His Majesty the King
Jigme Khesar Namgyel Wangchuck

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Annual Health Bulletin 2010

Bhutan Health Management Information System
Ministry of Health
Royal Government of Bhutan
Thimphu

Data compiled by Dopo, BHMIS, PPD

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ISBN : 978-99936-767-2-0

Design, layout and Printing by KMT Printing Press

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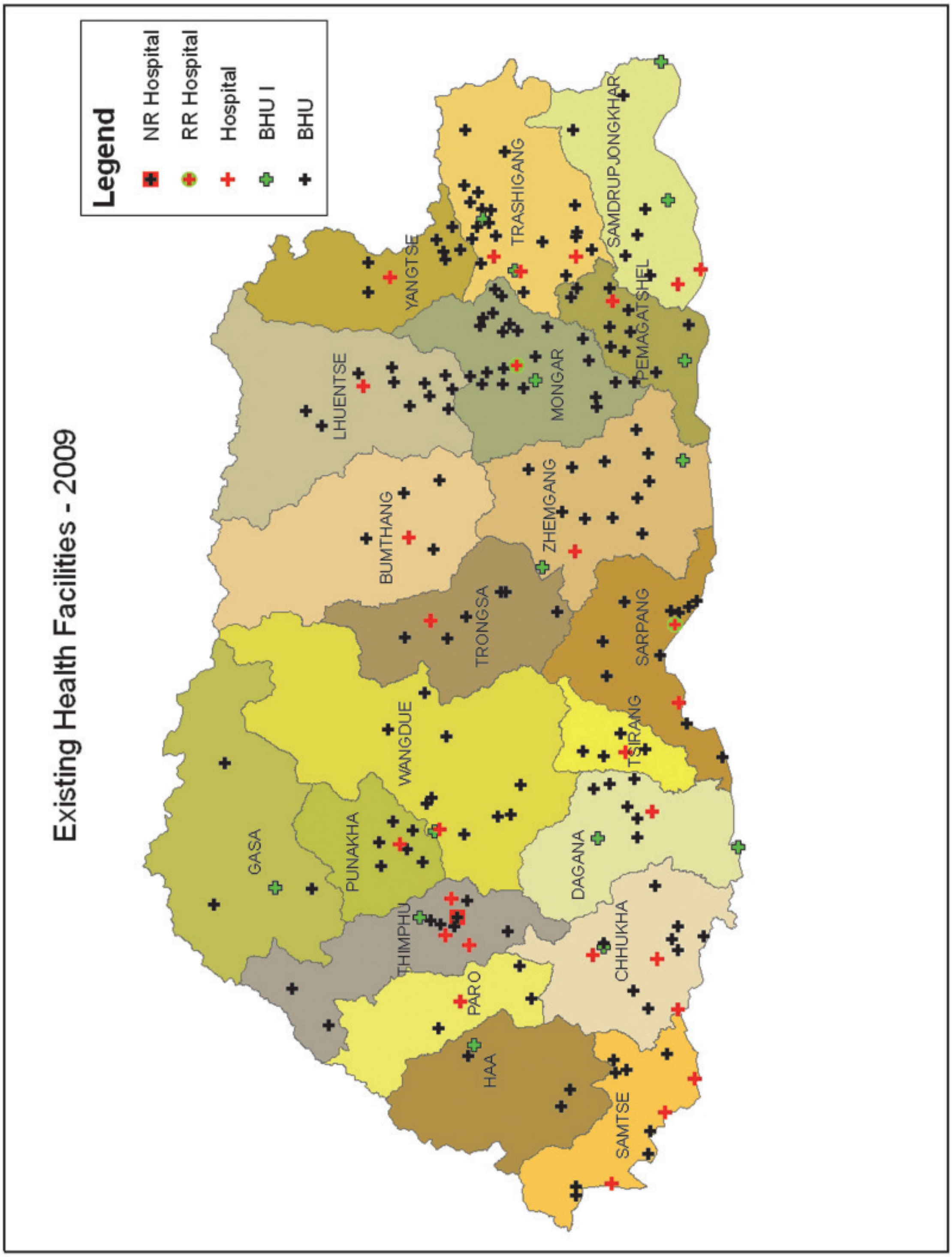
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EDITORIAL : The Present Free Health System and its continuity

Tshering Dhendup [0]

Overcoming extraordinary challenges, Bhutan has managed to achieve impressive national health outcomes despite very late introduction of modern system of medicine. Bhutan's achievements can be primarily attributed to its health system founded on the principles of Gross National Happiness (GNH), and the Royal Government's adoption and faithful implementation of primary health care as the main thrust and focus for health services delivery to date. Bhutan continues to receive international acclaim for its exemplary primary health care delivery system. It can be concluded that the present health system developed through the years has worked very well for Bhutan.

Yet, the evolving health needs of our population exacerbated by the rising health care costs driven mainly by the changing disease and demographic patterns; and the new medical technologies among others are questioning the sustainability and quality aspects of our free health care. No doubt that the denial of health care services to a fellow citizen based on inability to pay will stir deep emotions and starkly contradict the principles of GNH. But with scarce resources, how do we ensure high quality of care as well as sustain the provision of free health services?

As countries across the world frantically search for ways to mend their ailing health systems with skyrocketing health costs and ever widening health inequities, some of the important emerging consensus on health care reforms point towards those that are already well established and functioning in Bhutan e.g. provision of universal access to needed healthcare through single payer system and the reorientation of health systems to emphasize delivery of primary health care.

Therefore, when reacting to the critical issues of sustainability and changing healthcare needs, our responses must be intended towards strengthening the current well functioning health system, and should always be within the framework of our national values and health goals.

We need to explore for measures to: 1) maximize efficiency and reduce health care cost without compromising the quality and equity, 2) reinforce and prioritize primary health care system; improve tertiary care services to reduce referral costs abroad; 3) promote and intensify evidence based public health interventions, 4) explore alternative methods of revenue generations for national health expenditures, and 5) establish measurement of health system performances using quality, access, efficiency, equity, and happiness (of consumers and providers) as indicators. Further, the universal limitations associated with free health care

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systems can be addressed by putting in place incentives to: a) minimize inappropriate and overuse of health services b) control healthcare waste by the providers as well as consumers c) improve productivity of health professionals e) encourage responsibility for personal health; and d) ensure proper use of referral system by providers as well as users to name a few.

Though the above measures would be important, the continuity of our existing free health system -where almost all health services are provided free including the referral services abroad- would, to a large extent, depend on the policy decisions that eventually determine what constitutes the range of 'free access to basic public health care services' as enshrined in the Constitution (article 9, section 21) of the Kingdom of Bhutan.

Finally, in light of very limited resources, ensuring the continuity of our current free health care system would be surely a mammoth task. Nevertheless, just as our developmental philosophy of Gross National Happiness and its implementation continue to attract countries across the globe to look up to Bhutan for answers that are plaguing the world, Bhutan also has huge potential to showcase a health care model that would significantly contribute towards producing healthier and happier citizens of the world.

