educational levels pose a critical challenge for health care planners.

2.5 Dependence on External Aid. Government revenues finance only 60 percent of total public sector spending. The difference is provided by external assistance. The level of external aid is particularly high in the heath sector, where at least half of Health Department spending is financed through external support.

2.6 Constraints in the Health Sector. Nepal's health sector is constrained by several factors. Public sector spending (including donor expenditures) on health care is a mere US$3.10 per person per year—far less than the US$12 (1993 prices) needed to provide a basic package of health care services in a developing country (World Bank 1993). The planning, provision, and financing of health care and the delivery of health services is done largely on an ad hoc basis. The result is gross inadequacies in terms of infrastructure, human resources, and service delivery. Many health facilities lack service providers and are perpetually short of essential drugs and supplies. Severe poverty, illiteracy, and lack of health education constrains demand for health services, and a rugged terrain limits access to health facilities, especially for the most vulnerable segments of the population and those residing in inaccessible areas.

2.7 Distribution of Health Care Facilities. Nepal is divided into five administrative regions (the Eastern, Central, Western, Mid-Western, and Far-Western development regions); 14 zones; 75 districts, each comprising 9-17 *ilakas* (sub-district level); 58 municipalities; and 3,913 village development committees, each comprising 9 wards.

2.8 Nepal has one regional hospital, nine zonal hospitals, and 64 district hospitals providing curative care. A network of 137 primary health care centers (headed by doctors), 745 health posts, 3,185 subhealth posts (each staffed by an auxiliary health worker and a female maternal and child health worker) provide preventive, promotive, and essential clinical care. The government's health activities in the district are administered by a district health officer.

2.9 Since 1991, when the District Development Committee Act was passed, district development committees have been responsible for economic development in their districts. Passage of the Municipalities and Village Development Committee Act of 1991 delegated developmental authority to local bodies. In 1999, in an effort to improve decentralization arrangements, the government replaced the earlier acts with the Local Self-Governance Act. Despite that legislation, however, Nepal has a long way to go

before it effectively decentralizes development administration and health care planning, financing, and delivery.

2.10 Although only 11 percent of the Nepalese population lived in urban areas in 1997, the major health facilities and personnel are concentrated in the capital city of Kathmandu and a few other cities. Rural areas, especially in the Mid-Western and Far-Western development regions and in the hills and the mountains, are underserved (Thapa 1996).

Demographic Profile

2.11 The dynamics of Nepal's demographic change affect its development prospects and epidemiological transition. The Bank's *Poverty and Incomes Study* (1991b) demonstrates that the rapid population growth in Nepal is a crucial factor leading to poverty. By eroding the limited gains made in GDP and food production, population growth severely constrains per capita income and consumption and retards development in the social sectors.

2.12 The effect of population growth in Nepal has been calamitous. Had population growth rate been contained to 1.5 percent a year rather than the 2.7 percent a year registered between 1970 and 1990, real capita GDP would have risen 45 percent instead of 14 percent over the period. There is little prospect of significantly increasing average incomes if the population of Nepal continues to grow at a rate that causes the population to double every 25 years, as it has done in the recent past.

2.13 Demographic characteristics reveal the poor state of health in Nepal. Fertility, death, and maternal mortality rates are high (the total fertility rate is 4.6, the infant mortality rate is 79 per thousand live births, and the maternal mortality rate is about 5.4 per thousand live births. Fifty percent of children under the age of five suffer from malnutrition, life expectancy at birth is a mere 57 years, and just 29 percent of the population of child-bearing age uses contraception. Even under relatively optimistic scenarios, Nepal's population is likely to grow at an annual rate of about 2 percent in the foreseeable future (table 2-1). This would double the population in 35 years, putting enormous pressure on the country's meager health services.

Table 2-1. Fertility Statistics and Population Projections, 1991–2011

Statistic	*1991*	*1996*	*2001*	*2006*	*2011*
Total population *(millions)*	18.49	21.13	23.83	26.64	29.54
Annual growth rate *(percent)*	2.66	2.41	2.23	2.07	—
Annual births *(millions)*	769,991	774,366	790,219	814,087	833,044
Total fertility rate *(No of births per women)*	5.6	4.6	4.4	3.9	3.5
All births by women 20–36 years as share of total births *(percent)*	73.0	73.0	74.0	76.0	78.0

—. Not available.

Source: Family Health Division, Ministry of Health, Nepal (1996b); Sarma (1996); Shrestha and Shrestha (1995).

2.14 Even with a marked decline in fertility over the next decade, the population of Nepal will rise significantly over the period 1991–2011. The implications of this increase and of possible changes in the structure of the population are immense. The medium variant population projection used in tables 2-1 and 2-2 (which assumes a gradual decline in fertility to 3.5 children per woman and the decline in infant mortality rate to 60 per thousand live births) demonstrate this point. Specifically:

- The increase in the population by about 60 percent will require at least a corresponding increase in health care just to provide another 10 million people with the current level of inadequate services.

- The number of women of reproductive age (15–49) is projected to increase by 71 percent, implying the need for significant expansion of reproductive and child health services, including family planning services. The number of women of reproductive age in urban areas is expected to more than triple, indicating the need for a dramatic increase in urban service. The potential demand for these services is indicated by the observation that one in three married Nepalese women currently has an unmet need for family planning. If all family planning needs were met, the level of contraceptive use in Nepal would more than double, from 29 percent to 60 percent. This in turn could dramatically reduce fertility (Ministry of Health 1996b).

- A declining fertility rate would imply that the demand for maternal and infant care services would decline relative to other reproductive health services (the number of children under 5 is expected to increase by just 22 percent). Persistently high infant and maternal mortality rates suggest that child health and safe motherhood services will still need to be expanded significantly, however, in order to reach those who are currently not adequately served as well as accommodating the population increase. The need will be particularly great in urban areas, where the number of children under the age of 5 will increase by 43 percent.

- Given the large projected increase in the elderly population (65 and over), interventions will need to target degenerative and noncommunicable diseases. The need for health care for the elderly will be particularly acute in urban areas, where their numbers will increase more than threefold.

Table 2-2. Projected Changes in Population in Nepal, 1991–2011

	Women of reproductive age (15–49 years)			*Children under 5*			*Population 65 and over*		
Item	*1991*	*2011*	*Index*	*1991*	*2011*	*Index*	*1991*	*2011*	*Index*
Total	4,373,382	7,464,691	171	3,135,966	3,836,429	122	655,515	1,093,640	187
Urban	424,245	1,424,476	336	236,748	576,191	143	54,406	179,819	331
Rural	3,949,137	6,040,215	153	2,899,218	3,260,238	112	601,109	913,821	152
Eco-zone									
Mountain	340,045	537,604	158	250,187	283,801	113	52,181	81,080	155
Hill	2,020,392	3,398,845	168	1,438,916	1,694,972	118	325,494	527,923	162
Terai	2,012,946	3,528,242	175	1,446,863	1,857,656	128	277,842	484,637	174
Development region									
Eastern	1,057,490	1,224,458	166	721,462	866,189	120	156,682	257,152	164
Central	1,456,198	2,456,607	169	1,003,221	1,243,818	124	224,936	379,849	169
Western	901,190	1,578,122	175	646,202	777,058	120	165,816	274,150	165
Mid-Western	562,942	957,306	170	450,635	556,950	124	59,990	100,906	168
Far-Western	395,561	716,932	181	314,444	392,413	125	48,092	81,583	170

Note: These data represent a medium variant projection that assumes a gradual decline in the total fertility rate to 3.5 children per woman, a decline in the infant mortality rate to 60 per thousand live births, an increase in life expectancy at birth to 62, and negligible net external migration. 1991 index =100.

Source: Sarma (1996); Shrestha, B. and Shrestha, S.B. (1995).

3. EPIDEMIOLOGY AND BURDEN OF DISEASE

Illness and Death

3.1 Infectious diseases, maternal and perinatal conditions, and nutritional deficiencies are the leading causes of illness and death in Nepal. Chronic and degenerative adult diseases are beginning to emerge as a result of various lifestyle-related factors and the ongoing demographic processes leading to rising longevity, especially in better-off and urban areas. As in India, this trend is likely to result in an epidemiological polarization in which one segment of the population successfully completes a demographic and epidemiological transition while another remains in the pretransition phase (World Bank 1997c).

3.2 The wide disparity in heath conditions and access to health care in Nepal is reflected in life expectancy statistics. In the Kathmandu district, average life expectancy is 74.4 years; in the remote mountain district of Mugu in the Mid-Western region, average life expectancy is just 37 years. Eighteen of the 20 districts in which life expectancy is less than 55 years are located in the Mid-Western and Far-Western regions; 17 of these districts are inaccessible mountain ecological zone (Thapa 1996). For the country as a whole, life expectancy is 57 years for both men and women—lower than in Bangladesh for women (57 for men, 59 for women) and significantly lower than in India (71 for men, 75 for women) (World Bank 1999).

3.3 Results of the Nepal Living Standards Survey. The 1996 Nepal Living Standards Survey (Nepal Central Bureau of Statistics 1996), which polled respondents about their health, reveals striking differences in health status within Nepal. Both acute and chronic illnesses are more prevalent in the Mid-Western and Far-Western regions, in the mountains and the hills, in rural areas, and among women.

3.4 According to the survey, 70 percent of acute illnesses cited stemmed from four sources: fever (44 percent of total), diarrhea (17 percent), respiratory problems (5 percent), and injury (4 percent). The major causes of chronic illness include asthma, heart disease, and cirrhosis of the liver. The duration of chronic illness caused by these conditions averages 7.6 years.

3.5 Creating a disease profile based on recall by study participants is problematic. Nevertheless, the findings of the Nepal Living Standards Survey suggest a pattern of illness that is consistent with estimates from other sources, including the 1998 *Human Development Report.*

3.6 Hospital-Based Data on Death. Lack of adequate vital registration data and disease surveillance systems makes analysis of sickness and death in Nepal difficult. One of the few sources of reliable data on hospital deaths is the United Missionaries of Nepal hospitals. The four hospitals run by the mission, located in the Central, Western, and Eastern regions, serve more than 300,000 outpatients a year. They are among the 14 hospitals in Nepal that provide emergency hospital services. The hospitals' data on sickness were incomplete and hence could not used to estimate illness. National epidemiological estimates for 1993 deaths were calculated based on 2,997 deaths at these hospitals over a five-year period (1991–95) following appropriate validation checks, population estimates, and application of Coale and Demeny model life tables. The data, presented in table 3-1 and figures 3-1 and 3-2, can be grouped under three main illness categories.

Table 3-1. Estimated Cause-Specific Causes of Deaths in Nepal

	Male		*Female*		*Total*	
Cause of death	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*
Group I						
Infectious, maternal, perinatal, and nutritional problems	58,049	48.1	64,528	51.3	122,577	49.7
Group II						
Noncommunicable and congenital problems	53,064	44.0	50,578	40.2	103,642	42.1
Group III						
Injuries and accidents	8,168	6.8	8,809	7.0	16,977	6.9
Unclassified	1,312	1.01	1,924	1.5	32,36	1.0
Total	120,593	100.0	125,839	100.0	246,432	100.0

Source: World Bank estimates based on United Missionaries of Nepal hospital death data.

Figure 3-1. Causes of Death among Nepalese Males, by Age Group

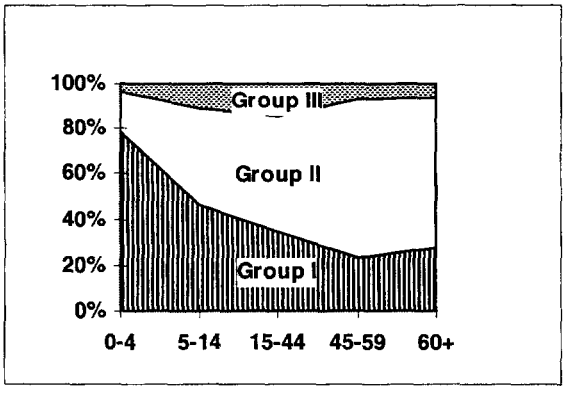
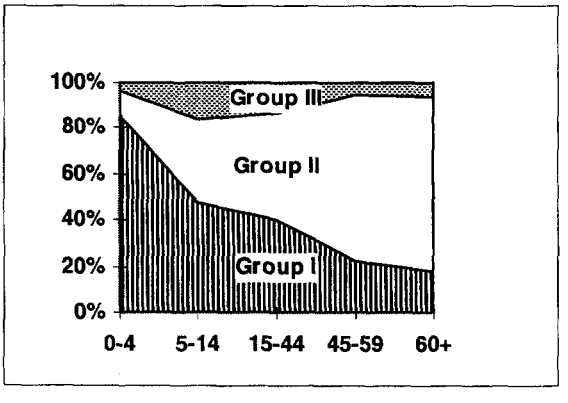


Figure 3-2. Causes of Death among Nepalese Females, by Age Group



3.7 About 50 percent of deaths in Nepal are related to Group I causes, 42 percent to Group II causes, and 8 percent to Group III causes. These statistics drive home the need to complete the "unfinished agenda" of treating infectious and related illnesses (Group I), while dealing with the growing potential of noncommunicable diseases (Group II). High levels of death as a result of accidents and injury (almost 7 percent) suggest that ways need to be found to reduce the road toll and improve occupational and household safety.

3.8 There is reason to believe that these data represent underestimates and that the true incidence of death is higher than these data suggest. The reliability of these national estimates is reduced by the fact that they are based on data from hospitals in a catchment area in which the population is healthier and better served than many. Health conditions are believed to be much worse in most other parts of the country, especially in rural communities. Hospital-based data also tend to underreport acute respiratory infection and diarrhea, which are often treated at home. Despite these limitations, the analysis provides important indications of death and disease conditions in Nepal.

3.9 Infectious, Maternal, Perinatal, and Nutritional (Group I) Causes of Death. Group I problems represent the leading cause of death in Nepal, with pneumonia and other bacterial diseases, intestinal infections, and perinatal conditions the leading causes of such deaths for both men and women. Tuberculosis, the fourth leading cause of Group I deaths for men and the fifth leading cause for women, is particularly significant given its ranking and the infectious nature of the illness. Pneumonia is a major cause of death among the elderly. Group I deaths among women peak during the child-bearing years (15–44), with about 28 percent of deaths in this age group age related to abortion and associated complications.

3.10 Children are particularly hard hit by Group I causes, which account for 80 percent of deaths among children under the age of 5. Group I causes are particularly devastating for girls. Most Group I deaths among children are caused by intestinal infectious diseases, other bacterial diseases, pneumonia, and perinatal conditions. The fact that perinatal conditions account for a fifth of all Group I deaths in young children indicates the urgent need to improve safe motherhood and child survival care.

3.11 Some of the estimates generated by these data are inconsistent with estimates from other sources. The figure for perinatal deaths may underestimate the actual death rate by as much as 5 percent. The maternal mortality ratio derived from the data (279 deaths per hundred thousand live births, about half the rate derived from other sources) may also understate the actual figure. Deaths from nutritional disorders, which include protein energy malnutrition, vitamin A and iodine deficiency disorders, and anemia, may also be underestimated. Protein energy malnutrition and vitamin A deficiency often lead to pneumonia or diarrhea, which are cited as the cause of death. Deaths from anemia are often recorded as stemming from pregnancy-related problems

3.12 Noncommunicable and Congenital (Group II) Causes of Death. Digestive disorders, bronchitis, and asthma are the leading Group II causes of death for both men and women. Cardiovascular diseases and diseases of the nervous system are also leading Group II causes of death. Among digestive disorders, acid peptic disease and cirrhosis are

the leading causes of death. Among both men and women cardiovascular disease is responsible for more deaths than cancer.

3.13 Deaths from Injuries and Accidents (Group III). Burns represent the leading Group III cause of death for women, accounting for 70 percent of deaths caused by injuries or accidents. Among men, the incidence of burns is much lower (28 percent of all Group III deaths). More than two-thirds of Group III deaths among men are caused by fractures and related injuries, a negligible cause of death among women.

Burden of Disease

3.14 Conceptual Framework. The concept of burden of disease was developed by the World Bank and the WHO (World Bank 1993). The approach is based on a new indicator, Disability Adjusted Life Years (DALYs), which combines Potential Years of Life Lost as a result of death at a given age and Years of Life Lived with Disability, using appropriate disability weights depending on the severity of the illness. This index reveals long-range implications for both individuals and society more effectively than does the traditional approach, which looks only at death rates. It provides new insights into the link between the nature and extent of illness in a society on the one hand and the desirable resource allocation for health sector activities and the prioritization of health care interventions on the other.

3.15 The burden of disease was estimated for Nepal for 1996 based on the following data sets:[1]

- population projections for 1996 made from 1991 census data, using the component method and application of the Coale and Demeny Model Life Table West, which closely fits Nepal
- age- and gender-specific death rates based on data from the United Missionaries of Nepal hospitals, with appropriate adjustments made for underestimation of death from acute respiratory infection and diarrhea
- community-based data available from WHO studies on acute respiratory infection, diarrhea, diseases preventable by vaccine, and tuberculosis
- program data for vector-borne diseases, such as kala azar, malaria, and HIV/AIDS, with appropriate adjustments made for underestimation
- estimates of noncommunicable diseases for rural India made in the Global Burden of Disease study conducted by the Bank and the WHO, taken as a proxy for Nepal.

3.16 Key Findings. About 7.7 million DALYs are estimated to have been lost in Nepal in 1996. Compared with the global burden of disease estimates for other developing

[1] Summary results of the analysis and projections of possible future trends are presented in Annex 1. Details of the methodology are available from the sector work team.

countries, the burden in Nepal is high, especially for Group I disorders. Such disorders were responsible for five times as many lost DALYs as in China and 36 percent more than in India. The disease burden in Sub-Saharan Africa is higher than in Nepal, but the pattern of the burden by major disease groups is similar (table 3-2). Tables 3-3, 3-4, and 3-5 provide insights into the structure and level of the burden of disease in Nepal.

Table 3-2. International Comparison of DALYs Lost per 1,000 People

	China		*India*		*Nepal*		*Sub-Saharan Africa*	
Disease group	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*
Group I	45	25.3	175	50.9	248	68.5	409	71.3
Group II	103	57.8	138	40.1	83	22.8	111	19.3
Group III	30	16.9	31	9.0	32	8.7	54	9.4
Total	178	100.0	344	100.0	363	100.0	574	100.0

Source: Figures for China, India, and Sub-Saharan Africa are from World Bank (1993); figures for Nepal were estimated for this report.

