

BHUTAN

COUNTRY HEALTH PROFILE

FEB: 2003

FOREWORD

As a country health profile, this document is not meant to be an exhaustive documentation on any specific area of health in Bhutan. To include all minute data on every health area will firstly make the paper very long. Secondly not all the health areas have detailed data and thus inclusion of details on some areas will make the document unbalanced. And thirdly, if a reader wishes to go into details of any specific subject mentioned in the document there are the reports of those in-depth studies for some of them. Besides, the WHO Country Office in Thimphu is presently constructing a web-site which will include detailed statistics on most of health aspects in Bhutan.

In Chapter I, this document looks into the history, culture and development philosophy of the country as a background to the starting of the modern health care system in Bhutan. Current political, economic, and demographic trends are explored in Chapter II. Chapter III and IV discusses about the health and environment and the resources for health. Chapter V looks at the development of the overall health system in Bhutan, which is followed by a review of achievements in different areas of health in Chapter VI. Chapter VII discusses in brief all the health programmes that are in place in Bhutan as of 2002. The last Chapter deals with the various challenges the country is facing in its health development endeavour and how the country is preparing to meet these challenges.

To give the reader a broad overview of Bhutan's health situation, it is hoped that the document is adequate.

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BACKGROUND

Geography

Bhutan is a 46,500 square kilometer country tucked up in the rugged shoulders of the Eastern Himalayas. With India bordering it in the west, south and east and China (Tibet) in the north, the country is completely landlocked. The terrain starts from the rolling Indian plains to the snow-capped, Himalayan mountains of over 24,000 feet above sea level. Because of the wide range in the heights of places, there is a great variation in the vegetation and climatic conditions in the country. The thick tropical forests of low lands give way to variegated deciduous trees at a higher level. This is followed by mixed coniferous forests that extend to the barren snowy peaks intermingled with glacier valleys. One can expect an equal variation in the fauna that lives in such varied forest environment.

Bhutan enjoyed peace and political stability since the establishment of present line of hereditary monarchs with the enthronement of King Ugyen Wangchuck as the first king of the country in 1907.

Development History and health services

First Five Year Plan	1962-67
Second Five Year Plan	1967-72
Third Five Year Plan	1972-77
Fourth Five Year Plan	1977-82
Fifth Five Year Plan	1982-87
Sixth Five Year Plan	1987-92
Seventh Five Year Plan	1992-97
Eighth Five Year Plan	1997-2002
Ninth Five Year Plan	2002-2007

From a traditional agrarian society, Bhutan embarked upon the road to modernization in the early sixties with the starting of the First Five-Year Plan. Before the introduction of modern medicine and health care system in Bhutan, the country solely relied on its traditional system of healing.

Traditional medicine was first introduced into Bhutan around the 17th century after the arrival of Zhabdrung Ngagwang Namgyal in 1616. Tibetans had always referred to Bhutan as *Lhomenjong* or the land of medicinal herbs because of the enormous variety of medicinal herbs that grew richly at different altitudes of the country.

Those days, the Bhutanese people went to Tibet to learn medicine. Most of the trained doctors would return to Bhutan and set up their own practices in monasteries or *dzongs*. Traditional medicine was greatly supported especially after 1885 when the *Penlops* and *Dzongpoens* patronized the profession. The courts of these high officials privately employed or kept at least one or two physicians.

In 1967 the Government formally recognized the scientific and cultural importance of traditional medicine. Thus it became a part of national health system and today the patients have equal choice for traditional or modern medicine from the same hospital in the districts.

Modern allopathic system of medicine was formally introduced in Bhutan during the first Five-Year Plan with the initiative of King Jigme Dorji Wangchuck, the third king of Bhutan. Bhutan had trained the first national MBBS doctor by 1954.

During the First Five-Year Plan Bhutan had two hospitals and 11 dispensaries. During that time, several paramedics (compounders) were trained in India.

By 1974, the Royal Institute of Health Sciences, then known as the Health School, was established to train Bhutanese paramedical personnel. It marked an important step in the development of self-reliance in human resource for health in Bhutan. For the training of medical personnel, Bhutan continues to rely on medical schools in the neighbouring countries.

At the center the Department of Health Services was carefully organized and strengthened over the years so as to be able to guide Bhutan's health development along the right path. Required health programmes were started for prevention, promotion, and control of diseases that were of public health concern. As a signatory to the Alma Ata Declaration in 1978, Bhutan adopted the primary health care approach in its health care delivery system. Today it has one of the best-organized primary health care systems in the Region. Even as a late starter in the modern health care system, Bhutan managed to cover over 90% of the population with basic health care service, despite the extremely difficult terrain with scattered and inaccessible population.

Development Philosophy and Health Policies

After ascending the throne in 1974 at the young age of 17, The Fourth Monarch, His Majesty King Jigme Singye Wangchuck has skillfully steered the country through unprecedented development. The development partners of Bhutan have often called Bhutan's development documents as "Happiness Documents" as the king has guided the country to strive for "gross national happiness" rather than for mere gross national product. By being a late starter in the modernization process, Bhutan has learned a lot from the experiences of the other countries that are ahead of it.

It became evident for Bhutan quite early that for a holistic development of the society, it was essential that development must be both social and economic and that it was necessary to give equal importance to the spiritual, emotional and cultural needs on the one hand and the material well-being of society on the other. It was also recognized that at the heart of society is the individual whose welfare and well-being must be provided by the society and that the economic growth is essential to support and nurture the spiritual and social needs of the community. This has led the country to clearly stipulate that economic growth, while essential, is not an end itself but is one among many means of achieving holistic development. This has led to the declared objective of viewing development as a continuous process towards a balance between material and non-material needs of individuals and society.

The concept of health in Bhutan must be seen in the context of the overall development strategy that, as stated just above, defines development as the preservation of spiritual and emotional, as well as economic well being. Therefore, the health sector policy objectives reflect the national ones: equity, social justice, sustainability and efficiency, in the context of preservation of national culture. The long term objective of the health services is to “facilitate, through a dynamic professional health care, the attainment of a standard of healthy living by the people of Bhutan to lead a socially, mentally and economically productive life, and within the broader framework of overall national development, enhance the quality of life of the people in the spirit of social justice and equity”.

Till the end of Eighth Plan (June 2002), the focus of health sector has been to increase the accessibility to health care. Basic health care service and essential drugs are provided free of charge to all the patients.