Health Indicators			
Sl.. No.	Indicators	Year 2009	Source
1	Infant Mortality rate (per 1,000 live birth)	40.10	PHCB, 2005
2	Under 5 Mortality rate	61.50	PHCB, 2005
3	Deliveries attended by health professional	66%	MoH
4	Immunization Coverage	90%	MoH
5	Access to safe drinking water	83%	MoH
6	Access to safe excreta disposal	91%	MoH
7	Malaria Incidence per 10,000 population at risk	10	MoH
8	Tuberculosis Prevalence rate per 10,000 population	15	MoH
10	Diarrhoea Incidence per 10,000 under 5 children	2892	MoH
11	Pneumonia incidence per 10,000 under 5 children	1031	MoH
12	Intestinal Worms incidence per 10,000 population	170	MoH
13	Conjunctivitis Incidence per 10,000 population	542	MoH
14	Diabetes Incidence per 10,000 population	38	MoH
15	Cancer Incidence per 10,000 population	17	MoH
16	Alcohol Liver Disease Incidence per 10,000 Population	23	MoH
17	Hypertension Incidence per 10,000 population	310	MoH
18	Skin Infections per 10,000 population	1322	MoH

Health Human Resource - 2009

Sl. No.	Categories of Health Workers	Total No.
1	Doctors (MBBS/Specialists)	176
2	Nurses	556
3	Nurse's Assistant	92
4	Health Workers (HA/BHW/PMW)	505
5	Assistant Clinical Officers (ACO)	45
6	DHOs/ADHOs	35
7	Drungtshos	41
8	sMenpas	52
9	Pharmacists	12
10	Pharmacy Assistants/Technicians	79
11	Lab. Technologists	13
12	Technicians/Assistants	549
13	Administrative & Support Staff	1601
Total Staff Strength, MoH		3756

Health facilities by Dzongkhag

Dzongkhag	Facility Type				ORC with shed	ORC without shed
	Hospital	BHU I	BHU II	Ind. Unit		
Bumthang	1	0	4	2	13	1
Chukha	3	1	8	2	27	20
Dagana	1	2	6	3	12	4
Gasa	0	1	3	1	9	4
Haa	1	1	3	1	7	8
Lhuntse	1	0	11	1	33	0
Mongar	1	1	23	4	51	6
Paro	1	0	3	1	20	7
Pemagatshel	1	1	11	2	29	4
Punakha	1	0	6	1	9	0
Samdrupjongkhar	2	2	6	3	31	5
Samtse	3	0	9	2	14	4
Sarpang	2	0	10	1	8	3
Thimphu	5*	1	8**	0	5	11
Trashigang	3	2	17	4	53	4
Trashiyangtse	1	0	7	1	23	0
Trongsa	1	0	6	2	19	0
Tsirang	1	0	4	1	11	2
Wangdue Phodrang	1	1	9	2	17	6
Zhemgang	1	2	12	3	27	11
Total	31	15	166	37	418	100

Note :

* *Indigenous hospital included under hospital*

** *Satellite Clinic included under BHU II*

STATE OF BHUTAN'S HEALTH

Jayendra Sharma[1]

The year old intense health care reform debate in the United States of America had a message for the world; there are no clear winners. With almost a sixth of its population devoid of comprehensive health coverage and a spiraling health care cost reaching more than 16% of GDP, serious shortfalls were illustrated in a country which may be considered the bastion of privatized health care. Even among the welfare states, the government assumption of high degree of responsibility for health services is increasingly being questioned. Among others, runaway health care cost is a prominent concern in health systems funded by taxes (as in the case of Canada, Britain and Sweden) as well as social insurance schemes (in Germany, Japan, France).

Health care systems across the globe are facing myriad challenges, including how to control costs, promote public health and provide accessible, efficient and high quality services. However, there are no clear answers and failed models exist in either sides of the pubic-private conundrum.

Having had the publicly financed and provided health care for more than four decades of planned socio-economic development, Bhutan has made considerable improvements in developing its health system capacity that has resulted in dramatic improvements in national health status.

However, the sector is facing increasing health care cost and concerns on sustainability of free health care have met most vocal representation. It is at this juncture where major operational reforms are unfolding and multiple roadmaps are being charted.

The national health financing framework is being reviewed to maximize operational efficiency and accommodate potential sustainability issues. Exploring supplementary sources of finance, streamlining procurement system, hospital transformation project and IT enabled health services are some of the initiatives toward this end. The National Health Policy is currently being drafted. The umbrella policy, which documents the traditional and re-oriented approaches, would guide the health sector priorities, policies and programmes for the up coming years.

Technical challenges largely remain. While the sector continues its battle against the traditional diseases profile, lifestyle related non-communicable diseases are already seeing growing incidences. The epidemiological transition, emerging infectious diseases and adverse health impacts of climate change has left the health sector already battling a complex and wider array of health issues with substantially limited resource base.

The *State of Bhutan's health* is described in three thematic presentations; Health Status, Health System and Health Financing.

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I. Health Status

Demographic and health trends

Since the start of five year plan based socio-economic development in the early 1960s, the country has come a long way. The national surveys conducted in 1984, 1994, 2000 and 2005 reveal major improvements in the key demographic and health indicators.

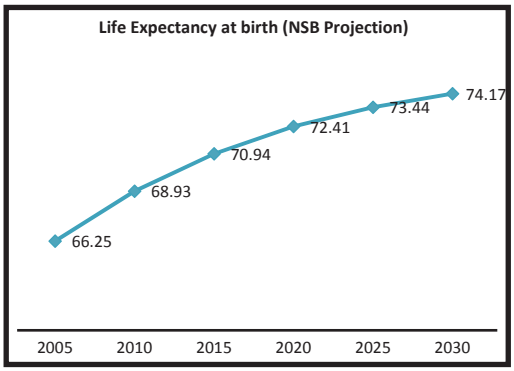
Major trends in demographic indicators

Indicators	Year			
	1984	1994	2000	2005
Crude Birth Rate (per 1,000 population)	39	39.9	34.1	20
Crude Death Rate (per 1,000 population)	13	9.0	8.9	7
Total Fertility Rate	NA	5.59	4.7	3.59
Population Growth Rate in %	3	3.1	2.5	1.3

The total population of Bhutan stood at 683,407 with 357,305 persons (52.3%) male and 326,102 persons (47.7%) female. With median age of 23 years and an ageing index of 15.4, the present population structure is a broad based pyramid depicting a higher proportion of the population in the younger age groups. The population is expected to grow at an estimated average annual increase of 1.4 % in the next 20 years.

Along with the fertility rates, the Crude Birth Rate has declined continuously and is expected to decline to 14.5 in 2030. The death rate is expected to fall from 7.7 in 2005 to 6.8 by 2030.

In line with these, life expectancy at birth has also increased significantly since 1950s, from 36.1 years to 66.3 years (66.8 years for females and 65.6 years for males) at present. There are, though geographical differences in the average life expectancy ranging from 57.8 years in Gasa to 70.3 years in Bumthang.



Notwithstanding the achievements, the present disease burden (table below) continues to project the traditional morbidity pattern. Sanitation, hygiene and water related diseases still feature prominently in the morbidity list. This is despite the 82% reported coverage rate of safe drinking water and over 90% sanitation coverage.