3.17 DALYs Lost by Disease Group. Group I diseases (infectious diseases, maternal and perinatal conditions, and nutritional deficiencies) accounted for 69 percent of Nepal's disease burden. Group II diseases (degenerative and noncommunicable diseases) accounted for 23 percent of the disease burden. Nine percent of the disease burden was attributable to Group III causes (injuries and accidents). Premature death was responsible for more DALYs lost than disability (table 3-5).

Table 3-3. DALYs Lost per 1,000 People by Age, Sex, and Cause in Nepal

	Group I		*Group II*		*Group III*		*Total*		*Male and female*
Age Range	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	
0–4	874	1,086	72	83	30	38	976	1,207	2,183
5–14	71	88	16	19	31	39	118	146	264
15–44	89	128	59	65	29	30	177	223	400
45–59	96	85	196	165	22	19	314	269	583
60+	101	79	355	351	28	22	484	452	936
Total	1,231	1,466	698	683	140	148	2,069	2,297	4,366

Source: Sector team estimates.

Table 3-4. Current and Projected Burden of Diseases Estimates for Nepal, 1996 and 2011

Item	*1996*	*2011*
Estimated DALYs lost (millions)	7.7	7.2
Percent of DALYs lost		
Children under 5	51.0	40.0
Contributed by Group I	68.5	61.4
Contributed by Group II	22.8	28.6
Contributed by Group III	8.7	10.0
Population (millions)	21.1	29.5

Source: Sector team estimates.

Table 3-5. Contribution of Death and Disability to Disease Burden

	Years of life lost		*Years of life lived with disability*		*Total DALYs*
Gender	*Number of years (millions)*	*Percent of total DALYs*	*Number of years (millions)*	*Percent of total DALYs*	*Number of years (millions)*
Male	2.75	75	0.90	25	3.59
Female	3.11	76	0.98	24	4.09
Total	5.80	75	1.88	25	7.68

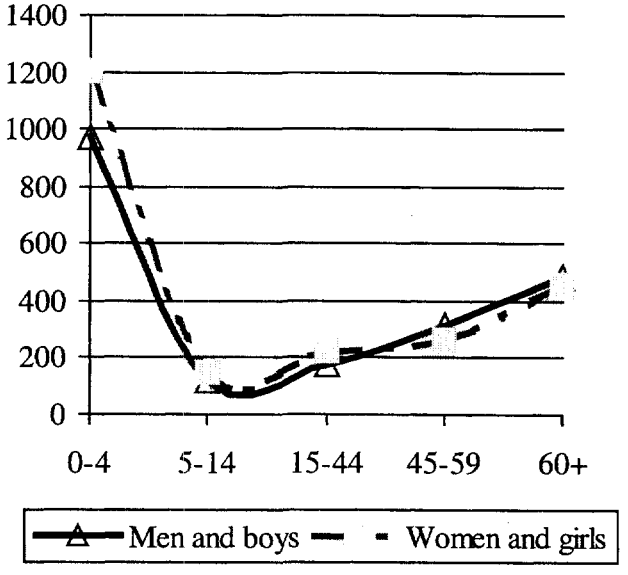
Source: Sector team estimates.

3.18 DALYs Lost by Children. More than half of the burden of disease (51 percent) is estimated to have been contributed by children under 5. The leading causes of DALYs lost by children under 5 were perinatal conditions, acute respiratory infections, diarrhea, and measles.

3.19 DALYs Lost by Women. The burden of disease was higher among women and girls than among men and boys (figure 3-3). The higher burden of disease for girls, particularly for Group I diseases, suggests gender bias in health-seeking behavior. The higher burden of disease among women 15–44 reflects the effect of maternal sickness and death. Tuberculosis, burns, and psychiatric disorders were also major causes of DALYs lost among this group.

3.20 DALYs Lost by Men. The leading causes of DALYs lost by men 15–44 were tuberculosis, accidental falls, acute respiratory infections, and motor vehicle accidents. Relative to women, men suffered a higher burden from diseases influenced by lifestyle decisions, such as smoking and drinking. These include ischemic heart disease, cirrhosis, and alcohol dependency. Injuries and accidents accounted for 9 percent of the total disease burden among 15–44 year old men, a figure that may understate the actual burden.

Figure 3-3. Distribution of DALYs Lost by Age and Gender



3.21 Projections of DALYs Lost in 2011. Assuming that current age- and gender-specific incidence and mortality rates hold through 2011, the loss of DALYs per thousand could decline by a third, from 363 in 1996 to 245 in 2011 (table 3-4). Even after the projected decline, however, the figure would still be about 38 percent higher than the 1991 level for China. Moreover, Group I disorders are expected to account for more than two-thirds of the total burden of disease in 2011.

3.22 Comparison with Other Countries. Comparison of DALYs lost in Nepal with figures for India, China, the rest of Asia, and established market economies reveals that the burden imposed by Group I diseases is particularly high in Nepal (tables 3-6 and 3-7). Established market economies -- and to a lesser degree China -- are at an advanced epidemiological stage, in which noncommunicable diseases account for the bulk of the disease burden. As life expectancy rises and lifestyles change in Nepal, the incidence of Group II diseases can be expected to rise. By 2011 Group II diseases could account for 29 percent of Nepal's disease burden (up from 23 percent in 1996). Even with this increase, however, Group I diseases are projected to represent a heavy burden for the foreseeable future.

3.23 Policy Implications. Several policy implications emerge from this analysis:

- **Improve epidemiological data.** Investment should be made to create an effective disease monitoring and vital records registration system, which would allow better epidemiological data to be collected.

Table 3-6. Distribution of Disease Burden (DALYs Lost) by Females in Nepal (1996) and Selected Other Countries, 1993
(percent of total) [1]

Disease type	*Nepal*	*Other Asia*	*India*	*China*	*Established market economies*
Group I					
Infectious and parasitic diseases	30.0	28.0	27.9	13.6	5.5
Acute respiratory infections	13.7	11.4	11.0	7.1	2.8
Maternal diseases	6.4	5.3	5.3	2.6	1.3
Perinatal conditions	13.5	6.7	8.4	5.6	2.1
Nutritional problems	6.4	5.1	2.0	3.9	2.1
Group II					
Malignant neoplasm	2.9	4.5	3.6	7.4	19.1
Diabetes	0.4	0.8	0.7	0.4	1.7
Neuropsychiatric disorders	3.4	1.7	5.7	1.7	14.9
Cardiovascular disease	7.2	10.6	9.4	13.6	23.6
Chronic respiratory diseases	1.2	2.3	2.7	8.7	3.6
Digestive disorders	1.1	3.0	3.8	3.9	3.5
Genitourinary disorders	0.8	1.4	1.4	1.3	1.5
Musculoskeletal diseases	0.3	2.1	0.6	4.1	5.9
Congenital disease	3.0	3.1	3.1	3.6	2.7
Oral health problems	0.5	1.4	1.0	0.9	0.1
Group III	8.5	5.7	8.1	14.2	7.7
Total	99.4	93.2	94.5	92.5	98.2

Note 1: Totals do not add to 100 percent because other categories for Group I and Group II are not available.

Source: Estimates for Nepal based on sector team estimates. Estimates for other countries from World Bank (1993).

- **Increase awareness of preventable communicable diseases.** Increased community knowledge of actions individuals and communities can take to prevent a wide range of diseases has the greatest potential to improve health status. Such actions include the Expanded Program of Immunization (EPI) and improving domestic hygiene, access to safe drinking water, and disposal of human waste. Ongoing and new interventions for dealing with preventable communicable diseases, such as HIV/AIDS and hepatitis B, that have the capacity to do become major contributors to the burden of disease should be implemented efficiently. Efforts should be made to increase community awareness through advocacy and social mobilization strategies.

Table 3-7. Distribution of Disease Burden (DALYs Lost) by Males in Nepal (1996) and Selected Other Countries, 1993
(percent of total)[1]

Disease type	*Nepal*	*Other Asia*	*India*	*China*	*Established market economies*
Group I					
Infectious and parasitic diseases	34.9	27.2	27.9	11.4	3.5
Acute respiratory infections	12.3	10.9	10.7	5.8	2.4
Maternal diseases	0.0	0.0	0.0	0.0	0.0
Perinatal conditions	13.5	8.0	9.9	4.9	2.2
Nutritional problems	6.0	4.3	6.3	2.7	1.3
Group II					
Malignant neoplasm	2.6	4.4	4.5	10.9	19.1
Diabetes	0.5	0.5	0.6	0.3	1.2
Neuropsychiatric disorders	4.2	7.0	6.4	7.9	15.0
Cardiovascular disease	7.6	8.9	10.1	14.3	23.2
Chronic respiratory diseases	1.4	2.3	2.6	9.3	4.1
Digestive disorders	2.2	3.2	3.8	4.8	4.6
Genitourinary disorders	1.1	1.3	1.3	2.1	2.8
Musculoskeletal diseases	0.1	1.1	0.3	1.3	2.8
Congenital disease	3.1	2.9	3.3	3.4	2.4
Oral health problems	0.6	1.2	1.0	0.9	1.0
Group III	9.0	16.2	10.2	19.1	15.2
Total	99.3	99.2	98.9	99.0	99.6

Note 1: Totals do not add to 100 percent because other categories for Group I and Group II are not available.

Source: Estimates for Nepal based on sector work estimates. Estimates for other countries from World Bank (1993).

- **Deal first with Group I diseases.** Top priority should be given to dealing with Group I diseases, which are projected to account for more than 60 percent of Nepal's disease burden through at least 2011, even without taking into account the potentially devastating effect of HIV/AIDS. A phased plan for prioritized interventions needs to be developed in which the unfinished agenda for Group I disorders (including programs to prevent HIV/AIDS and disorders related to high fertility) is fully dealt with in the immediate future. Additionally, selected affordable interventions should be developed to tackle emerging Group II killers, and basic facilities for trauma care should be established for dealing with Group III problems.

- **Focus on children.** The high burden of disease borne by young children suggests the need to reduce childhood illness and promote child survival. Particular attention should be paid to vaccinating children and preventing nutritional disorders and related

conditions. The recent decline in vaccine coverage points to a need for a special emphasis on EPI programs.

- **Create safe motherhood programs.** The high burden of maternal and perinatal disorders calls for effective safe motherhood programs, especially in remote and other underserved areas.

- **Increase focus on tuberculosis.** Tuberculosis is a leading cause of death in Nepal. It is crucial that more attention be paid to improving and extending treatment of the disease throughout the country using the direct observation therapy approach and close program monitoring.

- **Improve sanitary conditions.** The high burden caused by diseases that are strongly influenced by the environment, such as diarrhea and acute respiratory infections, points to the need to improve domestic hygiene, access to safe drinking water, and disposal of human waste.

- **Control risk factors for noncommunicable degenerative diseases.** Degenerative diseases, such as stroke and heart diseases, should be dealt with by improving diagnosis and controlling risk factors, such as hypertension and diabetes, rather than by providing expensive institutional care.

- **Reduce smoking and drinking.** Urgent interventions are needed for reducing smoking and drinking, which are very common among both men and women in Nepal. It is estimated that 60–85 percent of the population over 19 smoke, with an even higher incidence in the mountains and hills (MSMT 1997). More than 50 percent of the population consume alcohol. As longevity in Nepal increases, the burden from Group II disorders caused by smoking and drinking will grow.

- **Target underserved areas.** Severe data constraints made it impossible to estimate the burden of disease within the different developmental regions and ecological zones. Findings from the Nepal Living Standards Survey, however, point to the need to target interventions at the underserved Mid-Western and Far-Western regions and the mountain zone. Special attention is needed for dealing with Group I diseases such as diarrhea, which are found to be inversely associated with consumption level, possibly because consumption is associated with education, sanitation, and safe drinking water.

4. HEALTH FINANCING AND EXPENDITURES

4.1 This chapter outlines the structure of public and private expenditures on health care in Nepal. It notes that public expenditure on health care remains low even allowing for recent increases in health budgets and the significant underreporting of both domestically and externally financed public sector expenditures. It also shows that the share allocated to primary health care appears to have declined in recent years and that quality-enhancing nonsalary budget expenditures are very low. Estimates of private sector expenditures and its sources of finance are presented together with public sector expenditures to give a picture of total health expenditures in Nepal and its financing. Overall, some 70 percent of health expenditures is private, of which 70 percent is incurred through public provision of services (fees paid to public providers of health care).

Public Spending on Health Care

4.2 Despite increases in real expenditures over the past five years, public spending on health care remains very low in Nepal. In 1996/97—a year in which the share of public expenditure on health rose from 3.7 percent of total spending to 5.4 percent—per capita reported spending was only Rs 249, or US$2.30. The previous year, 1995/96, reported spending was only Rs 80.5, or US$1.60 per capita.

4.3 Total public spending in Nepal doubled in current value terms and rose 35 percent in real terms between 1991/92 and 1996/97 (table 4-1). Throughout most of this period, spending on health care increased proportionately, absorbing 3.4–3.8 percent of total public spending. In 1996/97 spending in the sector increased sharply to 5.4 percent of the budget. The rise at least partly reflected the increase in infrastructure and other spending made under the current IDA project in the sector rather than any expansion in health delivery financed domestically, however.

Table 4-1. Reported Public Spending on Health Care, 1991/92–96/97

Item	*1991/92*	*1992/93*	*1993/94*	*1994/95*	*1995/96*	*1996/97*
Total public spending (Rs millions)	26,418 (26,418)	30,808 (27,986)	33,597 (28,313)	39,060 (30,886)	46,542 (34,077)	51,168 (35,792)
Index of total public spending	100 (100)	117 (106)	127 (107)	148 (117)	176 (129)	194 (135)
Public health care spending (Rs millions)	918 (918)	1,061 (961)	1,066 (898)	1,496 (1,183)	1,724 (1,263)	2,743 (1,919)
Index of public health care spending	100 (100)	116 (105)	116 (98)	163 (129)	188 (138)	299 (209)
Public health expenditure as percent of total public spending	3.5	3.4	3.2	3.8	3.7	5.4
Population (millions)	19.3	19.8	20.3	20.9	21.4	22.0
Per capita public health care spending (Rs)	47.7 (47.7)	53.6 (48.5)	52.4 (44.2)	71.6 (56.6)	80.5 (58.9)	124.9 (87.3)
Per capita public health care spending (US$)	1.5 (1.5)	1.3 (1.1)	1.2 (1.0)	1.5 (1.2)	1.6 (1.2)	2.3 (1.6)

Note: Figures in parenthesis represent real values. Expenditure figures for 1996–97 figures are revised estimates.

Source: Nepal, Ministry of Finance, *Red Books* (various years); Shrestha B. and Shrestha S.B. (1995); Nepal, Ministry of Health (1997); Sarma (1996).

4.4 Recurrent (regular) budget spending on health care has represented about 45 percent of total public health care spending, while development spending has represented about 55 percent of spending (table 4-2). About two-thirds of the health development budget was provided by the government, with the remaining funding coming from external sources.

Table 4-2. Reported Public Health Care Spending by Source, 1991/92–1995/96
(Rs millions)

Source	*1991/92*	*1992/93*	*1993/94*	*1994/95*	*1995/96*
Regular					
Government of Nepal	410.9	460.8	505.1	637.0	808.9
Development					
Government of Nepal	325.2	333.9	333.7	442.3	682.3
External	182.0	266.3	226.8	416.3	233.1
Total development	507.2	600.2	560.5	858.6	915.4
Total	918.1	1,061	1,065.6	1,495.6	1,724.3

Source: Nepal, Ministry of Finance *Economic Surveys* (various years); Nepal, Ministry of Finance, *Red Books* (various years); Nepal, Ministry of Health (1998).

4.5 Social sector spending also increased over the period, rising from about 22 percent of public spending in 1991/92 to about 27 percent in 1996/97. Spending on health care kept pace with total spending only because of the increased allocations in 1996/97, without which spending would have lagged behind increases in other sectors. Spending on the water supply, which can have a crucial positive impact on health status, also kept pace with total spending only as a result of the increased allocations (table 4-3). Spending on education, which is positively correlated with health outcomes, increased over the period, although 1996/97 spending levels were significantly below the peak level achieved in 1995/96.

Table 4-3. Reported Public Social Sector Spending 1991/92–1996/97
(percent of total public spending)

Sector	*1991/92*	*1992/93*	*1993/94*	*1994/95*	*1995/96*	*1996/97*
Education	10.9	13.4	12.8	13.0	14.2	11.8
Local development	1.6	2.2	3.0	6.2	8.2	6.6
Health	3.5	3.4	3.2	3.8	3.7	5.4
Water supply	5.1	5.9	2.9	2.8	2.8	2.9
Education, local development, health, and water supply	21.1	24.9	21.9	25.8	28.9	26.7

Source: Nepal, Ministry of Finance, *Red Books* (various years).

4.6 Underreporting of Public Health Spending. Official estimates of health and social sector expenditures are believed to significantly underestimate actual spending. As much as 85 percent of contributions to the health sector by external donor agencies, international nongovernmental organizations (INGOs), and NGOs were not reported in the government's records (UNDP 1998; Shah 1996; Asian Development Bank 1997) (table 4-4). Some analysts believe underreporting to be even greater (Shrestha 1997).

Table 4-4. Underreporting of External Assistance to the Health Sector, 1991/92–1995/96

Item	*1991/92*	*1992/93*	*1993/94*	*1994/95*	*1995/96*
Underreported spending (Rs millions)	441.3	730.5	1,311.2	1,212.2	1,121.3
Percent of reported spending	70.8	73.3	85.3	74.4	82.8

Source: UNDP (1994); Nepal Ministry of Finance (1996); Sector team estimates.

4.7 The official health budget also fails to reflect nearly a tenth of total public sector health spending financed by the government, and it underreports the regular (recurrent) budget by 25 percent. Unreported spending includes spending by the Ministry of Education on medical education and related programs, spending by the Ministry of Finance on medical assistance to public sector employees, and spending by the Ministry of Defense on medical care for its employees. The Ministry of Health's secretariat costs were also excluded from the budget until 1995/96 (Shah 1996; Nepal Ministry of Finance, Red Book, 1996).