POLITICAL AND SOCIO-ECONOMIC TRENDS

Political Trends

Bhutan has graduated from an unknown country of feuding lords and clansmen into enlightened monarchy in 1907. Systematic modern development began during the reign of the Third King with the starting of the Five-Year development plans. By 1981, His Majesty King Jigme Singye Wangchuck initiated a vigorous programme of administrative and political decentralization. The decentralization policy has enhanced the democratic powers, social responsibilities, transparent processes, and structures of villages and communities to make decisions at the grass-roots level. The Government and its institutions are making every effort to serve the people with integrity, accountability and transparency, thereby bringing about good governance. As a result of the decentralization policy, the country has taken steady steps towards democracy with the establishment of Dzongkhag Yargay Tshogchungs (District Development Committee) in all its 20 Dzongkhags or districts and Gewog Yargay Tshogchungs (Block Development Committee) in the 201 gewogs or blocks.

The greatest change in the devolution of power took place in June 1998 when the King voluntarily handed down full executive powers to a Council of Ministers elected by the National Assembly. On 30 November 2001, the King took another bold and historic step by ordering the drafting of the county’s constitution, as he firmly believed that “it is my duty, as the King, to strengthen the nation so that the people can develop in security and peace, and the national becomes more prosperous and secure than before”. According to him, a democratic system is desirable for Bhutan as the principles and ideals of democracy are inherently good. Therefore the constitution must create a framework structure that will make democracy effective in Bhutan. “It must embody the expectations and aspirations of the people and draw on the wisdom of the existing system, the existing laws, and the lessons learned by other countries around the world.”

The formulation of the Ninth Five-Year Plan showed that the decentralization process has ultimately reached the grass-roots level. The plans came up from the gewog (block) levels to the districts and then finally to concerned sectors at the national level. This is finally discussed and approved by the national assembly where the source of the plan, the people at the gewog level, are adequately represented again.

Economic Trends

The economy of the country steadily grew from 6.5% in 1997/98 to 7.3% by 2001/2002. With the commissioning of several mega-hydroelectric plants during the 9th Five-Year Plan much more development is expected as electric power will not only bring revenues from sale but also help the industries sector in the country itself. However, given the country's delicate situation and small economy, provisions should be kept for emergencies. For instance, Bhutan is located in the Himalayan earthquake zone and heavy earthquakes have not been unheard of in its history. Glacial floods have damaged development structures in the near past. If GDP fell by 2 % in 2000/2001 because of disruptions from heavy monsoons, impact on economy due to damages to big hydroelectric plants that fill the major river systems will be devastating.

Bhutan National Human Development report for year 2000 puts Bhutan in the category of medium human development countries in the south-east Asia region along with Sri Lanka and Maldives with a human development indicator of 0.581 in 1998.

Demographic Trend

The population of the country was estimated to be 698,000 in the year 2000. The population is largely rural with 79 per cent of the population living in village despite a growth in the urban drift in the recent years. It is estimated that 42.1 per cent of the population is under the age of 15 years and 7.2 per cent above 60 years. While there are several language groups and communities, the country is essentially composed of two broad ethnic groups. The Drukpas who are of Mongoloid type ethnically are of Buddhist faith and constitute about 80 per cent of the population. The remaining people are of Nepali origin that are of Indo-Aryan and Hindu faith.

The crude birth rate during 2000 was 34.09 per 1000 population and crude death rate was 8.64 per 1000 population during 2000. Total fertility rate was 4.7 and there is a general decrease in the population growth rate from 3.1 in 1994 to 2.5 in 2002. The sex ratio of males per 100 females during 2001 is 102.

Social Trends

The education programme began during the First Five-Year Plan with the starting of a few Hindi medium schools. Seeing that the English medium would have broader significance for Bhutan, the medium of instruction was quickly changed to English.

As schools were few and far from the homes going to school involved traveling through jungles for hours. Hence initially more boys got chance to go to school as parents felt that it would be too tough for the girls. Because of this reason, the school enrolment in the first two-three plan period showed a bias towards the male student.

However, presently the school enrolment ration between male and female has evened out and it will not be surprising if the females lead the enrolment in the near future.

By 2000, Bhutan has one college with 385 educational institutes around the country, which gave the country gross enrolment rate of 89 per cent with the literacy rate of 54 per cent. This shows a great progress over the literacy rate of 23 per cent in 1980.

Food and Nutrition

Nutrition is an integral component of Bhutanese primary health care. The nutritional status of Bhutanese has improved over the years, more significantly for women and children because of an effective network of health care services, increased awareness in health care and growing economic prosperity. However, the overall nutritional status of the population still requires concerted effort from different sectors and agencies to target the probable causes of malnutrition like food shortages, infections, poor dietary habits and child care practices etc.

The Royal Government is paying special attention to problems related to nutrition. Several nutrition and micronutrient deficiency studies has been conducted over past decade. In 1999 the national anthropometric study was conducted. The results of the study indicate marked improvement in the nutritional status of the under five children as compared to the 1989 national nutrition survey (refer table)

Table: Percentage of under five children who are underweight, stunted and wasted.

Year	1988	1999
Weight for age (under weight)	38	17
Height for age (Stunted)	56	40
Weight for height (wasted)	4.1	2.6

Micronutrient deficiencies like of iodine deficiency disorder is on the verge of elimination. The 1996 IDD study “tracking progress towards sustainable elimination of IDD” revealed Total Goiter Rate (TGR) of 14%, Median Urinary Iodine level of 298 µ/L and iodated salt coverage of 82%.

Following the 1988 survey, the National Assembly adopted a resolution expressing concern for the nutritional well being of all citizens. Special emphasis was given to the importance of nutrition in development.

A more recent survey indicated the continuing problem of food insecurity in Bhutan. This survey, which did not cover the south, much of the east, or remote districts of the north, revealed that 17% of respondents experienced some periods of food shortage. Nearly one-third of these were road workers.

Lifestyle

Basically an agrarian society, people still depend largely on back-breaking agricultural activities in the districts. In the main towns, people work in Government and private offices and there is a general lack of physical exercise in most of them.

Archery is still the most popular sport although the traditional bamboo bow and arrows are getting replaced by expensive modern spring bows and aluminum arrows manufactured abroad. Football is played in schools and towns from time to time in particular seasons.

Rice is the main staple diet followed by maize. Wheat, barley, buckwheat are other food items along with vegetables and meat. Traditionally Bhutanese diet contains more fat from items like pork and butter and most curry items are seasoned with heavy doses of chili. The fat intake is also getting reduced - especially in towns as the people find it difficult to digest fats with the sedentary lifestyle they lead.

Tobacco consumption, both chewing and smoking, once very rampant is now on the decline in the face of the strong advocacy and intervention activities that the health sector is carrying out. Chewing *doma*, beetle nut with a leaf and some lime, is a habit built into the tradition. Most of the formal get-togethers are punctuated with this item. But today this habit is more common with the elderly people although the younger generation too does resort to this habit.

Another hazardous habit of the Bhutanese is drinking liquor. With strong advocacy from the Government, the situation is much improved.