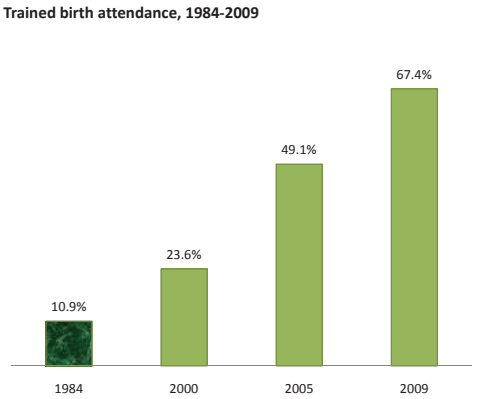
Top Ten Diseases

Sl.No	Name of the diseases	Number of cases in 2009
1	Common cold	3,02,035
2	Skin infections	90,375
3	Acute Pharyngitis/ Tonsilitis	70,999
4	Peptic ulcer syndrome	68,036
5	Musculo –skeletal	65,842
6	Diarrhoea	65,495
7	Other Disorders of Skin & Subcutaneous-tissues	60,923
8	Other Disease of the Digestive System	60,101
9	Other Respiratory and Nose Diseases	54,156
10	Conjunctivitis	37,046

Maternal and Child Health

Declining but still high maternal mortality

In 2000, Maternal Mortality Ratio stood at 255 per 100,000 live births, a decline of 62% from the 1984 figure. Trained birth attendance has seen significant increase over the years from 10.9% in 1984 to 67.4% in 2009. Yet nearly two-fifth of deliveries are still attended by medically untrained personnel. Most maternal deaths are due to post-partum haemorrhage occurring either at home or because women arrived too late at hospitals, necessitating easy access to emergency obstetric care services. In 2009, around 40% of births were non-institutional. Increasing scale and quality of institutional obstetric care is key to reducing maternal



mortality and other pregnancy related complications. Further decrease in maternal mortality will require substantial increase in the demand or "pull" side in addition to the supply or "push" side.

Rising abortion

A growing number of Bhutanese women seeking abortion in neighbouring India is evident. Hospital-based data indicate a rising trend in abortions from 466 cases in 2003 to 1057 in 2009; almost tripling in six years. Unsafe abortions contribute significantly to maternal deaths.

Declining child mortality

Notable improvements have been made in child health services as is evident from continual drop in Infant and Under 5 Mortality Rates. IMR declined from 103 per 1,000 live births in 1984 to 41 per 1,000 live births in 2005. Similarly, U5MR reduced by more than 60% from 1984 to 2005. Geographically disaggregated data, nevertheless, reports higher IMR and U5MR in rural areas. Around 40% reduction from the 2005 figure would entail achievement of the MDG target on childhood mortality.

Major trends in child health indicators

Indicators	Year			
	1984	1994	2000	2005
Infant Mortality Rate (per 1,000 live births)	103	70.7	60.5	40.1
Under 5 Mortality Rate (per 1,000 live births)	162	96.9	84.0	61.5

Nutritional status of children

The National Nutrition Survey 2007 revealed that acute malnutrition (wasting) do not seem to be a major problem at the national level, though the rise in prevalence from 2.6% (1999) to 4.6% (2009) is a concern. Wasting is more prominent among the children in the Western region (8.2%) compared to the Eastern and Central region (<3%).

An area of major concern is that more than a third of our children have stunted growth, defined by low height for age and a primary manifestation of malnutrition in early childhood. This is despite the tremendous initiatives taken in the child health services and a reduction of 3% from the 1999 baseline. Stunting prevalence is higher in the Eastern region (44%) compared to Western and Central region (33.8% and 33.3%). Nationwide, number of underweight children has gradually declined. The prevalence now stands at 11.1%, a decrease by 9.8% from the 1999 baseline.

Evidence suggests that there are two major determinants of malnutrition; disease and inadequate diet. Given the improvements made in child health services as is evident from the child health indicators, a requirement to address the dietary component is obvious calling for a multi-sectoral broad based approach.

Major Communicable Diseases

HIV/AIDS

Although the number of reported cases of HIV infection is still modest (prevalence of 0.1%), this is increasing. As of April 2010, 185 people were identified with HIV infection. A number of environmental factors exist that suggest steep rise in HIV/AIDS prevalence unless immediate preventive measures are taken. Among them are the higher prevalence of HIV/AIDS in neighbouring countries, rising level of substance abuse, multiple partners and a demographical profile characteristic of young population.

Tuberculosis (TB)

A total of 1150 cases of all forms of TB were reported in 2009 and 30 people died of the disease in the same year. While, the burden of TB in Bhutan is lower than regional average, in view of the significant public health challenges, the control efforts need to be accelerated. Of significant challenge today is the drug resistant strains of TB and TB-HIV co-infections which seriously threaten prevention and control efforts. 11 Multi-Drug Resistance TB (MDR-TB) cases were reported in 2009. Similarly, of the 185 cases of HIV infected people today, 11 of them are co-infected with TB.

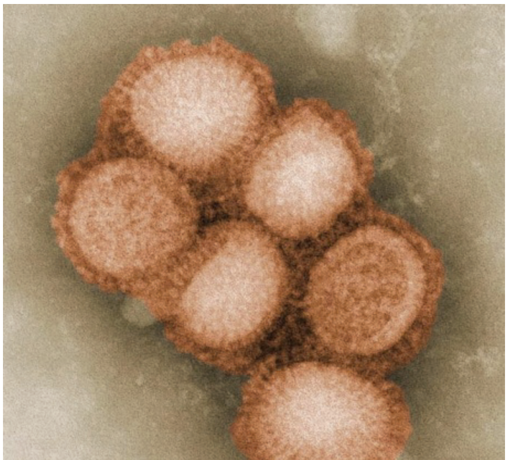
Malaria

There has been a consistent decrease in malaria burden over the years. However, the decreasing trend of malaria cases could not be sustained in 2009 with 972 positive cases and an increase in the Annual Parasite Incidence from 0.7 (in 2008) to 2 (in 2009) per 1000 risk population. The abnormal rainfall patterns associated with early rains and some dry spell led to numerous localized outbreaks. This is further compounded by high infection rates across the border and cross-border mosquito movements. The coverage and utilization of Long Lasting Insecticidal Net as well as Indoor Residual Spraying has remained above 90 %.

Emerging infectious diseases (Influenza)

H1N1 pandemic made major international headlines in 2009. A sub-type of the influenza A virus and popularly referred to as "swine flu", H1N1 claimed 17853 deaths worldwide as of early 2010 with laboratory confirmed cases reported in more than 214 countries and overseas territories (WHO, April 2010).

The H1N1 strain caused by the twin antigens of the influenza virus; hemagglutinin and neuraminidase, was first reported as influenza-like illness by the Mexican government on March 2009. In a quick succession the WHO's pandemic alert phase rose. Phase 6 was announced on 11 June 2009 when, technically, H1N1 was declared a pandemic or a worldwide epidemic.



Human H1N1 Virus

Picture courtesy: www.latimes.com

Six confirmed cases were reported in Bhutan out of which two were detected abroad. The National Influenza Pandemic Preparedness Plan was promptly activated with outbreak investigation, surveillance, capacity building, advocacy and rapid response activities. All six, who were tested positive, have recovered.