4.8 Estimates of total health spending by the government and external resources for the period 1993/94–1995/96 suggest that annual public sector per capita spending on

health in Nepal was nearly US$3.10 in 1995/96, much higher than the official estimates of US$2.3 (table 4-5). The adjusted figure is about one-fourth the US$12 per capita level the World Bank estimates was needed to provide essential health services in developing countries in 1993 (World Bank, 1993).

4.9 Another striking feature of health sector budgeting in Nepal is that development budgets—both government and donor financed—include very significant levels of recurrent expenditures. Key aspects of the current health system are thus financed by mechanisms designed to finance one-time expenditures. This raises important questions about the sustainability of key expenditures that are not fully integrated into and planned for in the recurrent budget. The high level of recurrent expenditures has important consequences for the sustainability of donor-financed projects that are approved without adequate consultation with the Ministry of Finance. It is important that budgets capture all expenditures and that recurrent cost requirements of development budget expenditures are calculated and taken into account before projects are approved.

Table 4-5. Public Spending on Health Care Adjusted for Underreporting, 1993/94–1995/96

Source	*1993/94*	*1994/95*	*1995/96*
Government of Nepal			
Regular budget of the Ministry of Health	505.1	637.0	808.9
Development budget of the Ministry of Health	333.7	442.3	682.4
Other ministries	124.9	185.1	301.3
Total government spending on health care	963.7	1264.4	1,792.5
External donors			
Development budget of the Ministry of Health	226.8	416.3	233.1
Unreported spending	1,311.2	1,212.2	1,121.3
Total external spending on health care	1,538.0	1,628.5	1,354.4
Total public spending on health care	2,500.7	2,891.9	3,146.9
Population (millions)	20.3	20.9	21.4
Per capita government spending on health care (US$)	1.0	1.2	1.8
Per capita spending on health care from external sources (US$)	1.7	1.6	1.3
Total per capita health care spending (US$)	2.7	2.8	3.1

Source: Tables 4.2 and 4.4; Shah, Health Budget and Expenditure: A Trend Analysis (1996); UNDP Development Cooperation Reports (1994–96).

4.10 Primary Health Care Spending Trends. An alarming trend in resource allocation trends is the fact that the share of total health care spending allocated to primary health care budgets has fallen from almost 80 percent in 1991/92 to less than 60 percent in 1997/98 (table 4-6). At the same time, allocations for hospitals rose. External assistance to primary health care also declined significantly over this period, falling from 46 percent of total donor spending in 1991/92 to 36 percent in 1996/97. While more work is required to systematically document trends in health budget allocations and spending, the sector team's work indicates that these trends are real.

Table 4-6. Trends in Budget Allocation Shares by Major Components, 1991/92–1997/98
(percent)

Category	*1991/92*	*1992/93*	*1993/94*	*1994/95*	*1995/96*	*1996/97*	*1997/98*
Primary care							
Service delivery	34.8	31.5	34.0	29.2	34.0	26.6	24.9
Support services	6.3	10.1	6.1	8.4	7.7	7.9	7.6
National health programs	35.7	34.2	32.7	25.5	21.7	29.4	24.7
Total primary care	76.8	75.8	72.8	63.1	63.4	63.9	57.2
Health policy and management	5.7	4.9	4.4	3.8	3.2	2.5	2.5
Hospitals	14.6	16.3	20.0	30.3	30.0	30.6	37.5
Traditional medicine	2.9	3.1	2.8	2.9	3.4	3.0	2.8

Note: Primary care service delivery includes all expenditures (regular and development) up to the district level. Support services includes training, information, education and communication (IEC), management information systems, laboratory services, epidemiology, and related services. Health policy and management includes the Ministry of Health, the Department of Health Services, and the regional health directorates. Central hospitals include specialty institutions and central, regional, and zonal hospitals. Traditional medicine includes the departments of ayurved, unani, naturopathy, and clinics and hospitals run by traditional systems.

Source: Nepal, Ministry of Finance, *Red Books* (various years).

4.11 Equally alarming is the fact that personnel costs account for an extremely large share of the recurrent budget. Spending on medication and equipment is estimated to have fallen from 13 percent of recurrent health care spending in 1994/95 to just 9 percent in 1996/97. Allocations for nonsalary costs are two to three times higher than in many other developing countries, including Pakistan, where efforts are under way to improve the level of nonsalary inputs required to improve the quality of services. The distribution of these allocations will need to be reversed if the goal of controlling communicable diseases and improving maternal and child health services in Nepal is to be achieved.

4.12 Lack of Absorptive Capacity. One indicator of absorptive capacity is the share of the budget that is spent each year. Since 1988/89, 20–40 percent of the development budget of the Ministry of Health has gone unutilized (table 4-7). Use of development funds, while fluctuating from year to year, has been low over the entire period. Other, albeit fragmented data, indicate that about two-thirds of the external development resources allocated in some years was released and only about 60 percent utilized. In contrast, the nearly full utilization of the regular budget largely reflects inflexible spending on health personnel. Budgets for medications, equipment, other essential supplies, and allowances for staff mobility (travel allowances) are low and are often underutilized.

Table 4-7. Reported Health Care Budget Allocations and Expenditures, 1984/85–1996/97
(Rs million)

Description	*1984/85*	*1985/96*	*1986/87*	*1987/88*	*1988/89*	*1989/90*	*1990/91*	*1991/92*	*1992/93*	*1993/94*	*1994/95*	*1995/96*	*1996/97*
Regular budget													
Allocation	150.7	188.5	200.4	231.9	268.7	318.6	316.1	405.67	490.9	541.6	710.9	954.3	973.0
Spent	139.4	150	182.5	204.1	251.1	296.1	293.8	410.9	460.8	505.1	637	808.9	956.4
Percent spent	92.5	79.6	91.1	88.0	93.5	92.9	93.0	101.9	93.9	93.3	89.6	84.8	98.3
Development budget													
Allocated	332.8	403.4	379.6	583.3	819	614.9	568.8	632.4	741.5	931.5	1361	1594.7	2485.0
Spent	254.8	255.9	309.2	385.2	616	393.8	366.8	507.2	600.2	560.5	858.6	915.5	1787.0
Percent spent	76.6	63.4	81.5	66.0	75.2	64.0	64.5	80.2	81.0	60.2	63.1	57.4	71.9

Source: Shah, Health Budget and Expenditure: A Trend Analysis (1996); Nepal Ministry of Finance, *Red Book* (1997).

4.13 Various constraints reduce the absorptive capacity of external aid within the Ministry of Health. Frequent delays in disbursements and slow project implementation are typical. Decisions on investments remain largely ad hoc and supply-driven, depending on funding availability from a certain source and for a certain period rather than on need-based prioritization and a long-range vision for the sector. Budget ceiling guidelines cause allocations to be too thinly spread across numerous interventions. Poor planning, inadequate implementation, and other systematic weaknesses at the Ministry of Health and within government more generally may be inhibiting both government and donor agencies from investing in health.

Private Spending on Health Care

4.14 Private sector spending on health services is significant in Nepal. Of the Rs 10.9 billion spent on health in 1995/96, more than 70 percent was private. In contrast, the government financed just 17 percent of total spending and donors financed 12.4 percent. In per capita terms, total annual spending on health care is estimated at Rs 525 (US$10.50), with private expenditures estimated at Rs 370 (US$7.40). More than two-thirds of this figure represents private out-of-pocket spending. Spending by the Ministry of Health represents about 16 percent of total health expenditures (Rs 83, or US$1.70 per capita). Improving our knowledge of the sources and uses of private expenditures on health is crucial to improving our understanding of the equity of health expenditures and of the role of the private sector in health delivery.

Table 4-8. Public and Private Expenditure on Health by Financing Sources, 1995/96

Sources and uses of funds	*Spending (millions of Rs)*	*Percent of total*	*Per capita spending (Rs)*	*(US$)*
Private spending				
Spending by households on public care				
Hospitals	2,069.3	18.9	2,069.3	2.00
Clinics	2,277.0	20.8	109.4	2.20
Mobile camps	97.4	0.9	4.7	0.10
Subtotal	4,443.7	40.7	213.4	4.30
Spending by households on private care				
Pharmacies	502.6	4.6	21.1	0.50
Home visits	111.4	1.0	5.4	0.10
Others	2,024.1	18.5	97.2	1.90
Subtotal	2,638.1	24.2	126.7	2.50
Other private spending				
INGOs/NGOs	63.8	0.6	3.1	0.10
Traditional care	389.3	3.6	18.7	0.40
Private companies	164.1	1.5	7.9	0.20
Subtotal	617.2	5.7	29.7	0.70
Total private spending	7,699.1	70.5	369.8	7.40
Public sector spending				
Ministry of Health	1,724.3	15.8	82.8	1.70
Ministry of Education (University)	25.1	0.2	1.2	0.00
Ministry of Education (nutrition program)	16.8	0.2	0.8	0.00
Ministry of Defense (Birendra Army Hospital)	63.4	0.2	0.8	0.00
Ministry of Home Affairs (Police Hospital)	39.1	0.6	3.0	0.10
Ministry of Finance	154.2	0.4	1.9	0.00
Employee Medical Facilities Nepal Leprosy Control Association	2.8	1.4	7.4	0.10
Total public spending	1,868.6	17.1	89.8	1.80
Spending by external sources				
Officially reported spending	233.1	2.1	11.2	0.20
Estimated underreporting	1,121.3	10.3	53.9	1.10
Total external spending	1,354.4	12.4	65.1	1.30
Total spending from all sources	10,922.0	100.0	524.6	10.50

Source: Nepal Central Bureau of Statistics, Nepal Living Standard Survey Report (1996); Nepal National Planning Commission/Asian Development Bank, Education and Health Sectors Assistance Strategy Study (1996); Nepal, Ministry of Finance, Red Books; Shah Health Budget and Expenditure Analysis: A Trend Analysis (1996); Sector team estimates.

4.15 At first sight, the data in table 4-8 suggest that the role of the public sector in providing health services is relatively small. The fact that about two-thirds of health expenditures is financed by households is misleading, however, because more than 40 percent of private health care spending and almost two-thirds of household expenditures were spent on medication, transport, and cost-sharing at government health facilities.[1] The data also suggest that about 70 percent of resources spent on health services pay for public sector provision of services (assuming all externally financed spending is through the public sector). These figures suggest that potentially very important synergies exist between the public and private sectors and private households that need to be better understood as health policies and strategies are formulated.

4.16 Given the very high incidence of poverty in Nepal, particularly in rural areas, this level of private expenditure on health raises concerns about the equity of overall health expenditures. Are all citizens receiving some minimum level of coverage? Are poor people receiving treatment? Results from the 1995/96 Nepal Living Standards Survey provide some guidance on these questions. Household expenditures spent gaining access to publicly provided health services vary substantially by income group, ranging from Rs 470 a year for the poorest quarter to Rs 5016 for the wealthiest quarter. As a share of total income, expenditure by the lowest income group is less than half that for the highest group. The average cost of seeking treatment is Rs 367 (ranging from Rs 183 in a primary health center to Rs 637 in a hospital), equivalent to two weeks of per capita consumption. These data strongly suggest that the poor do not have the resources required to purchase necessary health care or even to afford the travel expenses necessary to access care. As regression analysis has shown along with distance to a health facility, household economic status is a significant determinant of whether or not an individual seeks treatment, even at the current level of subsidization. Without a significant degree of subsidization, the poor would not have access to health services.

4.17 According to the 1995/96 Nepal Living Standards Survey, 28 percent of cases seen in urban areas over the previous 12 months and 16 percent of cases in rural areas were treated in public hospitals. Forty percent of rural cases and just 13 percent of urban cases were treated at health centers and health posts. Other data suggest that over a 12-month period, almost 5 percent of the wealthiest quartile and less than 3 percent of the poorest quartile used public health facilities. Overall, even though the urban population made twice as much use of private facilities as the rural population, they benefit most from public health care subsidies because they seek medical treatment and use higher-cost public facilities more often than the rural population. The data also strongly suggest that subsidization of higher-level facilities, such as hospitals, disproportionately benefits people with higher incomes. If subsidization of health services is to be based on the rationale of equity, the lowest income groups should benefit more than other groups. For this to occur, better targeting of the location of facilities will be necessary, with more funds allocated to rural areas and fewer funds allocated to urban hospitals. In addition, there is a need for means-based instruments for cost recovery for hospital-based treatment.

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[1] Some private household expenditure is for fees and charges that are not sanctioned by government fee schedules. It is important to document the scale and extent of this black market in order to design policies that will encourage transparency and reduce corruption where it exists.

4.18 Developing a deeper understanding of both public and private sector health expenditures and financing by level of care, income group, disease, rural or urban location, region, and input mix would greatly assist policy development and assessment of options to refocus health priorities in Nepal. Nepal's total per capita health care spending of US$10.50 is close to the level needed to provide a basic health care package. Given the importance of private health expenditures, public discussion should focus on options to redirect that spending, and appropriate action should be taken.

5. HEALTH SYSTEMS ISSUES

Institutional Constraints

5.1 The scarcity of resources in the health sector is aggravated by the weakness of Nepal's public institutions. The problem affects the government's ability to develop strategic plans and policies, mobilize resources, and coordinate the efforts of external donors and national stakeholders.

5.2 Lack of Planning and Coordination Capacity. The planning and coordination capabilities of the Ministry of Health are inadequate. Skills in planning and program development, management, health economics, and financial analysis are lacking. In addition, the responsibilities of the Ministry of Health's Planning Division and a similar unit established under the Department of Health Services in 1993 are poorly defined. These problems are compounded by the lack of an effective mechanism in the Ministry of Finance for monitoring and coordinating all domestic and external resources flowing into the health sector.

5.3 The process of integrating various primary health care programs remains weak, and planning, budgeting, operations, and monitoring mechanisms have yet to be decentralized adequately to the regional, district, and outreach levels. These problems have forced central agencies in the Ministry of Health and Department of Health Services to micromanage outreach tasks, making it difficult for them to focus on overall policy, planning, quality of care, and technical support.

5.4 Collaboration and coordination with government agencies and other stakeholders is limited. Mechanisms are inadequate for effective coordination among the National Planning Commission and the Ministry of Finance and other sectors and stakeholders, including NGOs and the private sector. Health sector interventions for both national and external agencies are handled by multiple agencies—the planning divisions in the Ministry of Health and the Department of Health Services, the Ministry of Finance, the National Planning Commission, and the Social Services National Coordination Council —and there is no consolidated documentation of activities planned or undertaken by the numerous actors in the field.

5.5 The national health program has been greatly handicapped by inadequate coordination of donor resources within a framework of generally accepted and prioritized interventions. External aid from donors, INGOs, and NGOs often lacks transparency and clear linkages to national strategies. The result is segmentation of efforts by different actors, suboptimal utilization of resources from various sources, wasteful duplication and uneven quality of implementation efforts, and diversion of human and financial resources

to nonpriority interventions. Programs that have been officially integrated into the health system often continue to receive funding from different sources, which often causes inefficiency. Efforts by some donors to expedite implementation of projects and programs on a turn-key basis through direct funding at the execution level have proved ineffective and unsustainable. Such efforts usually prove to be counterproductive because they fail to take note of the problem of inadequate national implementation capacity or the need to ensure that health interventions are both technically and financially sustainable.

5.6 Adding to the problems is inadequate decentralization of responsibilities for service delivery. The district health offices typically lack skilled human resources and micro-planning capability to respond to local needs. Organizational and management structures need improvement. Relations between district health officers (usually physicians) and public health officers (who were in charge of the District Public Health Office until the 1993 reorganization) remain strained. Preoccupied with clinical and management responsibilities, district health officers make only infrequent visits to outreach facilities, and they have established only weak linkage with local communities.

5.7 Inadequate Human Resource Management. The quality of health care delivery has declined in recent years as a result of retrenchment of more than 2,000 experienced technical staff who had been financed by the development budget. Inadequate human resource management and husbanding of resources in support of key programs—whether from the development or recurrent budget—meant that key activities could not be sustained. Moreover, the regular budget has not been able to sustain or improve the work environment in recent years. The benefits package for staff has not improved or been adjusted in an effort to enhance health system capacity, promote individual performance (and attendance), or improve the general quality of health care.

5.8 The problem of staff vacancies and absenteeism is acute in rural health facilities, especially in underserved areas. Nationally, at least a third of the sanctioned posts of health assistant, auxiliary nurse midwife, and village health worker are reported to be unfilled (Ministry of Health 1997), and many posts reported as filled are actually vacant. Findings from a March 1998 survey of 108 outreach facilities indicate that the ratio of sanctioned posts to those filled and to those physically present in the Health Posts and public health clinics is 10:6.3:4.6 (Nepal Ministry of Health 1998). That is, sanctioned staff are about 40 percent below desirable levels, and less than 50 percent of the desired staffing is present because of high levels of absenteeism.

5.9 These staffing problems pose a major concern for both the quality of care and for system capacity to meet service needs, particularly in certain regions. The Central Development region has the highest percentage of sanctioned posts filled and a larger proportion of personnel present in the facilities than in other regions. In the Mid-Western and Far-Western regions, staff shortages are critical and absenteeism rates of sanctioned staff are high. Health workers prefer not to work in rural and remote areas for a variety of reasons, including lack of financial incentives, poor working conditions, inferior educational opportunities for their children, lack of suitable accommodations, and separation from family. Regulations on remote area postings are not uniformly applied to

all levels of staff or all individuals, further diminishing the appeal of serving in such areas.

5.10 Two other problems compound staff issues. The first is the frequent changes in the government and the high rate of turnover of health personnel at various levels in recent years, which has substantially impeded program implementation. The second is the lack of adequate pre-service and in-service staff training. The expanding market of private sector facilities that provide better incentives may also make it difficult for the public sector to attract and retain health personnel. Training programs need to be developed with a much improved understanding of the overall labor market for health staff.

5.11 Opportunities for in-service training for Ministry of Health personnel are limited, and they are provided in ways that are not cost-effective. Although an integrated service delivery approach has been adopted at the district level, training tends to be offered in a segmented manner. Health care delivery is frequently disrupted while service providers attend training courses offered by various program divisions—usually supported by different donor agencies. Lack of trainers and necessary support reduces the effectiveness of training. Lack of career advancement opportunities for entry-level and mid-level health personnel also means that incentives for pursuing in-serving training are limited.