HEALTH AND ENVIRONMENT

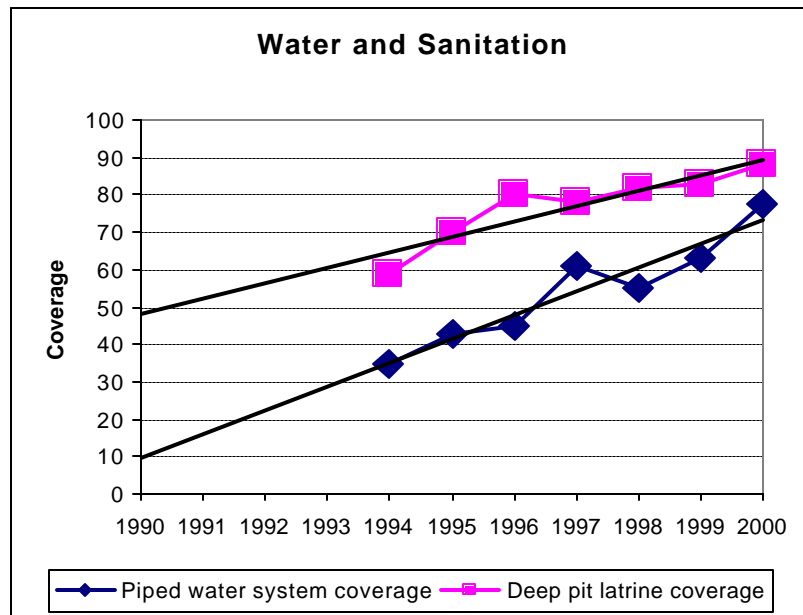
General protection of environment

Bhutan is one of the rarest countries where it has been found that the forest cover is increasing over the years. Through special conservation programmes, forest and wild life are protected. There are special pockets in the country that are demarcated as conservation sanctuaries for wild life. Re-plantation is carried out on the slopes that are denuded from landslides and forest fires. Some special areas are marked and protected for growing medicinal herbs for the country's traditional system of medicine.

With growth of urban areas and industries, the problem of urban and industrial waste is coming up. Programmes for such waste disposal have been initiated in the major settlements and industrial areas. Initiatives have been taken to develop guidelines for prevention of occupational hazards in work areas.

Water supply and sanitation

Both rural and urban water supply and sanitation has been treated as one of the country's central development themes by all the Five-Year Plan documents since the 7th Plan. Today the coverage has reached up to 80% as shown in the following figure.



Source: Annual Health Bulletin, 1994 – 1999, and National Health Survey 2000, both Ministry of Health and Education, Royal Government of Bhutan.

During the same decade, as a result of the 1992 Royal Decree, rural household sanitation coverage in terms of latrines has accelerated considerably. The Decree mandated that every household should maintain a latrine.

HEALTH RESOURCES

Physical infrastructure

Health service is provided through a four-tiered network consisting of a National Referral Hospital, Regional Referral Hospitals, District Hospitals and Basic Health Units. There are 30 hospitals including one hospital for traditional medicine and 160 basic health units. These facilities are supported by 447 out-reach clinics at the community level. Traditional medicines services are available in all the districts.



Table: Health Infrastructure

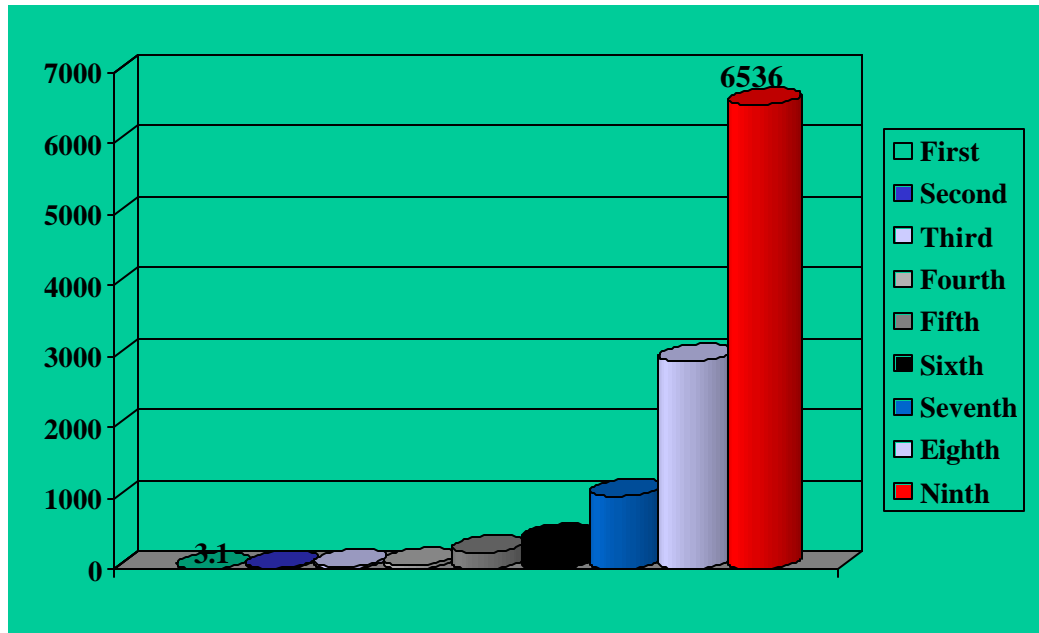
Health infrastructure expansion took place in the 1970s reaching the peak of expansion activities in the 1980s. In line with the Alma Ata Declaration, the country committed itself to establishing a relevant and cost-effective health care delivery system based on the primary health care approach. Despite the high cost of health care service delivery in a country with a population scattered thinly over the mountainous terrain, Bhutan has managed to establish a fairly uniform spread of Basic Health Units, District Hospitals, and Regional Referral Hospitals.

<i>Indicators</i>	<i>1974</i>	<i>2002</i>
Hospitals	14	29
Basic Health Units	46	163
Outreach clinics	0	445

Financial resources for Health

Although only 2.9% of total outlay for the First Plan (1962-1967) was given for health, the Government recognized the importance of the social sectors. The current Government allocation for Health is around 10% of the total outlay, which comes to 4% of the GDP. This is perhaps the highest allocation for health in the Region.

Figure: Plan Outlay in Million Ngultrums.



In the past Plans, donors played a significant role in supporting the health sector. However, to reduce the over dependence on donors the Government is now taking steps to bear the major portion of the cost. On an average the Government now bears about 49% of the total outlay.

The main development partners in the health sector are Governments of India, DANIDA, UNICEF, UNFPA, WHO.