Similarly, H5N1 strain (Bird flu) remains a serious concern with the potential to cause a pandemic. Rare, but lethal human infections with the Bird flu have occurred. An outbreak of H5N1 was reported in Rinchending-Pasakha area in Phuntsholing in February 2010. Vigorous and rapid response activities with strict surveillance were conducted. Outbreak was contained to backyard poultry and no human cases were detected.

Health Impacts of Climate Change

Climate change poses a major, and largely unpredictable, challenge. Bhutan's vulnerability to the climate change was sufficiently demonstrated when two major earthquakes and a windstorm struck the eastern region in late 2009. Several health infrastructures were damaged along with loss of precious lives.

Rapid and profound environmental changes are envisaged in the coming decades particularly for the mountain regions.

Remains of Yangneer BHU in Trashigang after the 21 September earthquake

Earthquake in eastern region: damage as of 16 October 2009					
Dead	Injured	Hospitals/ BHUs			
		Beyond Repair	Major Repair	Partial Repair	Minor Repair
12	39	3	6	19	17

Glacial Lake Outburst Flood (GLOF) remains a significant concern for Bhutan. Besides the risk to properties and human lives from frequent flash floods, GLOF and landslides, significant public health vulnerabilities exist in the form of wider spread of vector borne tropical diseases, waterborne illnesses and malnutrition.

Non Communicable Diseases

Non Communicable Diseases (NCD) is already establishing it stronghold with sedentary lifestyle, traditionally high-fat based diet habit and consumption of alcohol and tobacco. Consequently, diabetes, hypertension, cancers and traffic injuries are already seeing growing incidences.

Selected non-communicable disease incidences

	2005	2008	2009
Diabetes Incidence per 10,000 population	14.87	38	38
Cancer Incidence per 10,000 population	8.74	10	17
Injuries and trauma per 10,000 population	926.3	944.3	971.3
Alcohol Liver Disease Incidence per 10,000 Population	19.17	20	23
Hypertension Incidence per 10,000 population	260.95	303	310

The 2007 Thimphu based survey on Risk Factors and Prevalence of Non Communicable Diseases found that a vast majority of the population (93.1%) is exposed to at least one of the NCD risk factors, 56.5% exposed to 1-2 risk factors and 38.4% exposed to 3-5 risk factors. Major risk factors include tobacco consumption, alcohol intake, physical inactivity and improper diet. The survey speculated that there is a huge potential of upsurge of NCDs in the country.

The Ministry has piloted the WHO recommended intervention package for NCDs in Paro and Bumthang Dzongkhags in 2009. The lessons of the pilots are yet to be assessed but preliminary experiences indicate that health facility based NCD intervention is worth expanding to other Dzongkhags.

II. Health System

Infrastructure and Human Resources

Enviable network of closely inter-linked health infrastructure have been established as the health sector reaches Mid Term of the 10th Five Year Plan. There are 31 hospitals in the country which includes 1 independent

indigenous hospital in Thimphu. The secondary and tertiary care services is supported by a network of Primary Health Care Centres (Basic Health Units and out-reach clinics) distributed throughout the country.

Facility Type					
Hospital	BHU I	BHU II	Ind. Unit	ORC with shed	ORC without shed
31	15	166	37	418	100

Shortage of human resources continues to plague the health system while the system gears towards providing a responsive and equitable access to quality health care. There are currently 176 doctors in the country. That generates doctor population ratio of 2.6 per 10,000. Around a third of doctors are working at the National Referral Hospital, the apex health institution in the country. The rest serve in the Dzongkhags.

Health Human Resource 2009	
Doctors (MBBS/Specialists)	176
Nurses	556
Nurse's Assistant	92
Health Workers (HA/BHW/ PMW)	505
Assistant Clinical Officers (ACO)	45
DHOs/ADHOs	35
Drungtshos	41
sMenpas	52
Pharmacists	12
Pharmacy Assistants/ Technicians	79
Lab. Technologists	13
Technicians/Assistants	549
Administrative & Support Staff	1601
Total Staff Strength, MoH	3756

Recognizing the acute shortage, numerous initiatives were floated; the government has initiated more favourable pay packages and scaled up negotiations for expatriate recruitment; works are afoot set up the first medical college in country; to strengthen leadership in health management, the two years in-service Bachelor of Public Health Program has been launched, and Nurse Assistants were hired to increase the pool of nurses in the country.

Accessibility and Affordability

The Bhutan Living Standard Survey (BLSS) 2007 found that an estimated 88% live within 2 hours distance by usual means of transport from a health service delivery point. Physical access has improved dramatically over the years, though the changing definition poses major challenges in determining a numeric change value.

Although basic health services in Bhutan are free at the point of service, there are associated costs to obtaining health care. The BLSS 2007 reported an average expenditure of Nu 56 (~US$1.3) in the last four weeks (for those who did not consult any health care provider) and Nu. 248 (~US$ 5.9) (for those who consulted health care provider(s)). Major expenditure items reported were "transportation costs" (50%) and "purchase of medicines and health accessories" (30%). Household expenditure on health services represented 1.53% of total expenditure (2.5% of total non-food consumption expenditure). The BLSS reported 3.2% as the composition of health expenditure in the total household expenditure. Therefore, while the absolute amount has increased over the years, its composition in the total household expenditure seems to have decreased. In summary, the share of household expenditures spent on health is stable, with transportation as the major expenditure item. There are anecdotal reports on people privately buying health services abroad, but the magnitude has not been independently ascertained.

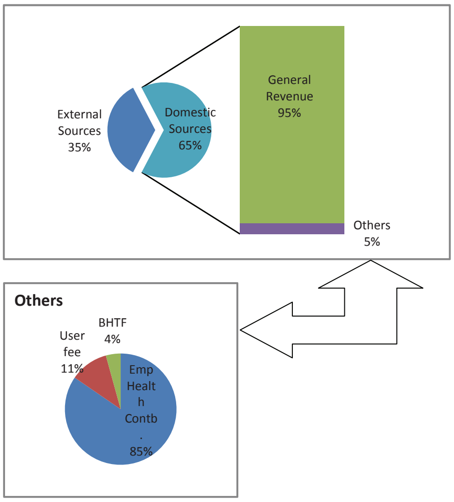
III. Health Financing

Sources of finance

Health care in Bhutan continues to be predominantly financed from public sources supported mainly by general revenue (tax and non-tax revenue) of the Royal Government and external aid. The national resource generation does not identify taxes and revenues related to health independently and merge them to the common pool of national resource. There are no earmarked taxes for health or health care services, which makes it difficult to specify precisely what proportion of the taxes is directly connected with the provision of these services.

Sources of finance may be broadly classified into external and domestic sources. External financing accounts for around a third of the total health care finance. The contribution of external aid has been significant in the resource envelope though its relative share has gradually declined over the years. Domestic sources account for the rest with the general revenue financing 95 % of the total share. Continuous increase in the health finance has been registered among both the sources. However, the increase is more consistent and gradual for domestic sources, while erratic and concentrated for external sources.

Composition of health finance, 2006-07



Supplementary Health Contribution, user charges on select services and Bhutan Health Trust Fund has been playing a minimal albeit steadily increasing role in recent years.