5.12 Government can improve its citizens' health status not only by providing more public resources and improving its capacity to effectively deliver resources but also by taking measures that will enable other providers (NGOs and the private sector) to expand their activities. In fact, international experience strongly suggests that contracting out services to NGOs and private providers can overcome many of the problems identified with public provision of services. Decentralization to communities of the management of services and funds in support of those services can also improve the effectiveness and responsiveness of service delivery to community needs.

5.13 Collaboration with NGOs. Improved collaboration between the public sector and NGOs could be an important mechanism for improving health service delivery. Formally, as part of both the Eighth and Ninth Five-Year Plans, the government has adopted policies designed to create a more conducive environment for collaboration with NGOs. Implementation has lagged, however, and the potential of these relationships has yet to be fully realized.

5.14 On the positive side, NGOs in Nepal provide maternal and child health services and work to control the spread of infectious diseases. About a third of NGOs offering health services are involved in local capacity-building activities, such as training female community health volunteers and traditional birth attendants. NGOs have also pioneered the concept of training traditional healers to create health awareness in communities and to identify signs of life-threatening conditions that require referral to health care facilities. Some provide training in participatory learning and micro-planning.

5.15 Many NGOs operate as parts of networks, coalitions, or coordination forums. The Support Network for Safe Motherhood, for example, comprises more than 70 organizations. This networking has helped smaller NGOs improve their effectiveness and

may provide a means of establishing formal linkages between the government and smaller locally based and often very effective NGOs.

5.16 Some NGOs have already established formal linkages with the government (by agreeing, for example, on common management practices in the control of tuberculosis). These ties could be expanded to include contractual arrangements under which the government would hire NGOs to provide services in underserved and remote areas. NGOs could even operate within the existing government infrastructure or monitor service delivery provided by the public sector as third parties, providing managers and beneficiaries with information on health system performance and outcomes.

5.17 Collaboration with NGOs is constrained by a number of factors:

- Although the government's Five-Year Plans articulate the need for partnerships with NGOs, the lack of an appropriate regulatory framework and generally accepted working mechanisms to transfer public (government and donor) funds to NGOs has made it difficult to implement the policy. This has weakened public and NGO sector collaboration at the field level and at times led to questioning of the government's commitment to this strategy by some health sector stakeholders. NGO unwillingness to share cost information has also raised concerns in some quarters about unit costs and sustainability of their programs.

- The lack of clear operational guidelines monitoring NGO activities and linking them to mainstream operations has strained relation between the two sectors.

- NGOs have tended to target urban and easily accessible areas, where they often duplicate services provided by the public and private sectors. Although 256 NGOs operate in the health sector, 60 percent operate in the Central region and another 32 percent are in the Eastern and Western regions. Only 8 percent of NGOs operate in the Mid-Western and Far-Western regions (Center for Policy Studies, 1996).

5.18 There remains the need for the government to link NGO services to the mainstream and to establish structures in which NGOs can be centrally funded for undertaking service provision in areas where the government faces particular difficulties.

5.19 Collaboration with the Private Sector. The private sector in Nepal includes hospitals, nursing homes, and diagnostic centers run by qualified doctors in urban areas; pharmacies, which often dispense drugs without proper prescriptions; and practitioners of indigenous systems of medicine and unqualified providers who operate throughout the rural parts of the country. As discussed in chapter 4, of the estimated Rs 10.9 billion spent on health care in Nepal, Rs 7.7 billion is private. More than a third of private expenditure (Rs 2.6 billion) is being spent in private sector facilities. Rs 4.4 billion of private expenditure is spent in public facilities, with the remainder spent by NGOs. Total private annual per capita expenditure is estimated at Rs 370 (US$ 7.40) (see table 4.8).

5.20 The public sector could collaborate with the private sector in several ways. First, it could encourage the private sector to play a more active role in both tertiary care and

selected components of primary health care. Many families are willing and able to pay for service from private providers. The public sector could focus on providing an essential health care package, including primary health care items, and creating social safety nets for the poor.

5.21 Second, the public sector could enlist the services of the estimated 400,000 traditional healers, who could function as "community mobilizers," promoting and generating demand for preventive health care. These traditional healers could also serve as community-based depots for contraceptives, oral rehydration supplies, and common over-the-counter medications.

5.22 Third, establishing an appropriate enabling environment for private medical education could help make essential clinical services available in underserved regions, including the Mid-Western and Far-Western regions. Medical colleges could also play a role in expanding the provision and monitoring of service delivery at the district and community levels in their respective catchment areas.

5.23 New avenues of collaboration between the private and public sectors are feasible, particularly if the private sector continues to grow as expected. Contractual arrangements could be made under which the private sector would provide reproductive and child health services in urban slums. The private sector could also provide tertiary care centers to manage safe water supply and sanitation at the community level as well as help deal with emerging challenges, such as degenerative diseases. To facilitate collaboration with the private sector, the public sector needs to establish, in consultation with private providers, an appropriate regulatory framework for quality control and client protection, including safety nets for those below the poverty line—something that is also required for services provided by the public sector itself.

5.24 Collaboration between the public and private sectors is constrained by several factors:

- As with the concentration of NGOs, more than two-thirds of the beds available at private sector health care facilities are located in the Central region, which is already better-served than other parts of the country (Center for Policy Studies, 1996). Three out of Nepal's seven new private medical colleges are located in the Central region.

- Inadequate regulatory systems are in place to ensure quality of care in the private sector. Throughout the country, pharmacies indiscriminately dispense drugs over the counter. The high cost and the variable quality of services provided in the private sector remain major concerns.

- Ineffective implementation of government policies, such as customs duty exemptions and sales tax reductions on health equipment and goods, is discouraging investment by the private sector. Financial markets are not yet willing to lend to health sector enterprises at reasonable rates or for more than short periods of time.

5.25 Inadequate Access to Health Facilities. Access to health care is acutely constrained by Nepal's rugged terrain, limited health infrastructure, and lack of financial

resources. The doctor-population ratio is about 1:15,000 for the country—very low by international standards even for low-income countries. Most doctors and public sector health facilities are concentrated in urban areas and in the relatively developed Central, Eastern, and Western Regions. As discussed, NGOs and the private sector are also concentrated in urban and more accessible areas.

5.26 The position is even more skewed with respect to the regional distribution of private health care services. The Central region accounts for 73 percent of all private heath facilities, 78 percent of all hospital beds, and 41 percent of all registered pharmacies. In contrast, no private health care facilities operate in the two least developed regions, and only about 7.5 percent of the paramedical training institutions of the country are located there (Institute of Health Development and Research, 1996)

5.27 The nongovernment sector does not represent a panacea with which government can relieve itself of its main responsibilities for promoting public health and ensuring that the poor get treated. Cooperation with the nongovernment sector can improve health care, however. Specifically, the nongovernment sector could be encouraged to become more geographically diverse, and the public sector could purchases services from private hospitals (and clinics) for treatment of the poor.

5.28 Inadequate Infrastructure. A recent study of health facilities infrastructure revealed that one-fourth of the 685 health posts surveyed had inadequate infrastructure (Tiwari S.R,1995). These facilities were in poor physical condition and lacked proper furniture and equipment. The poor maintenance of many facilities revealed the effects of inadequate maintenance budgets. None of the health posts is in the Far-West region, and only 27 percent of the posts in the East Terai have running water. Many lack electricity, toilets, and staff quarters. Some of these infrastructure problems are being mitigated by the current Population and Family Health Project, supported by IDA, but the problems remain significant.

5.29 Shortages of Medication. Many facilities suffer from a chronic shortage of specific medications. The annual supply of vaccines and anti-malarial, anti-leprosy, and anti-tuberculosis drugs appears adequate. Other drugs, however, are in short supply in peripheral health facilities. Regular distribution is also often irregular, sometimes causing essential drugs to be unavailable for four to six months a year. Shortages of dental preparations and antibiotics, ophthalmics, analgesics, anti-allergic, and ear, nose, and throat medications are particularly severe. The supply shortages are more severe at primary health care centers than at health posts, and they are worse in the Terai than in the mountains and hills. About 70 percent of health facilities receive their supplies annually. Once they use up their supplies, they must function without drugs until the following year. No regular utilization reports are submitted, and supply is not based on need (Mid-term Review, Nepal Population and Family Health project, Project Implementation Unit, Ministry of Health, 1997).

5.30 The use of available drugs is not optimal. A better system of distribution of scarce resources could be planned and implemented. This should include training staff in the use of drugs, particularly by improving prescribing practices, which are often irrational and wasteful (Karki N.D., 1995).

5.31 About half of Nepal's health facilities have to send staff to collect supplies—a process that can take as long as six days in remote areas, which constitute a significant part of the country. The cost of transport and travel allowances are inadequately budgeted and must be borne by the facilities themselves, which are inadequately funded. The usual time lag between requesting and receiving drugs is about 1–4 months in the more accessible area and 9–12 months in the remote areas. Clearly, this is inadequate for quality care and a client responsive health care system (Karki N.D.,1995). The situation seems to be improving as a result of logistical support from the current Population and Family Health Project.

5.32 Shortages of Equipment. A survey of outreach health facilities revealed that none was fully equipped with basic instruments. Sixty-nine percent did not have diagnostic sets, about half did not have blood pressure instruments, and more than a third lacked thermometers. Health care facilities located in the mountain and hill areas were less well-equipped than those in the Terai.

5.33 Maternal Health. Maternal mortality remains very high in Nepal (5.4 per 1,000 live births). Service delivery data indicate that only one out of five pregnant women receives prenatal care. Most of those who do receive care are literate urban residents, and those who receive care generally make but a single visit (National Planning Commission and UNICEF 1996). More than half of women who receive prenatal care do not receive prophylactic iron, and only a tenth of pregnant women receive tetanus immunization. These gaps reflect poor planning and ineffective referral linkages.

5.34 With only 8 percent of births in Nepal attended by trained personnel (UNFPA 1998), prenatal care in Nepal is among the weakest in the region (only war-ravaged Afghanistan has worse care). Limited community awareness regarding safe motherhood services, the acute shortage of female staff at the grassroots and district levels, and the virtual absence of a referral mechanism has led to low demand for services by pregnant women. The government has initiated a program for strengthening safe motherhood services in 10 districts. Implementation has started in three of those districts, but more needs to be done.

5.35 Child Health. Infant and child mortality is very high in Nepal. The infant mortality rate is 79 per 1,000 live births; mortality among children under 5 is 118 per 1,000. In addition, about half of children under 5 suffer from undernutrition.

5.36 Nepal has the basis for a sound EPI program. The recent decline in donor support and inability of government to fully replace donor funds, however, has raised the possibility of a decline in immunization coverage levels. It is crucial however, that the EPI program be reinvigorated and put on a sound technical and financial footing so that all children are fully immunized. New vaccines that become available over the next few years should also be introduced. This will require focused effort by the government, donors, and the community more generally to ensure that the fragile achievements of the EPI program are consolidated, that coverage is extended, and that the program is put on a sustainable path.

5.37 Nepal will need to broadly expand coverage of pregnant women with tetanus immunization to achieve the international commitment to eliminate neonatal tetanus by 2000. Currently, only about 10 percent of pregnant women receive the immunization.

5.38 Nepal will have to work hard to meet these challenges and to eliminate polio by 2000. Major constraints to achieving that goal include inadequate maintenance of cold chain equipment and the shortage of critical supplies, such as syringes and needles. Understaffing and absenteeism in the Mid-Western and Far-Western regions make it difficult to implement the current strategy of fixed-day immunization. In regions where health facilities are often understaffed or unstaffed, demand from clients declines, leading to underutilization and wastage of precious vaccines. The problem is particularly acute for BCG and measles vaccines, which come in the form of freeze-dried multidose vials that need to be used within a few hours of reconstitution. Other systemic constraints include inadequate on-the-job training and the lack of effective supervision and monitoring as a result of insufficient travel and per diem allowances.

5.39 Acute Respiratory Infection and Diarrhea Control. The incidence of acute respiratory infection and diarrhea remains very high in Nepal. The problem is exacerbated by the high level of child undernutrition. The ongoing initiative to promote case management of acute respiratory infection and diarrhea by community-level workers in four districts suffers from the generic system constraints of inadequate on-the-job training, ineffective supervision, and inadequate and inappropriate use of information education and communication materials by the health staff. Most nutritional interventions still follow the medical approach of providing supplements rather than encouraging behavior change based on locally available low-cost food choices.

5.40 Contraception. Nepal is one of the few countries in the region that offers wide contraceptive choice. About 29 percent of eligible couples use some form of contraception. The government also encourages private initiative through the Nepal Contraceptive Retail Sales Company, which promotes social marketing of contraceptives and maternal and child health commodities.

5.41 Many institutional gaps reduce the effectiveness of family planning services in Nepal. In 1997 and 1998, for example, poor planning and dependency on donors caused a shortage of Norplant, the contraceptive implant. Lack of trained physicians has also constrained the ability to perform permanent family planning procedures, mostly tubal ligations. Sterilization services are provided mainly at periodic camps, which are unable to meet potential demand for these services. Overall, the unmet demand for contraceptives is nearly 30 percent. Donors as well as experts working in the field continue to express concern about the underfunding of Nepal's family planning programs. Perhaps the most important challenge is to sustain and expand programs at the community level.

5.42 The total fertility rate in Nepal is in the range 4.4 - 4.6. The figure is low given a contraceptive prevalence rate of 31 percent and may imply a fairly high incidence of unreported abortions. The impact of these abortions, many of which are likely to be performed under unsafe conditions, is probably significant and may partly account for Nepal's high maternal mortality figures.

5.43 HIV/AIDS Prevention. The prevalence of sexually transmitted disease among Nepalese women is estimated at 2.7–5.4 percent. Projections indicate that 50,000 Nepalese are likely to be HIV-positive by 2000, making HIV/AIDS a major challenge.

5.44 The problem will be difficult to contain given tourism, heavy labor movement across the open border with India, and the sex trade inside and outside the country. Donors and the government have promoted interventions aimed at safe sex and blood safety. Involvement by multiple agencies and lack of effective coordination mechanisms have limited the effectiveness of these efforts, however. The result has been interventions that fail to effectively address sociocultural issues. HIV/AIDS programs need to be established and sustained at the core of an essential health package in Nepal.

5.45 Tuberculosis Control. More than 25,000 new cases of tuberculosis are reported in Nepal every year. Ninety-five centers in 40 districts provide directly observed therapy short-course (DOTS) as the accepted treatment regime for tuberculosis (National Seminar on T.B.Control, 1999). Despite frequent transfer of trained staff and an inadequate network of good microscopy centers, these centers have achieved cure rates of 95 percent. The major challenge will be to improve program coverage and sustain cure rates when the program is extended to the rest of the country. Providing DOTS in the Mid-Western and Far-Western regions, which have perennial staff shortages, will be a particular challenge that will require a special effort.

5.46 Leprosy Control. About 12,000 new cases of leprosy are reported in Nepal every year. Although the leprosy program benefits from significant NGO participation and receives technical and training support from the WHO, providing service in remote parts of the country continues to be a challenge, especially given weak demand for services because of the stigma associated with the disease.

5.47 Control of Vector-Borne Diseases. The main vector-borne diseases in Nepal are malaria, kala azar, and Japanese encephalitis. These diseases are concentrated in the Terai, where breeding places are abundant. Nepal has had problems sustaining adequate programs in these areas, in part because of the high costs of control (particularly for kala azar) and inadequate organizational capacity.

5.48 Control of malaria, the most endemic of the three diseases, involves collecting blood smears from people with fevers and providing treatment and health education to those who are found to have the disease. Blood smear collection rates fell from 2.1 percent in 1995 to 0.9 percent in 1996. At the same time, the incidence of malaria among people tested for the disease rose from 2.8 percent to 5.8 percent. The decline in testing and the resurgence of the disease reflect the shortage of adequate skilled staff in peripheral health facilities and inadequate laboratory facilities. Other factors contributing to the increase in the incidence of the disease include frequent shortages of drugs and insecticides and increases in imported cases from neighboring countries. Options for treatment should include programs designed to reduce human exposure to the vectors (such as the use of bed nets). It is also crucial that malaria parasite resistance to drugs be monitored carefully and appropriate strategies to control such resistance be adopted as part of the malaria program. Trends in cases of cerebral malaria also need to be monitored, and actions need to be taken to reduce its incidence where feasible.

5.49 Costs of Services. Analysis of costs of services at hospitals, primary health care centers, health posts and sub-health posts reveals that lower-level facilities spend proportionately more on salaries than do higher-level facilities. At the district level, salaries consume more than 80 percent of resources; at primary health care centers and lower-level facilities, as much as 90 percent of resources go to salaries. Two percent of the budget at primary health care centers and 17 percent at regional and zonal facilities goes toward medication.

5.50 Current cost-sharing practices are inadequate and uneven. The severe shortage of funds available for the health facilities suggests that cost-sharing by users needs to be institutionalized. In some well-performing zonal hospitals and primary health care centers, formal cost-sharing represented 50 percent or more of recurring expenditure. In contrast, at poorly performing hospitals, cost-sharing represented less than 10 percent of recurring spending. At health posts, cost-sharing represented more than 9 percent of spending.

5.51 At health posts that regularly dispense medication (that is, health posts with reliable supplies), patients often paid as much as Rs 25 per visit. On average, total expenditure on drugs at these facilities represented about 20 percent of patients' total expenditures. In contrast, spending on drugs represented just 3 percent of spending at facilities that did not have regular supplies. Typically, these facilities limited cost-recovery to the outpatient registration fee of Rs 2.0.

5.52 Health posts and sub-health posts used the revenues generated from cost-recovery in different ways. Better-functioning health facilities spent 85 percent of the income generated from cost-sharing on medication and 15 percent on maintenance. Poorly managed facilities spent all of the income generated on items such as stationery and ceiling fans. These findings suggest that patients are willing to pay when services are available and that cost-sharing improves services and efficiency.

5.53 Out-of-pocket health care expense rises with the level of the facility as well as with the seriousness of the ailment. Inpatient and outpatient expenses at zonal hospitals were twice as high as they were at district hospitals. More than 75 percent of people suffering from chronic ailments spent more than Rs 1,000 a year on health care, with urban patients spending twice as much as their rural counterparts (Nepal Central Bureau of Statistics 1996).