Human resources for Health

Along with the expansion of health infrastructure, human resources for the Health Sector have also been built steadily over the years. The country still faces shortage of medical personnel with only 109 doctors. Developing medical doctors is still very difficult as Bhutan has to depend on the neighboring countries as Bhutan does not have any institute. Candidates are sent to Bangladesh, India, Myanmar, and Sri Lanka for their MBBS

Table: HRD indicators

Indicators	1974	2002
Doctors	34	114
Nurses	35	466
Other health workers	0	619
Drungtsos	3	32
Village Health Workers	0	1500

course.

Other categories of middle and lower level human resource is developed by the country itself at the Royal Institute of Health Sciences. This institute that got the WHO's 50th Anniversary Award for Primary Health Care, is the main contributor to the primary health care development in Bhutan in terms of human resource. The institute trains health assistants (HA), basic health workers (BHW), auxiliary nurse-midwife (ANM), general nurse midwife (GNM), assistant nurse (AN), and technicians of various disciplines (laboratory, pharmacy, dental, x-ray, ophthalmology, physiotherapy, operation theatre). With the support of WHO, this institute is now affiliated to La Trobe University in Australia to train nurses at post-basic level.

On the other side, the National Institute of Traditional Medicines trains both full-fledged traditional physicians, Drungtshos and the Menpas to support them.

Essential Drugs and other supplies

Bhutan has no pharmaceutical industries and relies on imports for its entire requirement. Traditional medicine is manufactured at the National Institute of Traditional Medicine Services (NIMS) in Thimphu. Although the country succeeds in making the programme self-sufficient in terms of budget after the operationalization of the Health Trust Fund, the country will still be dependent on the outside world for the actual drugs, vaccines and other supplies like laboratory reagents and medical equipment.

Presently the country has one of the best programmes in the South-East Asia Region. With an effective medical supplies management and the systematic drug indentation system, an average of 80% of all essential drugs allocated to hospital and Basic Health Units were found to be available on one particular day in 1998.

As Bhutan is dependent on the outside world for the medicines, vaccines and reagents, quality control in a way is out of hands of the Bhutanese. In this regard, Bhutan relies on WHO collaborating laboratories in the Region for testing the quality of imported drugs and vaccines.

DEVELOPMENT OF THE HEALTH SYSTEM

Health policies and strategies

The Royal Government gives great importance to the social sectors- especially education and health. The Government pursues a policy of providing essential health care services free of charge.

In order to sustain achievements in Primary Health Care and reduce the dependency on donors, the Royal Government has initiated the creation of a Health Trust Fund. The total capital for the Health Trust Fund has been initially set at US \$ 24 million. As per the Royal Charter of the

Health Trust Fund, the Royal Government will match, on a one-to-one basis, any donor contribution to the Fund. The fund will be maintained in US dollars and invested in reliable financial institutions abroad. It will be governed by the Management Board consisting of high-level members representatives from the relevant Ministries and organizations.

This initiative is expected to support the Royal Government's policy of providing free essential health care.

For the purpose of maintaining quality of health care service and protecting the qualified human resource for health, private practice has never been introduced.

As the traditional medicine practiced in Bhutan, *Sowa Rigpa*, is a systematic field of knowledge, traditional medical care is provided side by side with modern allopathic health care. These two systems are now more or less integrated.

Within the overall long-term objective of the Health Ministry, "attaining a healthy living standard by the people living within the broader framework of the overall development of the country", there has been a shift from expansion of services which was emphasized in the earlier plans to the quality of services which entails setting up of standards at various levels of health care delivery system. Strategies have been developed to reach the un-reached through decentralization of planning and management systems; to strengthen management information system, to develop research and their use which leads logically to one of the Ministry's most important objectives: *intensifying human resource development for health and establishing a system of continuing education*. To this end, the Ministry has developed the Master Plan for Human Resource as a guide for developing human resource for health.

Intensification of prevention and control of prevailing health problems and dealing with the emerging and re-emerging ones require extra resources and effort and the Ministry has prepared itself in dealing with this problem. Other objectives that have flowed from the past plans are intensification of reproductive health services and sustaining population planning activities; promoting community-based rehabilitation, mental health, and finding innovative means to enhance the mental well-being of the people; and maintaining balance between primary, secondary, and tertiary health care so that the higher levels of service can back up the needs created or problems identified by the lower ones.

With the intentions on health coverage, the Royal Government has not been able to give a legal framework for medical services both to protect the medical practitioners and the patients. Now the Bhutan Medical and Health Council Act has been passed by the National Assembly in 2002. Further, the Medicines Act is being drawn up to regulate the sell of the medicines, drugs and other substances in the country.

Managerial process

The Ministry of Health and Education is headed by a Minister. A Secretary looks after both the Health and Education affairs at policy level. The Health Department is headed by a Director. Please see the organogram in Annexure.

The health services in the districts are directly under the administration of the Dzongdag, district magistrate. The Health Department provides technical support to the districts. District Medical Officers look after the hospitals and District Supervisory Officers look after the primary health care concerns in the districts. The Basic Health Units at the community level are directly under the administration of the District Health Supervisory Officers.

However, in line with good governance policy, the Royal Government has now decided to restructure the Ministry of Health and Education into two separate Ministries.

Organization of the health system

The basis for Bhutan's health care delivery system is the primary health care system starting with the 445 outreach clinics and 163 basic health units at the community levels. The districts have the district hospitals organized under the three Regional Referral Hospitals and one of these Regional Referral Hospitals also serve as the National Referral Hospital.

Patients at the basic health unit level are referred to their respective district hospitals for secondary or tertiary health care. The district hospitals likewise refer to their respective Regional Referral Hospitals and that in turn rely on the National Referral Hospital. As it is not yet possible to have very specialized health care in the country, a good number of cases requiring such health care are referred outside the country.

The health service system at the district and lower levels depend on the district authorities for their administrative support and on the Health Department at the centre for technical support. The basic health units submit their case reports directly to the District Supervisory Officers who compiles them and submit to the Health Department at the national level. However, the diseases under strict surveillance like HIV, Poliomyelitis, etc. that come under the notifiable category are reported directly to the national level immediately.

Community Participation

In order to bridge the gap between the organized health service and the community, the Government trains village health workers who are chosen by the communities themselves. As of 2000, there are 1,327 village health workers who advocate health to the people and who help in bringing the health problem of the people in the communities to the health workers. They are also taught and allowed to dispense a few basic allopathic medicines.

The communities also look after the development schemes like those for drinking water supplies in their own areas. The programme assists the communities by providing them the required training.

Then there are the traditional faith healers, astrologers and religious leaders in the communities. The Ministry also takes the support of these respected people in imparting specific health messages -ranging from the need to take iodized salt to family planning - to the people in the communities along with their routine work.