Expenditure

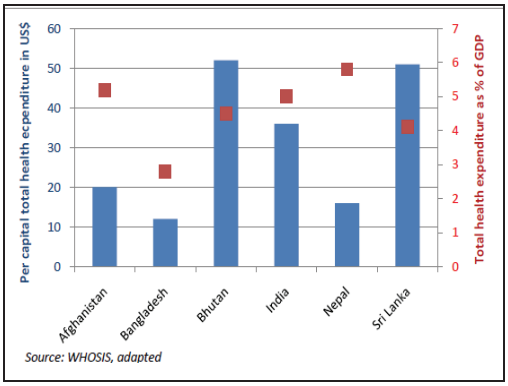
Expenditure on health care have increased steadily at an annual average of around 16% in nominal terms from 2002-03 to 2006-07. There are marked increase in per capita health expenditure as well; Nu. 3,159 (USD 72) in 2006-07 as against Nu. 2,022 (USD 45) in 2002-03.

Health sector expenditures

	2002-03	2003-04	2004-05	2005-06	2006-07
Total health sector expenditures (curr. Prices, mill. Nu.)	1228.1	1218.5	1347.1	1450.6	2103.5
Total Government expenditures (curr. prices, mill. Nu.)	848.7	831.9	953.2	1046.2	1690.1
Total private expenditure (curr. prices, mill. Nu.)	379.5	386.6	393.8	404.4	413.5
Total expenditure on health as % of nominal GDP	4.9%	4.4%	4.2%	4.0%	5.1%
Per capita Health Expenditure (Nu.)	2022	1956	2115	2236	3195

A high level of public health spending as a proportion of GDP, which has averaged over 4% of GDP in the last decade, has been sustained. Figure below presents Bhutan among the leading countries in terms of per capita health spending in South Asia. The GDP composition of health expenditure is, however, lower than three other countries in South Asia. Given that health care financing is primarily public sector driven in Bhutan, the figure portrays the high priority attached to health care in terms of resource allocation.

Comparative South-Asian Health Financing, 2006



Health expenditure pattern is dominated by infrastructure development and human resource related expenses. While infrastructure development predominate the capital costs, providers' cost accounts for the largest chunk of the total recurrent expenditure. The cost is manifested mainly in terms of pay, allowances and other personal emoluments for the staff and account for around a half of all recurrent expenditures. The second major expenditure item has been the drugs, medical equipments and other supplies which jointly accounts for a third of the total recurrent expenditures. Rest of the cost is accounted to public health and administrative costs.

In terms of level of services, central programmes dominate the cost portfolio followed by Dzongkhag health services, regional referral hospitals and patient referred abroad. Over 70% of the funds are centrally executed while the remaining flows to the Dzongkhag and Geog Health Administration.

Private engagements remain low

Private sector engagement in financing remains low. 1% of basic pay is deducted from the salaries of Government and corporate employees in the form of health contribution. There also exist user fees for selected services. User fees and Health Contribution jointly accounted for around 2% of the total domestic resource for health. Household expenditure on health services represented 1.53 % of total expenditure (2.5% of total non-food consumption expenditure) suggesting that direct out-of-pocket expenditure is low, and not a major concern.

2009 saw various initiatives in terms of up-scaling private sector engagements in health financing. The Royal Insurance Corporation of Bhutan Limited launched the health insurance scheme, a scheme designed to supplement the existing public service of patient referral abroad. The Royal Government's Economic Development Policy (EDP) 2010 is geared towards promoting Bhutan as an all round "wellness" destination where high end private sector clinics/hospitals shall be encouraged. The EDP 2010 supports

incentives in the form of tax holidays; 5 years for newly established pharmaceutical shops in the rural areas and 10 years for high-end private health services. The draft Foreign Direct Investment (FDI) Policy, similarly, is exploring FDI engagements in specialized health services. The primary motivation of allowing FDI has been to supplement the government services in the same way that some services are currently purchased outside the country.

There is substantial scope for diversifying and re-designing the healthcare financing mix. The alternative and supplementary mechanisms, however, should be sufficiently advised by strenuous contextualized researches. They must, as well, be rigorously assessed to ensure that they are effective, efficient and equitable. Efforts must be geared to optimize opportunities while minimizing the risks involved.

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SCOPE AND CHALLENGES OF BHUTANESE TRADITIONAL MEDICINE

"Ancient Science of Healing for 21st Century Healthcare Needs"

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Background

Traditional medical systems or alternative medicines in various forms have been in practice for many centuries around the world. Although there has been a decline in the use of alternative medicine in some countries, there has been an increasing use of complimentary and alternative medicines in many developed and underdeveloped countries. In some Asian and African countries, 80% of the populations depend on traditional medicine for primary health care. In many developed countries, 70% to 80% of the population has used some form of alternative or complementary medicines according to the WHO Fact Sheet.

Bhutan in the past was known as the sMen-jong-rGyal-khab, meaning the land of medicinal plants due to its rich medicinal flora and fauna. Today it is one of the tenth biodiversity hotspots in the world with huge natural medicinal resources. The availability of rich biodiversity coupled with the great importance Bhutanese communities paid to living in harmony with nature ensured the survival of gSo-ba-rig-pa, the Traditional Medicine System practiced in Bhutan. It is a combination of science, philosophy and religion that blend culture and tradition and epitomizes the holistic healthcare approach in which health and spirituality are inseparable.

The traditional medicine system was formally introduced as a part of the national health care system in 1967. The integrated approach of Bhutan's healthcare helped the explosion of access to Traditional Medicine. Today, it is available in all the major hospitals around the country under the same roof with the allopathic medicine. In addition there is the National Traditional Medicine Hospital (NTMH) which serves as the referral hospital for the traditional medicine services in the country. The healthcare system in Bhutan encourages mutual consultation, treatment and cross referrals of patients through integrated health policy. Further, the healthcare system empowers the patients and provides them the choice of treatments within the overall framework of national healthcare.

Immense progress has been made in terms of human resources development, production of traditional medicines and provision of traditional medical services in the country. However, traditional medicine in Bhutan remained static with no investments for infrastructure development, human resource development, scientific

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research and lack of service innovations. With the growing number of patients using traditional medicines and the demand for quality services, there is a need to further strengthen the existing facilities and systems to improve the quality of traditional medicine services.

The availability of Traditional Medicine Services in the National Healthcare System is a very unique and important feature of Bhutanese Healthcare. This provides a space within the national healthcare system for Traditional medicine to evolve and thrive in order to provide optimal and sustainable healthcare benefits to the people.

In addition to providing effective and sustainable healthcare, traditional medicine can also open huge opportunities in the areas of drug research and development, and huge other commercial opportunities. For instance herbal treatments are the most popular form of traditional medicine, and are highly lucrative in the international market place. Annual revenues in Western Europe reached US$ 5 billion in 2003-2004 and in China sales of products totaled US$ 14 billion in 2005 (WHO Fact Sheet on Traditional Medicine).

Bhutanese traditional medicine has huge scope and opportunities. However, it faces a number of challenges that have to be addressed in order that it continues to be relevant and useful for providing primary healthcare needs to the people. Some of the important opportunities and challenges are discussed below.

Scope of Bhutanese Traditional Medicine

i. Clear National policy and Strong Political Commitment

The national policy for traditional medicine is to preserve and promote the unique system of medicine that is based on rich culture and tradition through capacity building and establishing an effective system within the framework of national health care delivery system. This policy provides a strong framework within which the traditional medicines can be developed.