Clients' Views of the Sector

5.54 Availability of staff and free or inexpensive services are the most frequent reasons for using health care facilities, according to a beneficiary assessment undertaken in 1997 by the sector work team. Most rural facilities were within 5 kilometers of clients' homes and were reached on foot. District and zonal hospitals were reached by public transportation. Clients traveled up to 4–6 kilometers to seek treatment for ordinary ailments, 9 kilometers for skin problems, 12 kilometers for obstetric and gynecological problems, and 30 kilometers for orthopedic problems.

5.55 Notwithstanding the high levels of private expenditures on health in Nepal, half to three-quarters of all Nepalese depend on public sector health care delivery (Nepal Central Bureau of Statistics 1996). People living in the Mountain and Hill zones and the Far-West and Mid-West regions, where the public health sector is least developed and the private sector is at best embryonic, are most dependent on the public sector.

5.56 A range of factors play an important role in the selection of a specific health care provider and in health-seeking behaviors more generally. One study by Dhakal R. 1996 in three districts had examined perceptions of illness, health-seeking behavior, provider preferences, access to health care by socioethnic groups, and beneficiary perceptions of quality of care. The study concluded that illness is perceived as an inability to work or the presence of a debilitating condition and that clients are able to identify the major illnesses they experience. The most commonly reported illnesses included infectious diseases, respiratory disorders, and malnutrition.

5.57 The study found that people do not limit their choice to a single provider for an illness episode. It also found that public health care facilities are generally perceived as being far from users' residences and without ties to the community. In most cases, health care workers are hardly known in the community. Partly for this reason, traditional healers are the preferred providers, and patients self-medicate, procuring both herbal and allopathic medications from local shops and pharmacies.

5.58 Reproductive health is perceived as a women's issue, and women themselves do not give adequate priority to it. Most women prefer their mother-in-law to traditional birth assistants, who are considered expensive. Certain taboos prevent communication between men and women about sexual health issues. The relatively better-off Brahmin and Chhetri women tend to attend prenatal check-ups, but women from other ethnic groups, such as the Kumal, do not. Virtually no attention is given to counseling by health providers on sexually transmitted diseases, HIV/AIDS, and family planning services.

5.59 Overall, the level of satisfaction with the quality of health care services is low. Lack of staff, medication, and access to health care facilities and the high cost of treatment are cited as the main problems. Beneficiaries are willing to help identify health care needs, participate in local management of health facilities through committees, and create village health development funds. They are also willing to actively participate in information education and communication activities and to pay for part of the cost of service if they are satisfied with the quality of services. One conclusion is that the quality of health care matters and is a key determinant of demand for service.

5.60 One potentially important line of operations research for the future is to better understand client views of health services and the demand for different types of health services disaggregated by caste, socioeconomic status, income level, and region. This type of social assessment could have very powerful implications for the design of policy and service delivery.

6. FUTURE STRATEGIES AND OPTIONS

6.1 Chapters 1–5 described the challenges facing the health care sector in Nepal. They identified the following problems:

- Nepal's rugged physical terrain, its high rate of illiteracy, and its low per capita income constrain equitable access to health care.

- Resources for health care in Nepal are inadequate. The Health Department, from domestic resources, spends just US$1.80 a year per person on health care. Wastage in the system means that the level of resources that is effectively deployed is much lower. Current total public sector spending on health—including external assistance, assistance from other agencies, and estimates for underreporting—is estimated at US$3.10. Major changes in the capacity of Nepal to raise domestic revenues will be needed if Nepal is to move significantly toward the benchmark of US$12.00 [estimated in the 1993 World Development Report] needed to provide a minimum basic package of preventive and essential clinical services in a developing country.

- Weak institutional capacity means that scarce resources are inefficiently allocated, reducing both the supply of and demand for services. Chronic staff vacancies at outreach facilities, absenteeism, inadequate monitoring and supervision, and lack of adequate supplies mean that patients may travel long distances over rugged terrain only to find a health facility that is unstaffed, out of medicine, and/or lacking medical equipment. As a result, many patients choose not to use health facilities.

- Levels of infant and maternal mortality, infectious diseases, and malnutrition remain high. In the absence of effective interventions, the agenda of controlling communicable diseases, reducing fertility, and improving reproductive and child health will not be completed, and these problems will continue to represent more than 60 percent of Nepal's disease burden throughout the next decade. The emerging threat of HIV/AIDS and the burden of noncommunicable diseases is expected to put additional stress on scarce human, institutional, and financial resources in the sector.

- In the absence of a well-articulated public sector health strategy, NGOs and the private sector have failed to complement public services in a coherent and effective manner.

6.2 Such is the nature of the challenge facing the Nepalese health planner and other stakeholders today. How can this grim picture be changed? How much improvement in allocative and technical efficiency can realistically be expected? If no new domestic resources are made available in the immediate future, what can be done to meet minimum

health care needs? In particular, what kind of priority investments need to be defined and supported?

6.3 Given the prevailing macroeconomic climate in Nepal, large increases in allocations for the health sector are not likely. Policymakers will thus have to work with partners in the community to increase allocative efficiency; improve the planning, monitoring, and implementation capacity of the health system; and enhance technical efficiency. Donor agencies, NGOs, and the private sector need to be encouraged to play an active role in this endeavor.

Using Cost-Effectiveness to Prioritize Health Care Interventions

6.4 Prioritizing interventions based on cost-effectiveness is a useful way of allocating scarce health care resources. It allows various interventions to be compared based on an objective measure, such as cost per DALY gained. The lower the cost of a DALY gained the greater the value for money for the intervention. An example of the power of this methodology is shown in box 6.1, which compares the cost-effectiveness of providing disposable delivery kits and creating an intensive coronary care unit.

6.5 In most developing countries, investments in primary health care have been highly cost effective (World Bank 1993). Regrettably, such allocations have been declining in Nepal in recent years, while investments in tertiary and specialized care have been increasing. The wide disparities in benefits per rupee spent between specialized care and basic primary health care interventions clearly indicate that better health outcomes could be achieved by refocusing health programs and management attention.

Box 6.1. What Kind of Interventions Are Most Cost Effective? Providing Disposable Delivery Kits Versus Creating an Intensive Coronary Care Unit

The value of using cost-effectiveness to prioritize interventions can be seen by comparing two interventions: providing disposable delivery kits and creating an intensive coronary care unit. Given scarce resources, which intervention makes more sense?

The two options can be compared using cost per DALY gained (see Annex 2, table A2-1, and table 2-2 for details). Comparison of the two interventions reveals that the cost of a DALY gained from the treatment of ischemic heart disease would be Rs 8,800, while the cost of a DALY gained from the supply of disposable delivery kits would be only Rs 69. The exercise dramatically illustrates the cost-effectiveness of relatively inexpensive investments in primary health care.

6.6 Focus on Essential Services. Experience across the world suggests that providing a package of essential services is more cost-effective than delivering discrete interventions separately. That experience suggests that such a package should include both public health measures and essential clinical services and should be made easily accessible to all segments of society, particularly the poor. In identifying the components of such a package, policymakers must identify which interventions are potentially the most cost-effective and recognize that a range of constraints limits how quickly a health system can be reorganized to optimize health outcomes.

6.7 Developing an essential package of health care services also allows policymakers to define and demarcate the appropriate roles of the public and private sectors in health care. A range of options exist. In general terms, the private sector needs to be encouraged to get involved in primary health care delivery. Rather than making direct capital investments in primary health care, the government could purchase services from NGOs or the private sector by contracting services on a competitive basis. NGOs and the private sector also need to be encouraged to play a more active role in areas beyond basic services.

6.8 A matrix for the possible financing of different levels of health care is presented in table 6-1. It illustrates how the relationship between public and private sectors might change and highlights the evolving priorities for public sector investment as the health budget increases.

Table 6-1. Desirable Allocation of Investment in Health Care, by Funding Source
(percent of total)

		Funding source			
Level of resources	*Type of health care*	*Public*	*External*	*Private*	*NGO*
Current level	Preventive	75	75	10	75
	Essential clinical	25	25	90	25
	Beyond essential	0	0	0	0
	Total	100	100	100	100
50 percent increase	Preventive	67	67	15	67
	Essential clinical	33	33	80	33
	Beyond essential	0	0	5	0
	Total	100	100	100	100
100 percent increase	Preventive	60	60	20	60
	Essential clinical	40	40	80	40
	Beyond essential	0	0	10	0
	Total	100	100	100	100

Source: Sector team scenario.

6.9 The results of the burden of disease assessment presented in chapter 3 and the illustration of cost-effectiveness noted above were shared with experts in Nepal familiar with the health care system. Following a brainstorming exercise at a workshop attended by more than 50 policymakers, program managers, technical experts, and representatives of donor agencies held in Kathmandu, August 26 and 27, 1996, the group identified an essential health package for Nepal. (The methodology used to create the package is described in Annex 3.)

6.10 Workshop participants identified 15 health intervention priorities (table 6-2). This list reveals their preference for interventions that control communicable diseases, improve maternal and child care, and combat malnutrition. The participant's choices were consistent with the allocative priorities emerging from the burden of disease approach presented earlier. The 15 priority diseases account for 65 percent of the estimated burden of disease in Nepal (table 6-3). If interventions for vector-borne

diseases and hepatitis B are added, the priorities cover more than three-fourths of Nepal's total disease burden.

Table 6-2. Priority Health Care Interventions Identified by Key Stakeholders

Rank	*Intervention*
1	Expanded immunization program
1	Promotion of condom use
2	Safe motherhood, including family planning
3	Tuberculosis control
3	Leprosy control
4	Integrated management of sick child
5	Nutrition supplementation, enrichment, and education
6	Prevention and control of blindness
6	Environmental sanitation
7	School health program
8	Vector-borne disease control program (malaria, kala azar)
9	Nutrition rehabilitation
10	Oral health
11	EPI with hepatitis B vaccination
11	Prevention of deafness
12	Prevention of substance abuse, drugs, tobacco, and alcohol
13	Mental health
14	Accident prevention and rehabilitation
15	Community-based rehabilitation

Source: Workshop on Basic Health Care Package for Second Long-Term Health Plan Development, August 26–27, 1996, Kathmandu.

Table 6-3. Contribution of Top Five Interventions to Burden of Disease

Rank	*Intervention*	*Health problems addressed*	*DALYs lost*	*Percent of total DALYs lost*
1	Expanded immunization program	Diphtheria, pertusis, tetanus childhood tuberculosis, measles, polio	675,822	8.8
1	Promotion of condom use	Sexually transmitted diseases, HIV, hepatitis B, cervical cancer	188,714	2.4
2	Safe motherhood, including family planning	Maternal and perinatal problems	1,296,252	16.9
3	Tuberculosis control	Tuberculosis	571,166	7.4
3	Leprosy control	Leprosy	15,385	0.2
4	Integrated management of sick child	Diarrhea and acute respiratory Infections	1,754,919	22.8
5	Nutrition supplementation, enrichment, and education	Protein energy malnutrition, vitamin A and iodine deficiency and anemia	477,876	6.2
	Total		4,980,134	64.8

Source: Proceedings of Workshop on Basic Health Care Package for Second Long -Term Health Plan Development, August 26–27, 1996, Kathmandu.

6.11 To illustrate the strategic policy implications of this analysis, a package of services for improving maternal and child health (a subset of the program outlined in

table 6-3) was developed and the benefits defined in terms of DALYs gained (table 6-4). This exercise revealed that 1.7 million DALYs (more than 20 percent of the current burden of disease) could be gained at an average cost of Rs 3,107 (US$54) per DALY, or a total annual cost of Rs 5.2 million.

6.12 The overall cost of this essential safe motherhood and child survival package is Rs 236.4 (US$4.73) per capita (table 6-5). Only two-thirds of the cost of this package can be covered by current budgetary resources. Additional resources of Rs 89.6 (US$1.79) per capita are thus desperately needed. Hard choices need to be made regarding the allocation of health budgets and expenditures if health outcomes are to be maximized.

Table 6-4. Cost-Effectiveness of Safe Motherhood and Child Survival Package

Intervention	*Cost (Rs million)*	*DALYs gained*	*Cost per DALY gained* Rs	US$
Essential safe motherhood program				
Upgrade facilities to improve maternal and child health Establish new centers (two with Cesarean section and surgical family planning) Invest in emergency transportation system Introduce risk screening and provide care for at-risk mothers through staffed mobile units equipped with radios Strengthen community-based services: Dai's training, supplies, incentives Increase referrals Train nurse midwives	611.7	239,940	2,549	44
Immunization				
Vaccinate all infants Vaccinate all pregnant women against tetanus	484.7	405,774	1,194	21
Acute respiratory infection case management				
Diagnose pneumonia early based on clinical examination Begin antibiotic treatment Increase referrals	126.6	235,932	537	9
Diarrhea case management				
Diagnose diarrhea early Oral rehydration therapy	99.9	109,742	910	16
Iodine deficiency				
Iodize salt throughout the country	318.4	32,199	9888	170
Vitamin A deficiency				
Administer vitamin A to clients with deficiencies	103.5	19,479	5,312	92
Protein energy malnutrition				
Provide supplementary feeding	3,449.1	62,8825	5,485	95
Total	5,193.8	1,671,891	3,107	54

Notes: Total population estimated at 21.9 million. Exchange rate used based on Nepal Rasta Bank rates for period.

Source: Sector team estimates. Costs of essential safe motherhood package based on assumptions used for similar work in India and other developing countries.

Table 6-5. Cost of Providing Essential Safe Motherhood and Child Survival Package
(millions)

Government and external resources needed	*Government and external resources available (after adjustment for underreporting)*	*Resource gap*
Rs 236.4 US$4.70	Rs 154.9 US$3.10	Rs 81.5 US$1.6

Source: Sector work team estimates. See chapter 4 for discussion of resources currently available.

6.13 Bank experience in other developing countries suggests that it would be difficult to design a better health care program in terms of DALYs gained per rupee spent. The program proposed, perhaps with the additional component of emergency referral care, is likely to be the most cost-effective. The capacity within the Ministry and Department of Health to undertake this kind of analysis should be developed, and further analysis along these lines undertaken.

6.14 Target Geographical Areas. Market forces lead the private sector to concentrate in urban and semi-urban areas. Many NGOs also neglect the underserved areas in the Far-Western and Mid-Western regions. Up to three-fourths of people with acute illness in these regions depend on government-run health services, which are poorly managed and inadequately staffed. The government must develop strategies and policies that ensure that these facilities are staffed on a regular basis.

6.15 Target Marginalized Social Groups. Marginalized segments of society, including scheduled castes, certain disadvantaged ethnic groups, women, and the poor, tend to have inadequate access to health care in Nepal. Strategies that enhance the use of public health services by such groups should be given immediate priority. Creating awareness among women regarding the public services available to them and empowering them to form "spearhead groups" for monitoring the performance of health officials would go a long way toward ensuring accountability by providers.

Recommendations

6.16 Policymakers, representatives of civil society, and development partners face difficult choices in determining how to tackle the problems of Nepal's health care sector. To make affordable and equitable choices, they must consider the burden of disease (the public health criterion for investment in the sector), services that should be publicly financed because benefits accrue to society more generally and/or are designed to meet governments' poverty and equity objectives (public finance criteria), the relative cost-effectiveness of various interventions, the country's institutional and human resources, and the limited financial resources available to the health care sector.

6.17 Several recommendations emerge from this study:

Political Commitment

- Health needs to be seen as a key national development priority. It must be backed by much stronger political commitment than in the past and by substantially scaled-up efforts and commitment to improving the country's health status.

Strategic Disease Focus

- Infectious diseases, maternal and perinatal ailments, and nutritional deficiencies are the major causes of sickness and death in Nepal, account for 50 percent of all deaths, 80 percent of deaths among children under 5 years, and 69 percent of the total burden of disease in Nepal. Addressing these problems and preventing emerging diseases, such as HIV/AIDS, should become the major focus of the public health effort. Dealing with these diseases requires comprehensive national programs of vaccination, treatment, surveillance, health education, and environmental improvement. Such programs meet strong public finance criteria given the externalities and public good nature associated with most of the interventions. A substantial portion of public health care resources should thus be earmarked for cost-effective interventions aimed at reducing the major burdens of diseases, with programs targeted at the poorest segments of the population and underserved areas.

Institutional Capacity Development

- Top priority must be given to enhancing institutional capacity to strategically plan, coordinate, and implement a program of core public health interventions at the appropriate administrative levels. An initial step would be to create a strategic framework for the future development of the health sector that includes key burden of disease problems at its core.

- Existing resources must be used efficiently and effectively. Health care workers and facilities must be better utilized. The problems of absenteeism, staff shortages, and lack of equipment and supplies, particularly in rural and remote areas, must be remedied.

Health Systems Development

- New strategies can be adopted for delivering public and curative health services. Public-private partnerships can be developed, appropriately subsidized by the public purse, and community participation in the management and financing of services can be encouraged. These opportunities should be vigorously pursued.

- Efforts should be made to augment the resource base through private and community financing where it is consistent with equity and poverty reduction objectives and through increased public resources where they can be afforded and used effectively. Empowerment of village and district development committees and expansion of

community drug schemes and other cost and health management sharing mechanisms can encourage new, effective, and sustainable service delivery systems.

Setting Phased Priorities

- Because Nepal lacks the institutional or financial capacity to do everything that needs to be done immediately, health system initiatives and interventions will need to be phased in. Sequenced priority interventions that have the strongest beneficial impact on health status need to be planned and given the management attention and financial resources necessary for their successful implementation. A suggested phasing of important health interventions that need to be developed over the short-, intermediate, and longer-term planning horizons is shown in table 6-6.

6.18 Short-Term Interventions. In the short term (1999–2006), policymakers should focus on completing the unfinished agenda of controlling communicable diseases, improving maternal health and child survival rates, and reducing malnutrition while focusing on access and equity. A major goal should be to educate communities about emerging threats from tobacco, alcohol, and HIV/AIDS.

6.19 Intermediate-Term Interventions. In the intermediate term (2006–11), policymakers should focus on consolidating the gains achieved in the short term and continuing to support them by improving quality and ensuring sustainability. New interventions should focus on improving the health status of the urban poor and preventing and treating lifestyle-related diseases.

6.20 Long-Term Interventions. In the long term (after 2011), policymakers should shift attention away from communicable diseases toward degenerative conditions and diseases of old age.