Health information system

Realizing the importance of information in management, Health Information Unit was established in 1983. Since then the Annual Health Bulletin was compiled on a yearly basis and published. WHO has put in substantial support to develop the Health Information System in the 1990s. During 1999-2000, the information system was reviewed and the Health Information Management System was instituted with support from DANIDA. Presently HMIS is being computerized and experimented.

The basic health facilities have been given standardized reporting forms to report the morbidity, mortality and other health data collected at that level. This is compiled and consolidated every month and submitted to the District Health Supervisory Officers who, in turn, compiles and submits to the national level every quarter. At the national level the Health Information Unit compiles and makes it available to all concerned.

However, the human resource for the Health Information Unit has to be further improved both in terms of expertise and number to make the Health Information System dynamic and helpful for evidence-based planning for the future.

Inter-sectoral coordination

Intersectoral coordination at different levels of the Government is achieved through different ways. At the national level, the Planning Commission coordinates the plans of various development sectors and the Department of Aid and Debt Management of the Ministry of Finance coordinates resource allocation. At the district level, when the plans are implemented, the Dzongdag is the overall head. All the sector representatives at the district level function under the Dzongdag. Thus duplication of efforts is avoided and the actions are coordinated.

Even at the Department and programme level, there are a lot of coordination mechanisms through Policy and Planning Division of the Ministries. Additionally, individual programmes have their own coordination mechanism with other concerned sectors. Malaria programme, for instance, has direct coordination mechanism with the agriculture and municipal departments. Similarly environmental health programme liaises with the National Environment Commission, Municipal Corporations of each district and even the police force. The nutrition coordinates its

efforts with the Agriculture, Trade, and other relevant sectors. Further, there are the multi-sectoral task forces that also address the issues that cut across many sectors.

Emergency preparedness

Of the numerous emergency situations, the one that concerns the country most is the traffic accidents. Flash floods and landslides also contribute to the problem. The country being in an earthquake zone, severe earthquake is also read about in its history but it is less frequent. Glacial flood also cause damage to the life and property. A rough study in the recent years revealed numerous glacial lakes that are potentially dangerous to the country. Further, of late the presence of the militants from across the southern border poses an enormous threat to the national peace and security.

In order to deal with all these eventualities, the Ministry of Health and Education has established a rapid response team consisting of several relevant sectors. An emergency medical team further backs this establishment.

Health research

Health research is comparatively new for Bhutan although Bhutan has been a participant to WHO's research consultations in Region. To be able to carry out research for the health sector so that there will be evidence-based health interventions; the country has been building its research unit. The Research Unit was formally established in 1995. The key staffs are still being trained abroad. The unit has played crucial roles in conducting vital studies for health in the recent years. It has contributed in the conducting of the National Health Survey in 2000 and in carrying out the survey on mental health in 2002.

Coming to the area of other kinds of research, the Pharmaceutical and Research Unit at the National Institute of Traditional Medicines conduct research related to indigenous medicines. Further it is also documenting the medicinal plants and herbs that are found in Bhutan.

TRENDS IN HEALTH STATUS

Reviews conducted in 1984, 1994 and 2000 revealed good progress in the health sector since the start of the planned development four decades ago. Maternal mortality ratio has decreased from 7.7 per 100,000 live births in 1984 to 2.55 in 2000. Infant mortality rate has also dropped from 102.9 per 1,000 live births to 60.5 during the same period. Bhutanese life expectancy has increased from years in 48 years in 1984 to 66 year in 1994. Even the population growth rate of 3.1%, which was a concern for the government, has also dropped to 2.5% by 2000 through intensified health education and increased access to contraceptives. In a rugged country like Bhutan, access to trained birth attendant was as low as 10.9 % in 1994. This has increased to 23.6% in 2000.

Table 1: health indicators

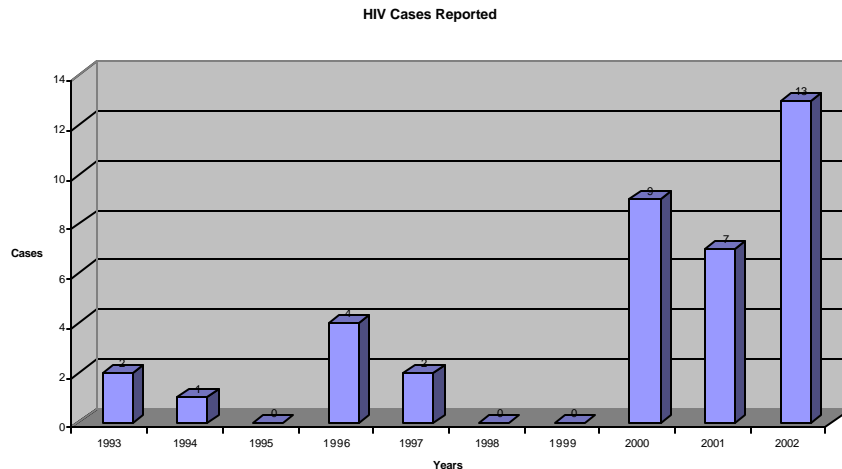
Indicator	1984	1994	2000
General fertility rate	169.6	172.7	142.7
Total fertility rate	NA	5.6	4.7
Infant Mortality Rate per 1000 live-births	102.8	70.7	60.5
Under 5 Mortality Rate per 1000 live-births	162.4	96.9	84.0
Maternal Mortality Rate per 1000 live-births	7.7	3.8	2.55
Crude Birth Rate per 1000 population	39.1	39.9	34.09
Crude Death Rate per 1000 population	13.4	9.0	8.64
Contraceptive Prevalence rate (percent)	NA	18.8	30.7
Access to Safe Drinking water (percent)	NA	NA	77.8
Sanitation (latrine) coverage (percent)	NA	NA	88.9
Population Growth Rate (percent)	2.6	3.1	2.5
Trained birth attendance (percent)	NA	10.9	23.66

Source: National Health Survey 2000

The cure rate for tuberculosis is 90 per cent and the case fatality rate show steady decline from 48.8 per 1000 cases in 1995 to 45.6 in 2001. DOTS strategy has been used since 1997 and standard reporting and recording system for patients are in place although there are still cases of double recording or patients lost to follow up. However, the increasing number of HIV cases is now challenging this progress.

Bhutan has been smart enough for being able to put a programme on STD/AIDS in place long before the entry of HIV/AIDS into the country. This preparedness has been put into test when the HIV problem entered the country in 1993. As the country shares a porous border with some of the highly infected areas of India in the south and is connected with Myanmar, Thailand and Nepal by air, it was not going to be spared from this problem. Although the knowledge about the dangers of HIV/AIDS has been instilled to more than 80% of the population, the toleration of promiscuity and re-marriages in the society makes the problem of STDs, especially HIV/AIDS very grave. By the year 2002, there were 38 HIV positive cases detected in the

country of which 22 were males and 16 were females. Out of this 7 have died and 31 are still living. Taking into account only detected cases, there has been almost 100 per cent increase in the cases between 2001 and 2002 as can be seen in the following graph.