Bhutan 2020: A Vision for Peace, Prosperity and Happiness clearly states the importance of traditional medicine: *We must continue to provide a place for traditional medicine in our system of health care. Traditional medicine embodies knowledge that has been accumulated over centuries and which draws upon the nation's rich bio-diversity and of plants with proven medical qualities. As these qualities become substantiated by scientific research, there is a growing need to integrate more effectively traditional medicine with the modern system of health care. The maintenance of traditional medicine not only adds dimensions to the nation's system of health care, but provides an alternative for those who seek one. It should also be regarded as a conscious decision to conserve a part of our rich and varied cultural heritage.*

As clearly highlighted in the policy documents, strengthening of traditional medicine and integration with modern health care system is considered as an important policy objective of the health

sector. There is a clear vision and policy direction creating a favourable environment in which the full potential of the traditional medicine can be harnessed and used.

ii. Holistic healthcare approach

The traditional medicine with its unique philosophy and approach has a holistic approach in the treatment of human suffering and diseases. It not only considers in treating the disease and its causes but also considers the interdependency of man and nature and the spiritual component which are considered in the treatment.

This system of healthcare is becoming meaningful in today's world where the human suffering has not ceased in-spite of the highly advanced medical technologies and medicines.

iii. Preservation of Culture and identity

The traditional medicine is very much linked with Buddhist philosophy and therefore embedded in the Bhutanese culture and tradition. Some components of traditional medicine are being practiced by the religious community and different people in the remote communities. So it is a very important part of our culture and tradition. Therefore, it not only provides a choice of treatment to the people but also promotes the identity of the Bhutanese people. The policy for traditional medicine is to preserve and promote this unique system which is part of our cultural heritage by establishing an effective system within the framework of national healthcare delivery system.

iv. Sustainable management of natural resources

Evolving over a long period of time based on necessities and experiences, traditional medical knowledge has played an important role in natural resource conservation. Through the provision of traditional medicine care, awareness and focus on medicinal plants is promoted with development activities geared towards their sustainable management. Community-based sustainable management of medicinal plants are established and some species are domesticated for cultivation in collaboration with the Medicinal and Aromatic Plants Program under the Ministry of Agriculture. Enrichment activities are carried out for the rare and endangered species. Farmers/ collectors are provided training on sustainable collection and post harvest care to minimize wastages. All these activities collectively promote sustainable harvesting while ensuring the quality of the medicinal plants. Thus, the provision of traditional medicine helps in the conservation and management of the natural resources.

v. Integration of modern and traditional systems in the national healthcare

Today all the traditional medicine units in the 20 Dzongkhags are integrated with the allopathic medical system. The delivery of services is under the same roof. The distribution and supply of traditional medicines are done through the Drugs, Vaccines and Equipment Division (DVED)

within the same system. Meetings are held between the Doctors and Drungthsos on a regular basis which has promoted a sense of understanding amongst the policy makers and the professionals from both sides that it is in the interest of both the systems to work together in the healthcare delivery. This integration approach also promotes the more holistic approach to health and wellbeing and gives a unique feature to the Bhutanese healthcare system. The Essential Drug Program implemented for allopathic medicine is also replicated for the traditional medicine and this has enormously been successful in making the delivery of traditional medicine services very effective and sustainable. The true integration of the two medical systems will go a long way in the effective delivery of services. There is immense potential for the systems to compliment each other if true spirit of integration is implemented.

vi. Local production of Traditional medicines and manpower

Unlike allopathic drugs, traditional medicine in Bhutan is purely an indigenous product. The raw materials, the processing know-how, and the human resource capacity are all available in the country. The preparations and production process are purely natural and no chemicals are used. This makes the traditional medicine the most sustainable and reliable healthcare as all the resources are available in the country and we have direct control over the whole chain of activities from the collection of raw materials at the source to the delivery of services and medicines to the patients.

The traditional medicines required for the healthcare are produced within the country using modern science and technology. To improve patient compliance, suitable dosage forms such as tablet, capsule, pills, powder, syrup, ointment, medicated oil, fermented mix and hot compression have been devised. As most of the medicinal raw materials are available within the country and the human resources required for this sector are trained in the country, the traditional medicine system is one of the most sustainable systems of healthcare in Bhutan.

vii. Patient empowerment and choice of services.

The integrated health policy empowers the patients by providing them the choice of treatments. The national healthcare system provides both traditional medicine and allopathic medicine from the same service centre under one roof in all the 19 districts. In Thimphu the National Traditional Medicine Hospital works very closely with the Jigme Dorji Wangchuk National Referral Hospital (JDWNRH). This allows cross referrals between the two systems and presents huge opportunities for the systems to compliment each other in the best interest of the patients.

The popularity and awareness of Traditional medicine in Bhutan is showing a positive trend. For instance the number of patients seeking traditional medicine services is growing every year. This is clear from the patient record at NTMH which treated 40,196 patients in 2009. This increase in trend is observed in all the indigenous units around the country. Further, a survey

study conducted by National Institute of Traditional Medicine (NITM) in 2008 found that the traditional medicine services were sought by all age groups and by all communities with all backgrounds.

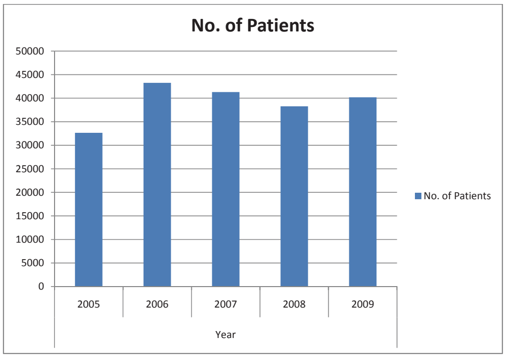

Figure1. Number of patients visiting NTMH 2005 - 2009 source: NTMH information unit.

The presence of traditional medicine in the national healthcare enriches the system with wider dimension of choice for the patients. However, the choice must be made an informed choice and the effective integration will ensure that the two systems do not become competitors at the cost of the patients, rather compliment each other in fulfilling the healthcare needs of the patients.

viii. Accessibility of Traditional Medicine Services

The integration policy contributed to the effective expansion of Traditional medicine accessibility to all sections of our society at no extra cost as it is made available from the same service centres as that of the allopathic medicine services. Although the traditional medicine was available to only the rich and influential families in the past, it is today conveniently available to everyone in all the major hospitals and even in some of the basic health units (BHUs). There are now 37 Traditional Medicine Units in hospitals around the country and the NTMH at Thimphu.

The NTMH in Thimphu provides a range of services such as Acupressure with gold and silver needles, bloodletting, moxabustion, herbal bath, steam bath and application, nasal irrigation, massage with medicated oils etc. Many people seek traditional medicine treatments for chronic disease like sinusitis, arthritis, asthma, rheumatism, liver problems and diseases related to the digestive system and nervous system. The reason why traditional medicine is particularly good for such chronic diseases has to do with its holistic, rounded and profound approach to the treatment of human being.

ix. Opportunities for Traditional Medicine professionals

Despite limited resources and expertise, most of the professionals required in the delivery of traditional medicine services are trained adequately from the National Institute of Traditional Medicine at much lower cost and as per the requirement of the national healthcare system. This was made possible by the farsighted vision of His Majesty the fourth Druk Gyalpo in 1978 when His Majesty commanded the establishment of a training centre for the Drungtshos. National Institute of Traditional Medicine (NITM) is now able to train all the traditional medicine health professionals required by the Ministry of Health.