Table 6-6. Suggested Phasing of Short-, Intermediate-, and Long-Term Interventions

What/how	*Short term (1999–2006)*	*Intermediate term (2006–11)*	*Long term (after 2011)*
What should be done?	• Complete the unfinished agenda of controlling communicable diseases, improving pregnancy outcomes and child survival, and reducing malnutrition, with a focus on access and equity. • Address the emerging threat of HIV/AIDS through community education, advocacy, and surveillance. • Ensure basic quality assurance functions for both the public and private sectors. • Support water, sanitation, and public hygiene interventions outside the direct control of the Ministry of Health.	• Consolidate the gains from the strategic focus on controlling the unfinished agenda, ensuring that efforts are of appropriate quality and are technically and financially sustainable. • Ensure that HIV/AIDS programs meet needs. • Devote more attention to interventions for the urban poor and for community education and advocacy for lifestyle-related diseases, including diseases caused by tobacco use.	• Sustain earlier gains while shifting attention to degenerative conditions and diseases of aged.
How should it be done?	• Build the capacity of the central planning division to ensure effective policy analysis and planning. • Pay particular attention to building intersectoral collaborative capacity. • Ensure high-quality health information data for policy and planning support. • Develop appropriate quality assurance mechanisms for both the public and private sectors. • Limit the role of the public sector to basic preventive care and essential clinical care.	• Firmly institutionalize quality assurance mechanisms for the public and private sector and regulatory systems for the private sector. • Encourage more involvement in health care delivery by the private/ NGO sector based on pilot experience. • Develop strategies to promote private sector investment in the tertiary sector. • Initiate contractual arrangements with the private sector for clinical services for urban residents and for management of degenerative diseases.	• Encourage a greater private sector role in health care delivery. • Institutionalize accreditation systems to ensure quality and contain costs in the private sector. • Refocus the role of the public sector so that it plays essentially a regulatory role, delivering services only in cases of market failure.

What/how	*Short term (1999–2006)*	*Intermediate term (2006–11)*	*Long term (after 2011)*
How should it be done? *Continued*	• Improve the productivity of existing health infrastructure and staff. • Ensure adequate and competent personnel to staff health facilities through a performance-linked incentive system. • Improve the enabling framework and regulatory systems so that the government can work with the NGO and private sectors by piloting their active participation in service delivery. • Expand public sector infrastructure only in underserved areas where private and NGO partners are unwilling or unable to provide services. • Strengthen district health systems to ensure effective supportive supervision and on-the-job training to improve service quality in the public sector. • Decentralize facility management with involvement of local communities (health committees, mothers' groups) to ensure increased accountability of health staff and promote cost sharing. • Encourage the use of traditional systems of medicine where they have proved effective.	• Initiate programs such as the creation of catastrophic insurance to build safety nets for the poor. • Enlarge the resource base by improving public investments and putting in place cost-recovery mechanisms in primary and essential clinical care.	

ANNEXES

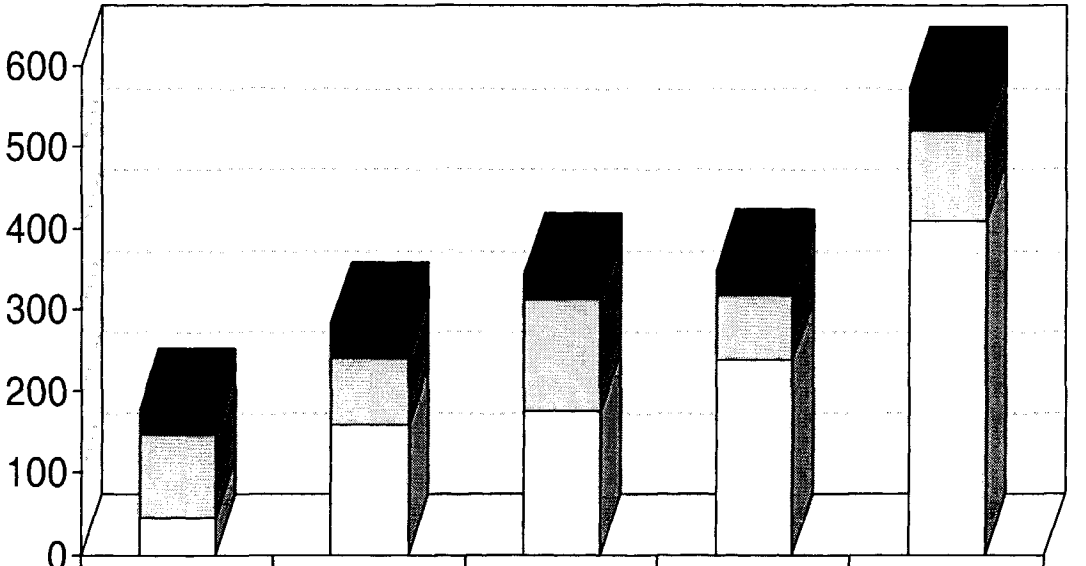
Nepal Burden of Disease Study

SUMMARY OF RESULTS OF SECTOR TEAM ANALYSIS

Annex 1
Figure A1.1

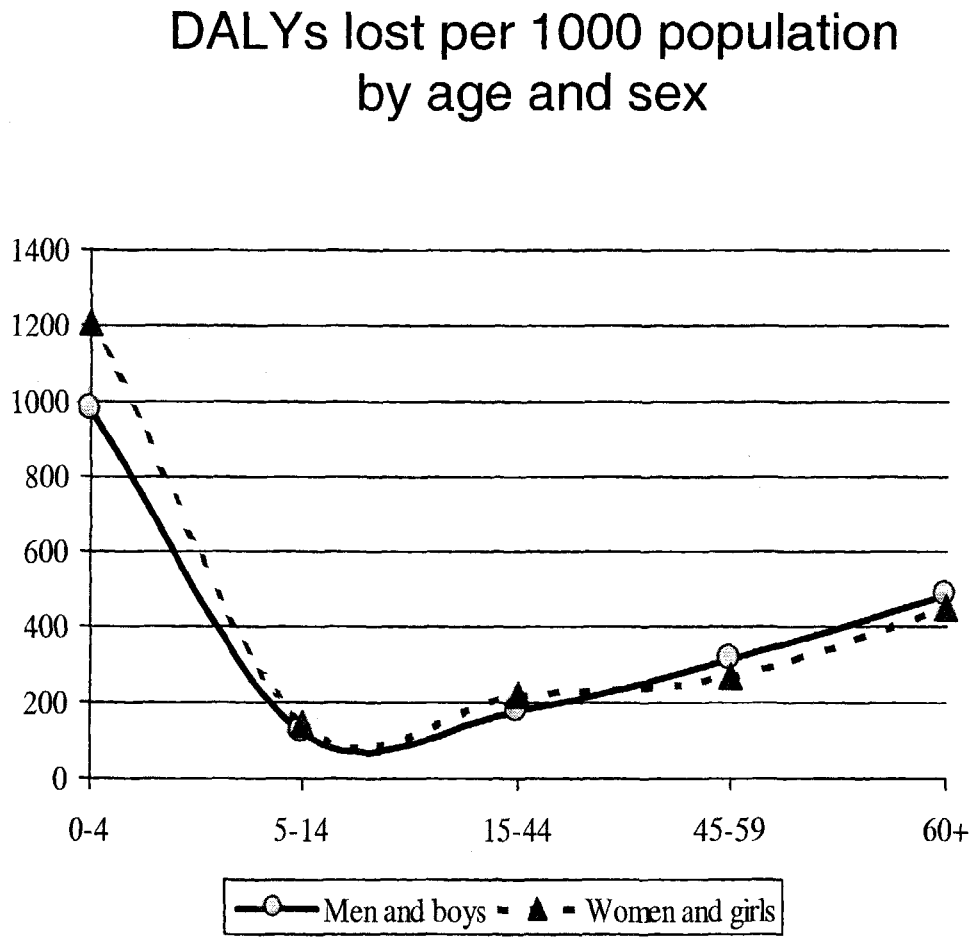
Total DALYs Lost: 7.68 Million
Males : 3.59 Million Females: 4.09 Million

DALYs lost per 1000 population

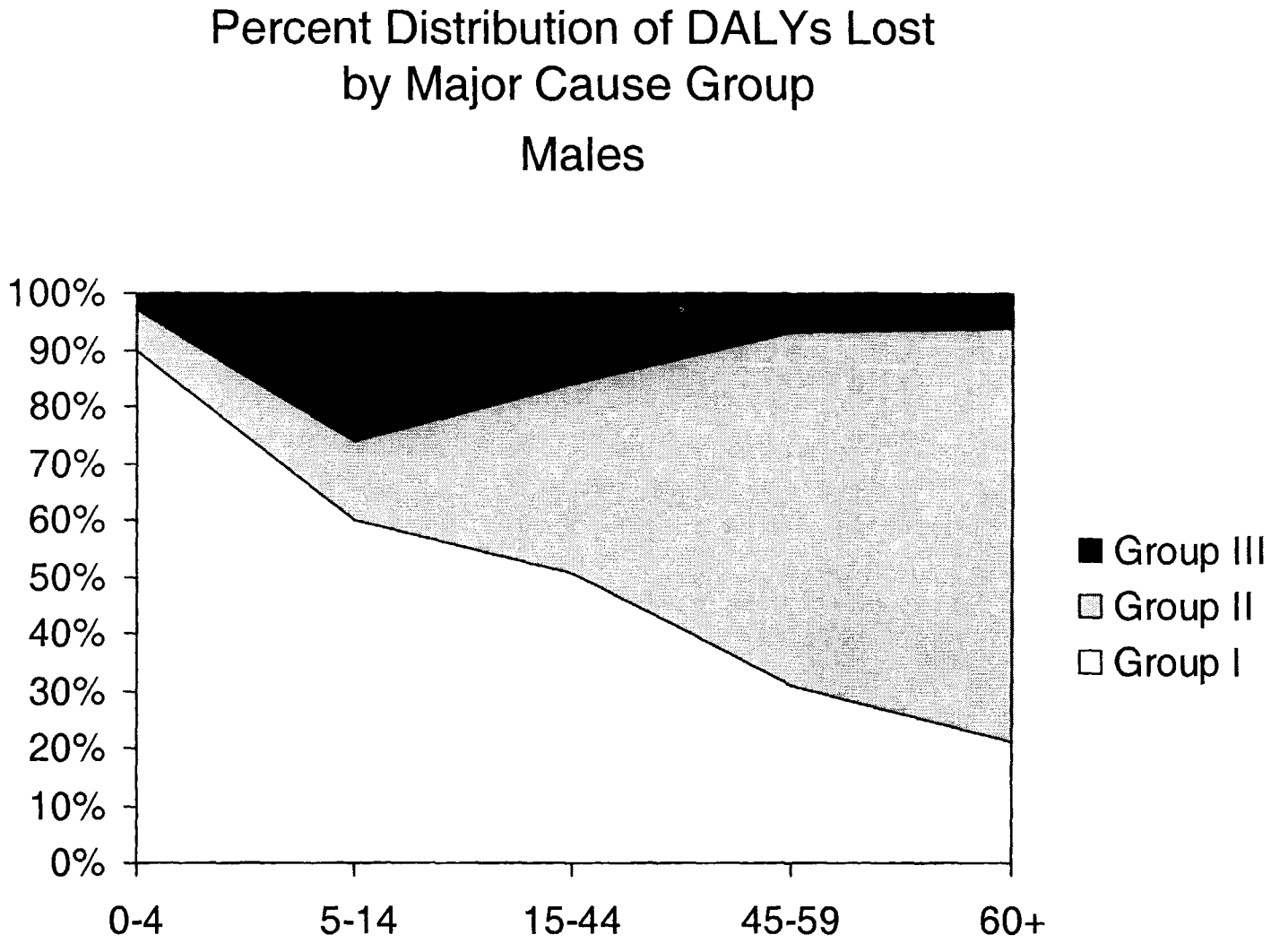


	China	Rural AP	India	Nepal	Sub Sah Africa
Group III	30	44	31	30	54
Group II	103	81	138	80	111
Group I	45	160	175	239	409

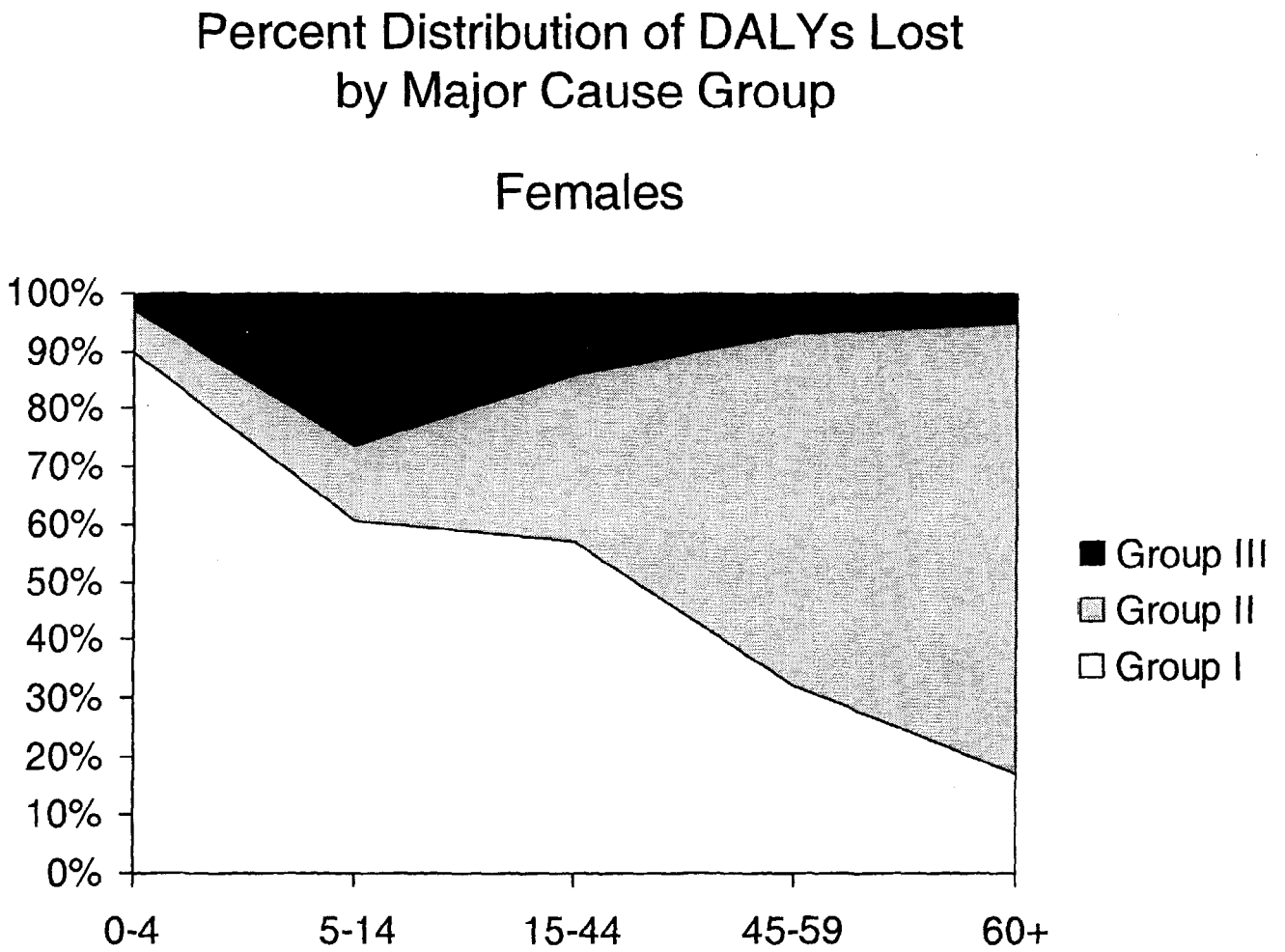
□ Group I □ Group II ■ Group III


DALYs lost per 1000 population by age and sex
1400
1200
1000
800
600
400
200
0
0-4
5-14
15-44
45-59
60+
Men and boys
Women and girls