For malaria, capacity for control has certainly been increased with the strengthening of the programme and establishment of an entomological unit. Efforts are bearing fruit as indicated by the Plasmodium falciparum and Plasmodium vivax cases as these are two prevalent types of malaria in the country. Plasmodium vivax was seen as the most predominant infection all through the decade from 1990. However Plasmodium falciparum cases exhibited a sudden increase to 12,966 in 1991 as compared to Plasmodium vivax cases of 9,160 during the same year.

On the whole the malaria situation started to get worse from 1990 onwards with Annual Parasite Infection increasing from 53.6 reaching a peak of 111.1 in 1994. After that the annual infection showed marked improvement between 1995 and 2000 with a declining trend from 66.2 to 16.9 with a some increase 1999.

Despite the progress made so far, as most of the malarious districts share common border with malarious districts in India, more work needs to be done to coordinate control activities.

Leprosy is currently under control with a prevalence rate of 0.61 per 10,000 population with a case detection rate was found to be 0.29/10,000. As in the past, no reconstructive surgery was offered due to negligible number of cases.

Effort continues to maintain immunization coverage above 80% for vaccine preventable diseases. The sub-National Immunization Days continue twice a year to reach the un-reach so that Bhutan may achieve eradication of poliomyelitis by 2005. Though there has not been a case of poliomyelitis reported since 1986, focused surveillance continues for acute flaccid paralysis (AFP).

While some progress has been made in controlling communicable diseases, there is an ever-growing problem of non-communicable diseases. With the changing of life-style from the agrarian society to more complex modern competitive world, rheumatic heart diseases, diabetes, cancer, especially cervical cancer are on the increase. Even within a peaceful country like Bhutan, preliminary assessments reveal that the situation of mental health is not much different from any other country. Presently most of cancer cases are referred outside the country that drains a large portion of the hospital outlay. The Government is now initiating actions to have programmes in place to deal with this aspect of health problem.

Acute respiratory infections in winter and diarrhoeal diseases in summer still top the list of infant morbidity in the basic health units. This is usually attributed to poor nutrition and living environment of the children in the rural communities, dry atmosphere in the winter, poor quality of drinking water and sanitation in summer. The programmes on Integrated Management of Childhood Illnesses, Water Supply and Sanitation, Nutrition have been working to improve the situation but more work is required to coordinate their efforts to impact positively on child health.

HEALTH PROGRAMMES

Prevention and control communicable diseases

Extended program for Immunization (EPI):

EPI was launched in 1979 with six antigens. In 1988 the National Assembly passed a resolution, which directed the Health Sector to immunize all children. With continued effort Universal Child Immunization was achieved in 1991. Since then the immunization coverage was maintained above 80%.

Multi-antigen National Immunization Days (NIDS) carried out in 1995 (TT, Measles and polio). Since 1996 Sub-national Immunization Days (SNIDS) are carried out. Hepatitis B vaccine was introduced in 1996. Double antigen (Measles & Polio) SNID was carried out in 2000. In the subsequent SNIDS no Measles vaccine was given other than for routine immunization.

Table: Bhutan National EPI Coverage Evaluation Survey (CES), 2002)

S. No	Antigens	Reported coverage (routine)	Evaluated coverage (EPI CES 2000)	
		(Year: 2000)	By card only	By history +card
1	BCG	93%	94.9%	99.55%
2	DPT-3	94%	93.5%	98.6%
3	OPV-3	94%	94.9%	98.6%
4	Hep.B-3	92%	91.6%	96.3%
5	Measles	81%	91%	96.3%
6	TT2	66%	46.1%	86.3%

The evaluation survey revealed that 89.7% of the children are fully vaccinated before their first birthday and 64.6% of the fully vaccinated children received valid dose.

As it is becoming too much burden for children and mothers for receiving all these vaccines, Bhutan has been considering the introduction of tetra and penta-valent vaccines and this has been proposed when the country submitted a proposal for GAVI funds.

Both the cold chain system and the human resources are continually developed to support the programme.

Sexually Transmitted Diseases/HIV/AIDS Programme:

The programme on sexually transmitted diseases started in 1988 with the preparation of a short-term plan of action for prevention and control of HIV/AIDS in Bhutan. Bhutan is one of the few countries where the HIV/AIDS control programme started much before the disease entered the country. The programme has well-charted strategies. Clinical screening of blood from sentinel sites and anti-natal clinics helped to screen the problem. A very strong advocacy programme through IEC helped to make the people and the communities aware of the problem and free distribution of condoms from health facilities helped in preventing the infection and controlling birth.

As the disease has shown a rising trend in the recent years, the STD/AIDS programme was reviewed in 2002 to find out the reason and to adjust the control activities for dealing with the problem.

Besides HIV/AIDS, the other sexually transmitted diseases like gonorrhoea and syphilis are also under good control right now.

Tuberculosis Control Programme:

Tuberculosis is still a major public health concern despite enormous improvement in its control methods. The TB Control Programme was started in 1976. With technical guidance from WHO, DOTS system has been introduced in the country and medical doctors and nurses are duly trained in this method. Each hospital has a TB in-charge who is responsible for taking care of the reporting new cases and following up on treatment.

Malaria Control Programme:

Perhaps the Malaria Control Programme is one of the oldest health programmes as it was started in 1964, with the full support of the Government of India. WHO has continued to provide the required technical support and helped the Government to strengthen programme management including training and establishing an entomology unit for the programme. Vector control method has undergone substantial change since 1995. For all practical purposes, comparative analysis of malaria data has been worked out taking 1994 as the base year because the Programme changed its control strategy from Indoor Residual Spraying (IRS) with DDT to Synthetic Pyrethroid which was meant to be a strategy for five years. The IRS was then discontinued in 1997 with the launching of the plan for insecticide treated bed net (ITBN) programme as per the recommendation WHO in the context of the roll-back malaria (RBM) initiative.

Leprosy Control Programme:

The Leprosy Programme was started in 1966 and was consolidated in 1982 and The Leprosy Mission and the Norwegian Santal Mission initially supported it. Though it was implemented as a vertical programme, it is now fully integrated into the general health service. While maintaining the achievements and working towards elimination, the Government is also working to strengthen the programme capacity.

Prevention and control of non-communicable diseases

Community-Based Rehabilitation Programme:

Though the Health Sector took up the community-based disability and rehabilitation programme only in early 1997, some work has been started much earlier by the Education Department. The Education Department started the Zangley Muenselling School for the Visually Impaired in Khaling, Eastern Bhutan decades ago. The Health Sector has identified one hospital as rehabilitation center and presently efforts are put in to develop this center.