Currently Ministry of Health is the only employing agency for the NITM graduates but this is expected to change in the future. The rapid socio-economic and political development of the country, the population growth and demographic changes will spur the need for more traditional medical practitioners in the country. There is also a growth in popularity world wide for the alternative medicine and our system of traditional medicine is one of the popular alternatives. Therefore, there is great scope to increase the intake of students to meet the growing demands.

The possible change of policies on privatization and private practice in the healthcare system in ensuring sustainable healthcare delivery in future by the Government might create more demand for quality traditional medical practitioners. Further, the development of health and wellness centers in Bhutan with Government policy specifically identifying high end health and wellness centers in their manifesto would create huge employment opportunities for the NITM graduates.

x. Health and Wellness Centers

Bhutan being one of the 10 global hotspots of biodiversity, it is visited by people from all walks of life from every corner of the world. For centuries Bhutan has been known as the land of medicinal plants and is home to many exotic and endangered species of medicinal plants. Bhutan has many medicinal streams (men-chus) and hot springs (tsha-chus) which are frequented by hundreds of people to reap benefits from their medicinal properties.

The country's noble development philosophy of Gross National Happiness has also raised the interests of many people around the globe. All these make Bhutan a unique destination for health tourism. Understanding the potentials of immense economic benefits, the Government has identified Health tourism as one of the priorities in the 10FYP. This offers huge opportunity for traditional medicine as many new herbal products for spas in hotels and resorts in the country will have to be developed. However, there is limited capacity at present and need to be developed with technical assistance and collaborations. Most importantly investment is needed in the development of herbal health products and technologies. Wherever possible collaboration with external agencies with specialized technologies appropriate to us must be encouraged and developed for bringing down the cost of product research and development.

xi. Scope for Research and Development

Traditional medicine has vast knowledge and wisdom. The research on traditional medicine has great potential for discovering new drugs and understanding new mechanisms of drug actions like additive and synergistic effects of the multi-ingredient compounds. Research has shown that traditional medicine formulations are not just hypothetical and theoretical assumptions, but founded on empirical based sciences. In fact, many drugs that are used today in treating life threatening diseases have been discovered through research starting from the indigenous

knowledge and practices. Even in our context a screening of herbal plant used in the Bhutanese traditional medicine was found to be active against malarial parasite.

Today, the research in traditional medicine has become increasingly important as the drug regulatory authorities in different countries are introducing stringent norms and mechanism which may even threaten the existence of traditional medicine system. Therefore, there is an immediate need to do lot of research to improve scientific evidence and convince the scientific community on the empirical basis of Traditional medicine.

Challenges of Traditional Medicine

While the Bhutanese traditional medicine has immense opportunities under the current system, increasingly it is facing a number of challenges that if not addressed will adversely impact its very existence. However, the challenges must be turned into opportunities by addressing them strategically. The following are some of the challenges facing traditional medicine today.

i. Sustainability of raw materials

With the increased access of health services, there will be an increased demand for the traditional medicine services resulting in increased demand for the medicines. Unless proper collection methods and sustainable harvesting techniques are introduced there is a very real possibility that the medicinal plants will become scarce and extinct. The relevant sectors must work in coordination to ensure the sustainable collection of the medicinal resources.

The impact of climate change will also be felt in traditional medicine as the change will result in habitat loss for many medicinal plant species. Mitigation measures must be taken to prepare for such eventualities and address the issue of raw material sustainability for the production of traditional medicines.

In the long-term, sustainability is essential and farmers are being encouraged in sustainable collection and cultivation of medicinal herbs.

ii. Use of animal products in traditional medicines

The sourcing of animal parts used in the production of traditional medicines is becoming more difficult every year. Further, some of the animals that are used in the production of medicines are on the international endangered species list and banned by law to use them. To address this issue there is a need to carry out research on plant substitution for the animal parts used as described in the traditional texts.

iii. Research in traditional medicines

Research in traditional medicine is resource intensive, time consuming and complex due to their multi-ingredient formulations. However, medicine and natural resource-based research presents a great potential. Building leadership in research and drug development is resource and knowledge intensive activity and must be accorded top priority. The capacity building in research must be given importance.

Only investment in the research of Traditional medicine will result in

dynamism of this system and innovations that will make it relevant to serve our society for many centuries in the future.

There is a need to establish institutional linkages with reputed institutes and universities abroad for collaboration in traditional medicine, especially in carrying out scientific research for new drug development and discovery. There is a need for clear directives and policy from the authorities on collaborative research and benefits.

For any drug research, the core component is the pre-clinical and clinical studies. Such studies will tell us quantitatively how effective our formulations are. It will also help us to explain the probable mechanism of action. Without accruing proper pre-clinical data with accepted protocols, we cannot move on to clinical phase of studies and without clinical data, population willing to accept our formulation will dwindle with time.

iv.Documentation of scientific evidence

Although the traditional medicine has been practiced for centuries and its efficacy and safety established over centuries, little documentation is available on evidence of therapeutic claims including the properties of many formulations used in the system. There is an overwhelming difficulty in defining quality and efficacy of traditional remedies due to their complex and multi-ingredient nature. This demands that there is need for serious scientific research to improve scientific evidence.

There is a danger of traditional medicine losing ground to modern allopathic medicine due to its limited scientific evidence and documentation. Unless appropriate measures are adopted there is a risk of losing its scope over time as the younger generation is not well informed on its benefits, opportunities and its values.

v. Patenting and IPR issues

It is almost impossible to patent the traditional medicines as the knowledge belongs to the community. Patenting requires infrastructure and legal framework and facilities which will incur huge financial cost. Hence there is a risk of losing its knowledge, significance and its role in our healthcare with more pressure and western influence.

Administration and management of Traditional medicine Services

ITMS is not clearly reflected in the overall organizational chart of the Ministry of Health. Despite its varied scope and challenges, traditional medicine administration and management is at this moment very fragmented and its authority very limited to effect any meaningful change in harnessing the potential of our traditional medicine. For instance NITM is functioning under the Royal University of Bhutan (RUB), NTMH and PRU are functioning under the Department of Medical Services with not much scope for organizational growth and development.

Therefore, the management and administration setup for traditional medicine services must be allowed for organizational growths and expansion by empowering

them with certain degree of autonomy to bring about the desired positive change that will encourage innovation, research and new ideas that will make traditional medicine dynamic to adopt in the changing environment. There is a strong need for a management and administrative entity that has the authority and the mandate to solely focus on traditional medicine in the country. There is a general feeling that ITMS is becoming an orphan organization that is not getting sufficient focus and support from its parent organization.

vii. Investment in Infrastructure and HRD

The Royal Government of Bhutan made notable investment in traditional medicine encompassing its development in research, patient care, hospital infrastructure, HRD and service delivery. However, there is immediate need in many areas where substantial investment has to be made for the traditional medicine to continue its positive growth and development.