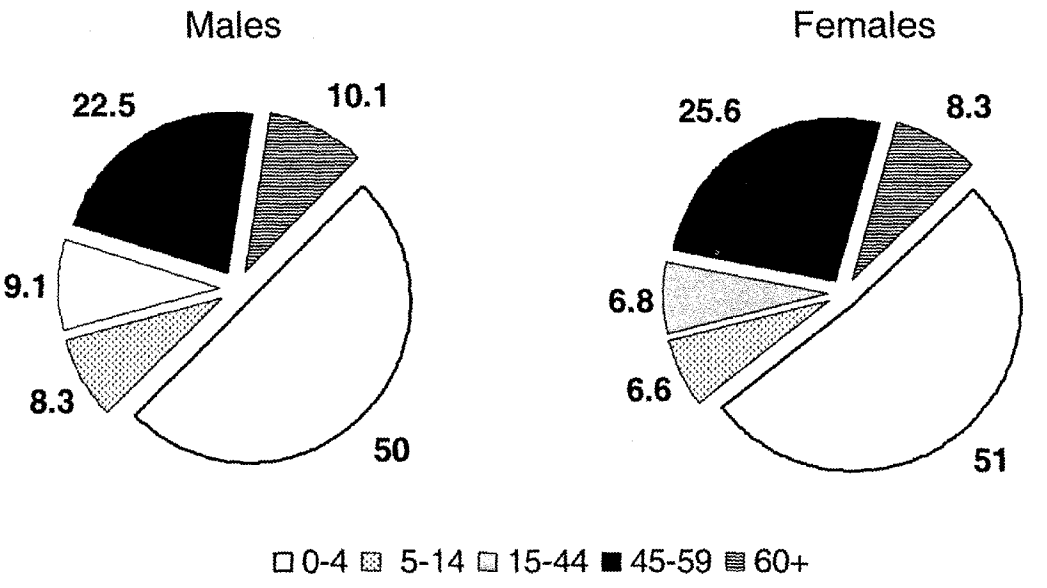
Annex 1
Figure A1.3



Annex 1
Figure A1.4



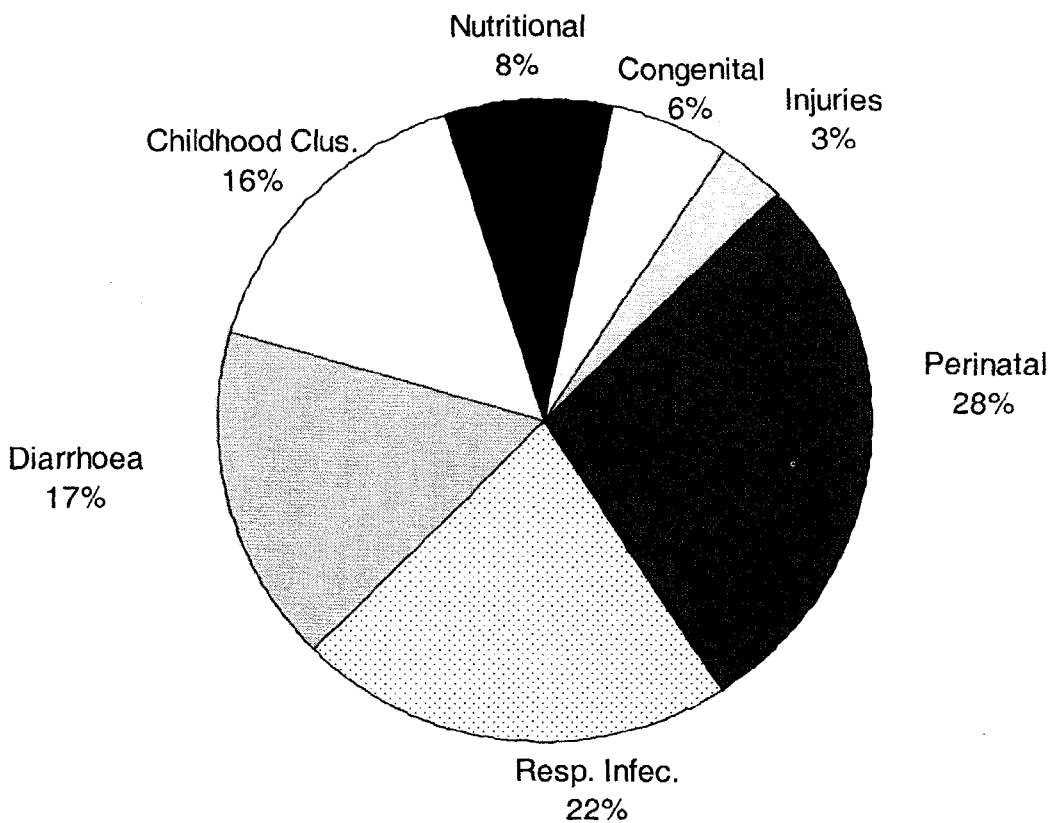
Burden contributed by different age and sex groups



Annex 1
Figure A1.6

Children in 0-4 years contribute half of the total burden

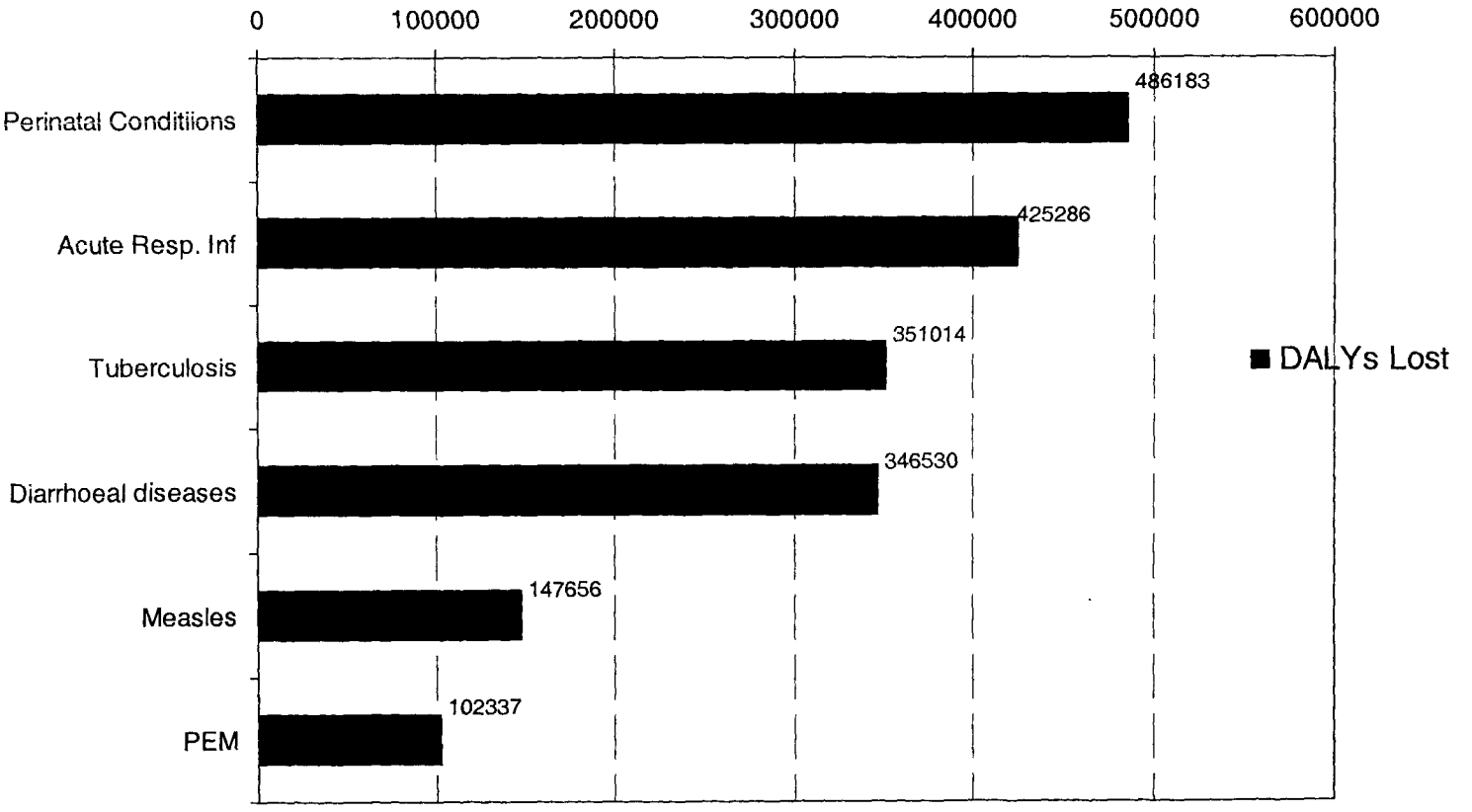
Leading causes of disease burden in 0-4 age group