Mental Health Programme:

The Community Mental Health Programme was formulated in 1997 coinciding with the beginning of the 8th Five-Year Plan. WHO and DANIDA played key role in its development by providing both financial and technical assistance. The programme is totally integrated into the general health service. A pilot mental health survey was conducted in 2002. The programme is being strengthened through developing the key staff and health workers.

Primary Eye Care and Oral Health Programmes:

The Department also takes care to prevent blindness with a blindness prevention programme that was initiated in 1987. Eye camps are organized to treat eye problems in the schools and communities. These community level activities are supported by care at the tertiary level. An optical shop supports the programme by providing glasses at a concessional rate.

As oral hygiene is generally poor, an Oral Health Programme was put in place in 1998. The programme conducts regular visits to the schools to examine and medicate the dental problems of school children besides providing normal dental service from the hospitals. Health Sector is experimenting with user-fee charges on cosmetic dental services while the basic oral health and dental services are provided free of charges.

Other Non-Communicable Diseases:

As cases of diabetes, cancer, and rheumatic heart diseases appear to be on the rise, the Health Department is looking into the problem to develop a programme for prevention and control of these problems.

Other services

Traditional Medicine:

The people of Bhutan depended on this system of healing much before the introduction of western medicines in the country. It is based on the system that is prevalent in Tibet. The traditional medical system was fully integrated into the health service package by 1967. A formal training institute was opened and one hospital was constructed in Thimphu for this purpose. Today all the district hospital have an indigenous service unit within them.

In collaboration with the Agriculture Sector, botanical gardens were established to grow local medicinal herbs. Research and Production Units were started at the National Institute of Traditional Medicine (NITM) using the latest Good Manufacturing Practices. The production of local medicines is still less than the country's requirement. A herbal tea produced by NITM form one of the bi-products of the research in traditional medicine and the tea is gaining popularity.

Essential Drugs Programme:

The Essential Drugs Programme started in 1985 to rationalize the use of drugs and make available an adequate supply of drugs and vaccines to all health facilities at a reasonable cost. The Programme has been evaluated twice, in 1990 and in 1998. The programme supported by the central medical store and the well-established cold chain system has made impressive achievements. A National Drug Committee reviews the essential drugs list annually. Further, the Bhutan Medicines Act is being drafted.

Reproductive Health Programme:

The reproductive health programme, including family planning and mother and child health, constitutes a priority programme of health sector. Given the population growth rate of 3.1% revealed by 1994 National Health Survey, a Royal Decree was issued on population planning in 1995. Since then the population control activities have been intensified which resulted in bringing down the growth rate to 2.5% in 2000.

According to surveys, the percentage of trained birth attendance has increased from 10.9% in 1994 to 23.66% in 2000, which is still low. To reduce the maternal mortality ratio, several comprehensive and basic emergency medical obstetric care (EMOC) centers have been established in the country. The establishments of a wide network of outreach clinics (ORCs) and the development and circulation of a safe motherhood guideline have also contributed to this effort. Further, since 2001, maternal death investigation has been introduced to find out the actual cause of maternal deaths and also to verify them so that effective interventions can be put in place. The country has also instituted the screening of cervical cancers.

Integrated Management of Childhood Illnesses

Since diarrhoeal diseases and acute respiratory infections top the list of morbidity in health facilities, the programmes on Control of Diarrhoeal Diseases (CDD) and Acute Respiratory Infection (ARI) was started in 1982 and 1987 respectively. Since the initiation of the WHO's Integrated Management of Childhood Illness (IMCI) strategy, these two programmes are combined to form the IMCI Programme

Nutrition Programme:

The Nutrition Programme was established in 1985. As far back as 1970, the National Assembly passed a resolution on universal salt iodization for the country. Periodic cyclic monitoring of the Iodine Deficiency Disorder Control Program (IDDCP) over the last four years also indicates that Bhutan has achieved the WHO goals for IDD elimination. However iron deficiency is still widely prevalent. According to a haemoglobin study conducted for school children in 2001, 58.6% adolescent (school children between the ages 5-15 years) are anaemic. In the 1990s 60% of pregnant women were also anaemic. To address this situation, the Health Sector adopted the policy of universal iron supplements to all pregnant women during pregnancy and lactation.

Nutrition education approaches include the promotion of increased iron intake and improved iron bio-availability through better dietary practices. In addition, vitamin A supplements are given to all children under five along with de-worming tablets and iron and vitamin A to all pregnant and lactating women.

The Public Health Laboratory also provides technical support to this programme in carrying out the cyclic monitoring.

Rural Water Supply and Sanitation (RWSS):

This programme was started under Public Works Department (PWD) in 1974. As this was more relevant to the Health Sector, it was brought under Health in 1998 under the name of Public Health Engineering Section. The programme looks after the supply of clean drinking water and helping the communities in constructing sanitation facilities. A Royal Decree was issued in 1992 requiring every household to have a proper latrine. With all the efforts, the country succeeded in providing access to safe drinking water to 77.8% of the population and covering 88% by sanitation facilities in 2000.

Further, the programme has been able to develop the Rural Water Supply Policy and start drafting the Water Act. The Public Health Laboratory assists this programme in carrying out water quality monitoring.

Information, Education and Communication for Health (IECH) Programme:

The IEC programme supports all other health programmes in advocacy. Although the IEC activities have been carried out much before, the IECH Bureau was formally established 1991. Over the years, this programme, through the use of mass media and its own advocacy systems, has been able to educate the general public about health hazards and motivate the public to change gradually to healthy behaviour. It also helps in developing health education materials for the other programmes and in documenting their progress.

School children are the most receptive of the IECH target groups and their motivation to adopt healthy habits help in motivating other family and community members to change. Thus the Division also runs a comprehensive health programme for school children.

The main concentration of the programme in the recent years has been advocacy against substance abuse and tobacco use and almost all the districts are now declared tobacco free. As the country does not produce any form of tobacco, there is no advertisement of tobacco products.

Village Health Workers (VHW) Programme:

In keeping with the principles of primary health care, it was seen necessary to extend universal coverage of health services to the rural population and encourage community participation in health activities and awareness. The VHW Programme was thus started in 1978. The VHWs are considered to be the important link between the community and the Government in improving basic hygiene and sanitation, prevention of vaccine preventable diseases, family planning, nutrition, control of diarrhoeal diseases and prevention of sexually transmitted diseases including HIV/AIDS, especially for communities that do not have easy access to health facilities. Presently there are about 1,327 village health workers supporting the normal health programmes.

Training Institutes:

In spite of the acute scarcity of human resource, Health Department manages with adequate workforce of different categories who are well trained in various fields such as clinical, managerial and administrative fields both within and outside the country. The Royal Institute of Health Sciences (RIHS) and the Institute of Traditional Medicine Services (ITMS) are the two main institutes where nurses, paramedical workers, technicians, *drungtshos* (traditional physicians) and *menpas* (traditional compounders) are trained. Although only pre-service training is imparted by these two institutes, both in-service and refresher courses including up-gradation courses have been given priority by the Department through the programmes.

The RIHS has been able to conduct BSc. Conversion Course for Nurses in collaboration with the Australian La-Trobe University through affiliation. Established in 1974, RIHS has been the

nation's premier institute in the production of various categories of human resource that forms the backbone of the primary health care. In recognition of this fact, the institute received WHO's Primary Health Care Award in 1998. The NITM is also committed to the production of the required human resource for traditional medical services and research in the traditional medicine.

The NITM has produced 36 drungtsos and 34 Menpas and the RIHS has trained 293 health assistants, 189 Auxiliary nurse midwives, 217 general nurse midwives, 263 basic health workers, 173 assistant nurses and 258 technicians of different categories as of 2002.

THE FUTURE OF HEALTH SYSTEM

Challenges

Despite the good progress the country has made since the 1st Five-Year Plan (July 1962-June 1967), the conditions and the requirement of the country are changing. To achieve the goals set objectives for the 9th Five-Year Plan, the Ministry of Health has to overcome a host of challenges:

Shortage of human resources for health

To strengthen the overall health service and decentralize management and services, human resource is required at all levels be it for programme management and promotional areas or curative services. The government has been able to train only about 3-5 medical doctors annually that can barely meet the attrition due to retirement, transfer to other ministries, etc. of medical doctors. The situation has been improving with more candidates joining the medical line in the recent years. The number of specialists trained in medical and management areas are even less. As the training of paramedics can be carried out within the country, the situation is much better in this area. It is this category of people who manage the primary health care system as well as service delivery. It is also mainly this category of people who manage most of the public health programmes in the Department of Health Services. Because of the same reason of human resource shortage, one or two programme personnel have to cover a lot and many times it leads to inefficiency. However, the situation is improving with joining of general graduates joining and managing the programmes.

As the Government's own fund is limited, the Ministry relies much on collaborating partners to develop human resources for health. However, as many collaborating partners do not want to commit funds for long-term training, it will take a long time to achieve self-sufficiency in human resources for health and unless the gap in this key component is filled, the programmes will continue to suffer.

Geography and scattered settlement

Bhutan is situated in one of the worlds most rugged surfaces and hence, the settlements are scattered and far-flung. This makes delivery of health and other social services extremely difficult and expensive. Coupled with the lack of qualified specialists at the district and regional levels, this poses a great challenge to efforts in curbing mortality that could have been prevented with timely care. In order to overcome this problem, the Government, with support from DANIDA and WHO, initially started the solar-powered radio communication system to link the basic health units (BHUs) to the district hospitals. To complement this initiative, the Government has then embarked upon the telemedicine programme in collaboration with WHO and the Japanese Government. As electricity and the basic telecom infrastructure were also getting developed slowly at that time, the progress in this area has been slow but the country has been able to connect at least one of the two Regional Referral Hospitals to the National Referral Hospital and improving the referrals and consultations between them. The facility is also being used by the hospital staff to access important health literature. But much needs to be done and materials required for this programme are usually very expensive.

Dependency on imports for all health requirements

Be it equipment or drugs and vaccines, the country has to depend on supplies from outside the country. Even if the quality of drugs and vaccines can be assured by purchasing them from WHO authenticated suppliers in the region, the hospital equipment and other supplies are a problem. The long time taken to procure the equipment or their spare parts and consumables (like reagents and x-ray films) continues to hinder surveillance and other vital works at the hospitals.

Political disturbance

This little country has not been spared from the political disturbance in the Region. Ethnic Bodo and Ulfa militants in the north-east India who are fighting for independence have taken unauthorized refuge in the forests inside Bhutan in the southern districts. Not only service delivery at times is disrupted in these districts by their interference, violence is the only option should amicable negotiations the Government has been carrying out with these two groups fail.

Shift from coverage to quality of services

Having achieved the desired level of coverage by health, the country now focuses on improving the quality of health care services. There have been cases of enormous structures in the districts with no doctor and hence, patients. The situation has been steadily improved over the years yet large rooms for improvements remain. As three people - one health assistant, one assistant nurse midwife, and one basic health worker - staff the basic health units, their functions can hardly be distinguished, as one has to substitute the other every now and then. Similarly, not all the district hospitals have similar facilities. Hence, the whole of next five years will be devoted to

setting standards of services and facilities and working towards fulfilling them.

Double burden of diseases

While the battle would continue against HIV/AIDs, Tuberculosis, Malaria and the like, emerging diseases, especially non-communicable ones, will entail strengthening their surveillance and developing and following strategies for prevention and control. At the tertiary care level facilities need be expanded to deal with the problem of rheumatic heart diseases, cancer, diabetes, etc.

Sustainability of development in the health sector

Although Health Trust Fund initiative has been launched already, much work remains to be done to accumulate the required capital, invest it to a reliable financial institute, and regularize the use of the proceedings from the Trust Fund. Only when everything is in place, Bhutan will be able to assess how much impact the Trust Fund initiative has made on making health care service sustainable. On the other hand, the contributing factors to health extend beyond the health sector. Unless due attention is given to coordinate efforts with other important Government organizations like Environment, Trade, Industries and Mines, Agriculture, Education, Municipal Corporations, Ministry of Health will land up containing the problems caused by other sectors and this aspect is viewed seriously in order to consolidate the progress that has already been made in various areas of health.

Meeting the Challenges

The Ministry of Development used to contain all social sector departments. This Ministry was replaced by the Ministry of Social Services in 1985 that looked after Health, Education, Culture, and Public Works Departments. This Ministry was replaced by the Ministry of Health and Education in early 1990s. The Ministry then left out the Public Works Department and concentrated only on Health and Education Departments. To give full attention to these two important sectors, the Government has decided to bifurcate the Education and Health Sector by mid 2003. The time has now come for this event and ground works have already been done. Health will then be a full Ministry with Departments for Public Health, Medical Education, and Medical Services. Each of these Departments will then be able to direct the programmes related to their respective areas without distractions from other commitments.

With the major challenges in mind, the Government has already looked two decades ahead and developed its vision for the future. In the document, *Bhutan Vision 2020*, the Government has set its priorities for all the sectors for the next 15 to 20 years. Eight priorities have been spelled out in this same document to guide the Health Sector during this entire period. These long-term priorities are further taken into consideration during the formulation of the Five-Year Plans of the Health Sector.

Current Organogram of the Health Sector