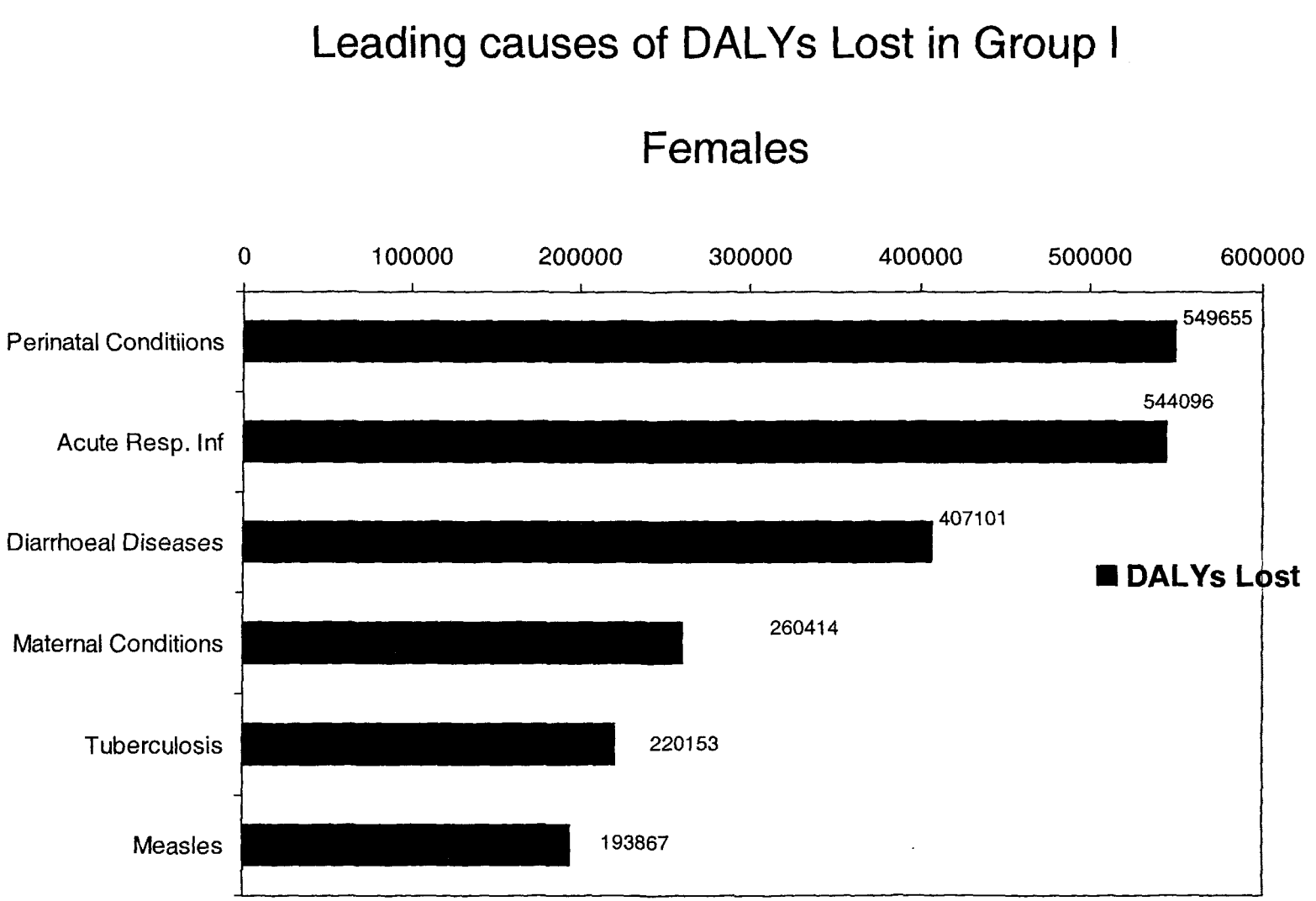
Annex 1
Figure A1.7

Leading causes of DALYs Lost in Group I

Males

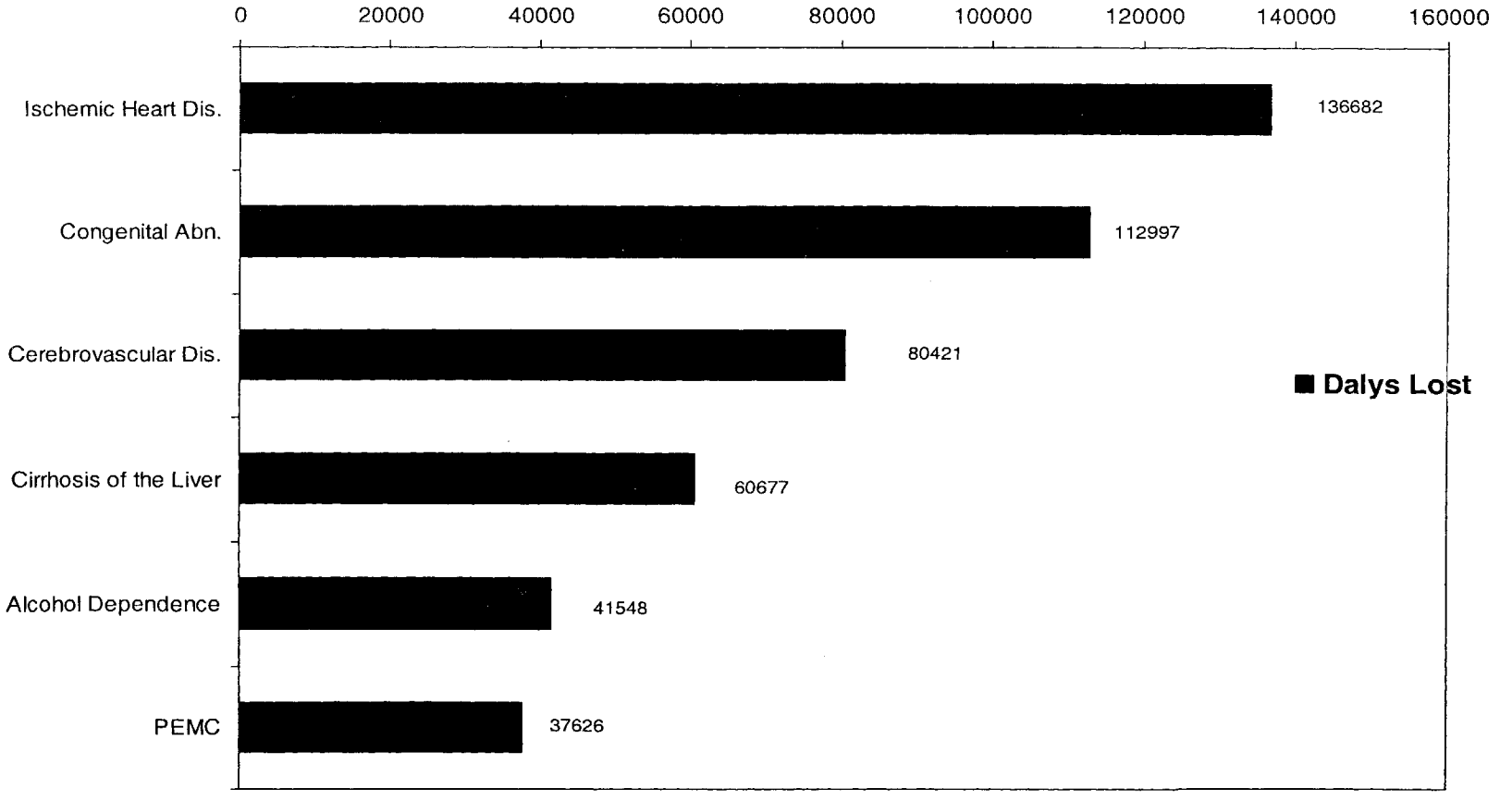


Annex 1
Figure A1.8

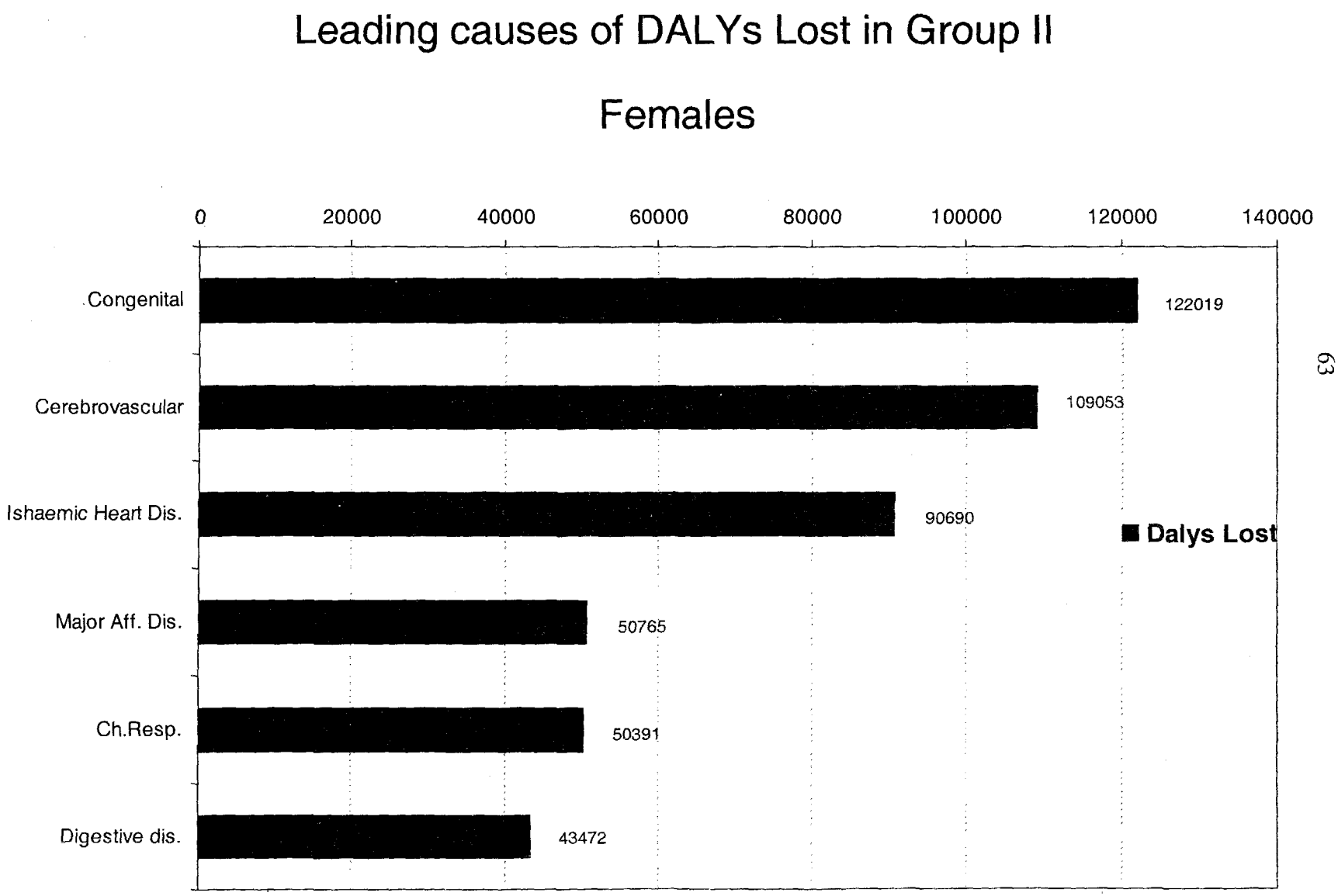


Leading causes of DALYs Lost in Group II

Males

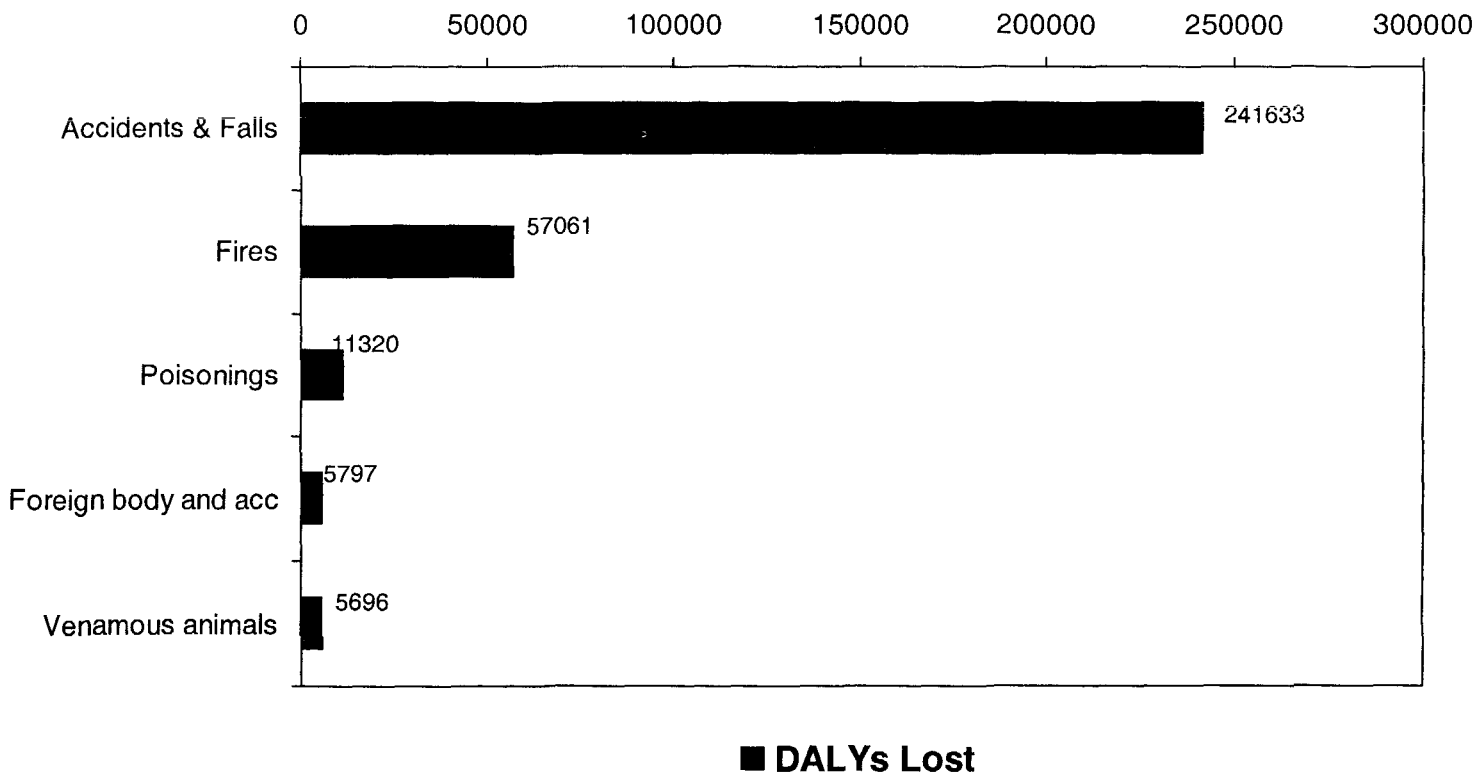


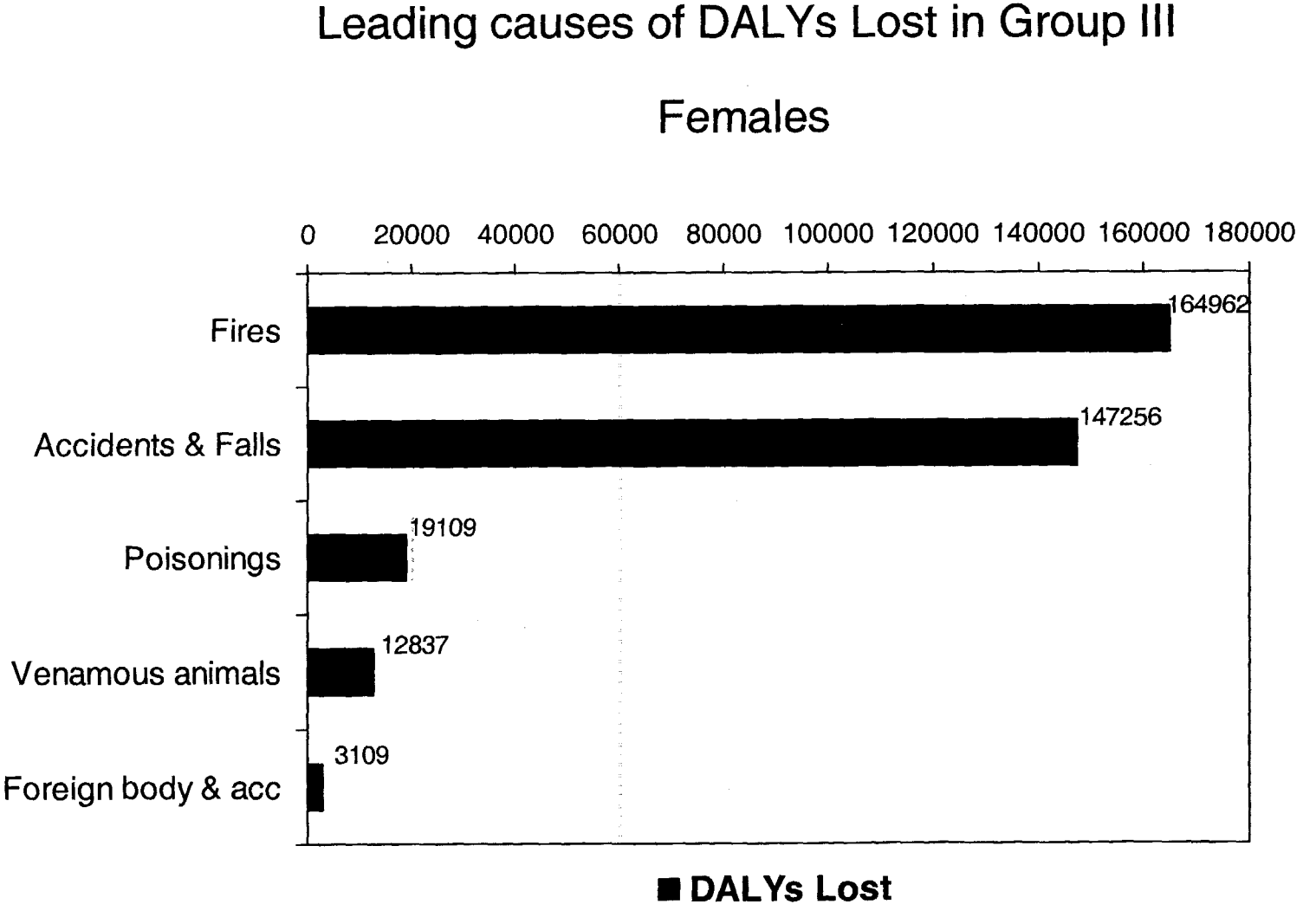
Annex 1
Figure A1.10



Leading causes of DALYs Lost in Group III

Males




Leading causes of DALYs Lost in Group III
Females
0
20000
40000
60000
80000
100000
120000
140000
160000
180000
Fires
164962
Accidents & Falls
147256
Poisonings
19109
Venamous animals
12837
Foreign body & acc
3109
DALYs Lost

Projected trends in burden of disease

	1996	*2011*
Estimated Population (million)	21.13	29.54
DALYs lost (million)	7.68	7.24
%DALYs contributed by 0-4	51.00	40.00
%DALYs contributed by Group I	68.50	61.40
%DALYs contributed by Group II	22.80	28.60
%DALYs contributed by Group III	8.70	10.00

Annex 2

Results of Two Specific Cost Effectiveness Studies and Proposed Health System Financing Scenarios under Different Expenditure Scenarios

Table A2.1. *Assessment of Cost Effectiveness of Disposable Delivery Kit*

Cost analysis	Cost of disposable delivery kit	Rupees	19
	Transport cost	Rupees	6
	Total cost at the place of delivery	Rupees	25
	Estimated child births in 1996	Number	768,993
	Cost of providing DD kits for all deliveries	Rupees, millions	19.23
Estimation of burden	Maternal sepsis	DALY lost	106,163
	Neonatal tetanus	DALYs lost	111,638
	Perinatal conditions	DALYs lost	1,035,838
	Total	DALYs lost	1,253,639
Assumptions used for effectiveness	Maternal sepsis 33% gain	DALYs gained	35,034
	Neonatal tetanus 33% gain	DALYs gained	36,841
	Perinatal conditions 20% gain	DALYs gained	207,168
	Total	DALYs gained	279,043
Cost effectiveness	Cost per DALY gain	Rupees	68.90

Annex 2

Table A2.2. *Assessment of Cost Effectiveness of Intensive Coronary Care Unit at Regional Hospitals*

Cost type		*Description*		*Unit cost*	*Cost per one ICCU, rupees*	*Cost for five units, rupees*	*Annualized costs, millions of rupees*
Program fixed costs	Capital costs	Building		1,000,000	1,000,000	5,000,000	0.25
		Equipment and furniture			2,000,000	10,000,000	2.00
		Ambulance			1,500,000	7,500,000	1.50
	Recurring costs	Salaries	Specialist (1)	12,000	144,000	720,000	0.72
			Medical officers (4)	24,000	288,000	1,440,000	1.44
			Staff nurses (8)	28,800	345,600	1,728,000	1.73
			Supportive staff (8)	19,200	230,400	1,152,000	1.15
		Maintenance per month		25,000	300,000	1,500,000	1.50
Program variable costs	Estimated cases			221,740	6,000	1,330,440,000	1,330.44
Total estimated cost, millions of rupees							1,340.73
Total DALYs lost due to IHD							227,372
DALYs gained							152,339
Cost per DALY gain, rupees							8,801

Assumptions:

1. To ensure reasonable accessibility each region should have at least one ICCU.
2. Annualized costs for capital equipment were estimated on the basis of assumed life span (buildings: 20 years; equipment: 5 years)
3. Program variable cost is assumed to be 1,000 rupees a day per case for a period of six days.
4. The effectiveness of the intervention is assumed to be 67 percent.

Annex 3

Methodology Used for Development of a Basic Health Care Package for Nepal

An interactive process involving key stakeholders like senior policymakers, technical experts, program managers, international donors, and representatives of nongovernmental organizations was used to develop a basic health care package:

- An initial estimate of burden of disease was made for Nepal using the available secondary data and all the diseases were ranked based on their relative contribution (see annex 1).

- A cost-effectiveness analysis of important health interventions was undertaken to short list the interventions.

- After presentation of these results to a group of policymakers, program managers and technical experts, they were asked to brain storm and suggest a list of interventions for leading causes of disease burden.

- Considering the fact that one intervention may control more than one disease, the participants were asked to repeat the exercise and list the diseases that can be controlled by each intervention. For example, a vector borne diseases control program would be effective against Malaria, Leishmaniasis, and Japanese Encephalitis. Similarly, condom use can be effective for preventing the spread of sexually transmitted diseases, HIV/AIDS, Hepatitis B, and cervical cancer.

- A scoring system was developed taking six critical technical and operational components into consideration to prioritize the interventions for inclusion in the basic health care package. Each component was given a specific weight depending on its relative importance by technical experts. In addition, three options with three different scores were also given for each component. By taking both weights and scores into consideration a comprehensive score for each component was arrived at. The scores and relative weights given are presented in the following table.

Component	*Weight*	*Score*		
		1	2	3
Magnitude	0.3	Low	Moderate	High
Effectiveness				
Infrastructure	0.1	Not available	Not adequate	Adequate
Human resources	0.1	Not available	Not adequate	Adequate
Operational efficiency	0.1	<50%	50-75%	>75%
Cost	0.2	High	Moderate	Low
International commitment	0.2	Low	Moderate	High

Annex 3

- The participants were divided into five groups to brain storm and arrive at a consensus score for each component for all the interventions. The highest achievable score for any intervention in this method was 3. Since all five groups did this exercise the maximum achievable score would be 15 for each intervention. The results of this exercise are presented in the table below.

Intervention	*Total score*
Expanded program on immunization	12.7
Condom promotion and distribution	12.7
Safe motherhood including family planning	12.3
Leprosy control program	11.8
Tuberculosis control program	11.8
Integrated management of sick child	11.5
Supplementation, enrichment, and nutrition education	11.2
Prevention and control of blindness	10.3
Environmental sanitation	10.3
School health program	10.1
Vector control program	10.0
Nutrition rehabilitation	9.7
Oral health program	9.5
EPI + Hepatitis B vaccination	9.4
Prevention of deafness	9.4
Substance abuse: drugs, tobacco, and alcohol	9.2
Mental health program	8.9
Accident prevention and rehabilitation	7.7
Community-based rehabilitation	7.3
Occupational health	6.4
Emergency preparedness and management in disasters	6.3

Results

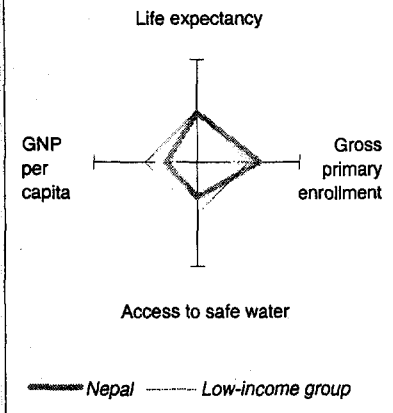
- The results clearly indicate that the participants were conscious of the high burden caused by Group I (pretransition) disorders.
- It is also evident that they gave considerable importance to program effectiveness captured by infrastructure, human resources, and operational efficiency.
- Among the Group II disorders, high priority was given to substance abuse and mental health programs.
- By giving equal priority to condom promotion and distribution, the experts expressed their concern regarding the impending HIV epidemic.

Nepal at a glance

9/29/98

POVERTY and SOCIAL	Nepal	South Asia	Low-income
1997			
Population, mid-year *(millions)*	22.6	1,289	2,048
GNP per capita *(Atlas method, US$)*	210	390	350
GNP *(Atlas method, US$ billions)*	4.7	502	722
Average annual growth, 1991-97			
Population *(%)*	2.7	1.9	2.1
Labor force *(%)*	2.5	2.2	2.3
Most recent estimate (latest year available, 1991-97			
Poverty *(% of population below national poverty line)*	42	..	..
Urban population *(% of total population)*	11	27	28
Life expectancy at birth *(years)*	57	62	59
Infant mortality *(per 1,000 live births)*	82	71	78
Child malnutrition *(% of children under 5)*	49	63	61
Access to safe water *(% of population)*	48	77	71
Illiteracy *(% of population age 15+)*	73	51	47
Gross primary enrollment *(% of school-age population)*	110	99	91
Male	129	109	100
Female	89	89	81

Development diamond*

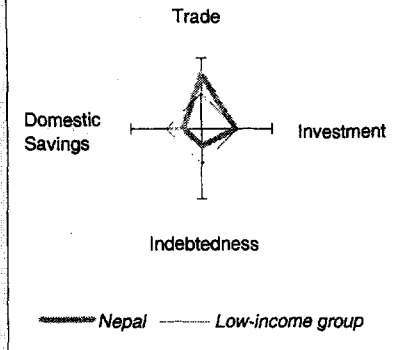


KEY ECONOMIC RATIOS and LONG-TERM TRENDS

	1976	1986	1996	1997
GDP *(US$ billions)*	1.5	2.9	4.5	4.9
Gross domestic investment/GDP	15.1	19.0	22.9	21.4
Exports of goods and services/GDP	10.8	11.7	22.3	26.2
Gross domestic savings/GDP	11.7	10.6	9.4	9.1
Gross national savings/GDP	15.6	12.2	11.2	11.1
Current account balance/GDP	0.3	-6.8	-11.7	-10.3
Interest payments/GDP	0.0	0.4	0.7	0.6
Total debt/GDP	3.4	26.5	53.5	48.6
Total debt service/exports	1.0	7.5	7.7	6.8
Present value of debt/GDP	..	..	25.6	..
Present value of debt/exports	..	..	103.9	..

	1976-86	1987-97	1996	1997	1998-02
(average annual growth)					
GDP	3.4	5.1	5.3	4.0	4.1
GNP per capita	0.7	2.5	2.5	2.0	1.7
Exports of goods and services	3.5	16.4	-2.7	23.4	5.2

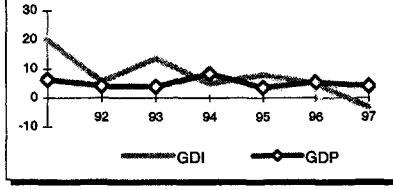
Economic ratios*



STRUCTURE of the ECONOMY

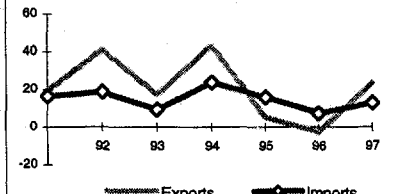
	1976	1986	1996	1997
(% of GDP)				
Agriculture	69.3	51.5	41.5	41.4
Industry	8.9	15.9	22.9	22.2
Manufacturing	4.2	6.2	9.6	9.3
Services	21.9	32.7	35.6	36.4
Private consumption	80.8	80.3	81.4	81.8
General government consumption	7.4	9.1	9.2	9.1
Imports of goods and services	14.2	20.1	35.8	38.5

Growth rates of output and investment (%)



	1976-86	1987-97	1996	1997
(average annual growth)				
Agriculture	0.8	2.5	4.4	4.1
Industry	14.0	8.4	8.3	3.5
Manufacturing	6.9	10.5	9.0	5.7
Services	-5.5	6.5	5.4	3.5
Private consumption	3.4	5.1	9.9	5.5
General government consumption	6.5	5.1	9.4	0.3
Gross domestic investment	6.1	6.8	4.8	-3.3
Imports of goods and services	7.6	12.9	7.3	12.8
Gross national product	3.4	5.2	5.3	4.6

Growth rates of exports and imports (%)



Note: 1997 data are preliminary estimates.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

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