Ideally the existing hospital must be expanded to enable expansion of specialized services with inpatient facilities. There must be continuous and sustained investment support in the human resource development and capacity building. The manufacturing and production of traditional medicines must be done as per the Good Manufacturing Practice principles (GMP) for quality and fficacy. Similarly, capacity building in the areas of drug research and bio-assays must be developed to enable scientific validation of traditional medicines and harness its potentials.

Conclusion

Traditional medicine is one of the most sustainable methods of health care delivery system as all the medicines required are produced within the country and most of the human resources are also developed in the country except in certain specialized areas. Therefore, it is very important that this system of medicine be further promoted through strengthening of the existing programs and by introducing new programs and services.

The potential of Traditional medicine for health benefits, economic opportunities, professional development and technology generation is immense. However, the potential can only be realized with an enabling environment and clear policy directives on Traditional medicines. There is an urgent need to make fundamental changes in the organizational setup of Traditional medicine services for future growth and benefits. There is also a need for more investments in all areas of Traditional medicine with special emphasis on research and development.

The potential of traditional medicine must be recognized and enabling environment with sufficient investments must be made to harness its full potential. The challenges facing traditional medicine services must be addressed to convert those challenges into opportunities.

The development of traditional medicine sector fits well with the government's policy of creating green economy and it has the potential to create high tech, low carbon industries with immense commercial

opportunities. However, as stated earlier there needs to be clear recognition and real vision by the leadership to realize the immense potential of our traditional medicine. It should be given due support and attention for it to continue playing an important role in our national healthcare system.

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THE ANNUAL HOUSEHOLD SURVEY : Steps for the future

Dr. Gampo Dorji[3], Mr. Dopo[4]

Background

Public Health is concerned with the protection and improvement of the health of the population and communities. A huge variety of information is required to guide public health practice to understand the population health, monitor the impact of interventions and identify areas for future interventions. The Annual Household Surveys (AHS), in essence a household census, has been an important source of such information for the health sector. It was difficult to trace the archival information of the history of the AHSs. However we could recount the history through the memory line of a few senior health workers who have been part of the evolution. We learnt that the household survey was initiated in mid 1970's focusing on leprosy services in the selected areas by the Leprosy Mission. In 1979-1980, household forms were introduced in Mongar district and the household information was continuously updated during the health worker's field visit. Recognizing the need for the national vital statistics for planning, the Household Survey became the annual national health survey in 1985. Except for a brief stall in 2000-2001 when major revisions on forms were introduced, the Annual Household Survey has remained a ritual activity of the district health services.

A conversation with the District Health Officers

Being advocates for using data for decision making, we were convinced that the Annual Household Surveys would indeed be a robust source of information for purposes of public health programming for Bhutan. However, we were concerned about the quality of data of the household surveys and felt an urgency to explore ways to revitalize the AHS as soon as possible. We engaged in a telephonic conversation (call it a interview) on April 19, 2010 with the district officers from eleven districts (Wangduephodrang, Lhuentse, Pemagatshel, Gasa,Sarbang, Paro, Thimphu, Tashiyangtse, Mongar, Samdrupjongkhar, Chukha) using a short questionnaire. The aim of the interview was to understand the current practices of the survey, understand the shortcomings, appreciate opportunities and challenges and thereby identify common solutions to revive the AHS.

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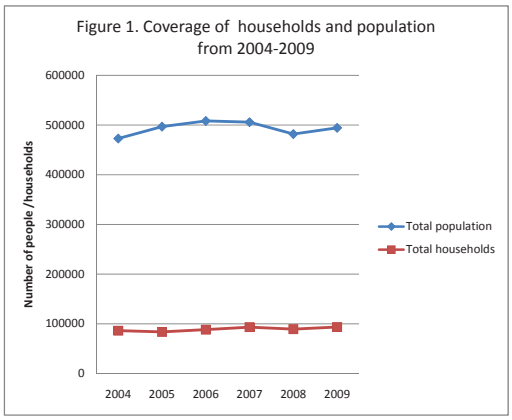
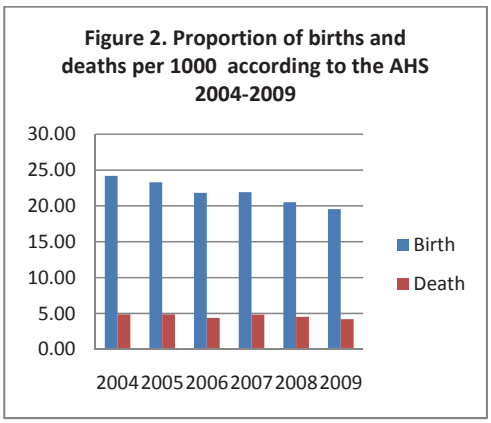
Coverage and uses of AHS

Pertaining to the variables, the current AHS collects information on demographic background, age-group specific deaths, maternal deaths, births, disability types, rural water supply, latrine coverage, sanitary practices of the population and immunization status of children. The survey is enumerated by the health workers in their respective catchment areas.

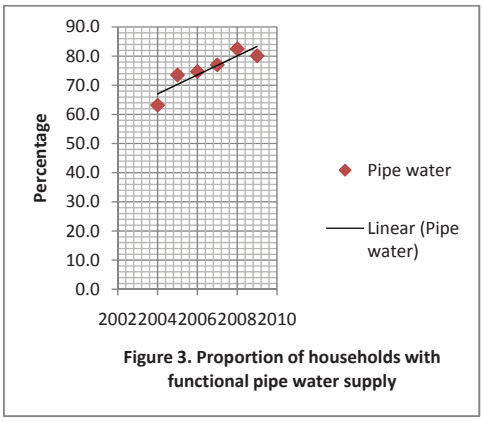
From 2005-2009, the Annual House Hold Surveys consistently covered household information of over 71 % of the population (Refer figure 1). For instance in 2009 AHS, 93588 households were covered which corresponded to population of 494302 or 72.3% of the projected country's population. Except for the two largest towns: Thimphu and Phuntsholing, the Annual House Hold Surveys had a good coverage of the majority of the rural population, semi-urban and urban settlements.



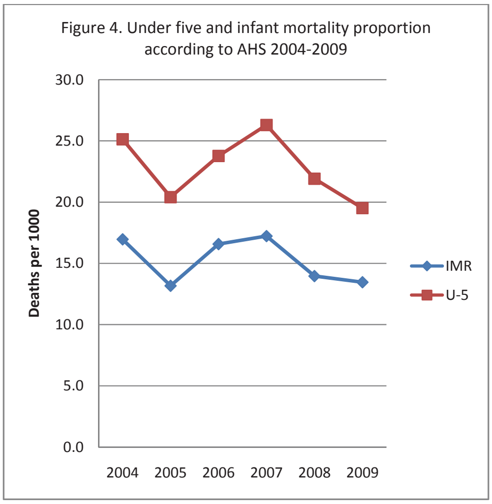
In the absence of a well developed vital registration system, AHS has been the key source of information for important vital event (Refer figure 2). It is a common sight to see the information from AHS neatly displayed on the information board of the Basic Health Units.



At the national level, data from the AHS is a source to compare trends of vital events and disability, track the coverage of safe rural water supply (Refer figure 3), and monitor achievements in hygiene and sanitation.



AHS would be an important data base to track health sector related 2015 Millennium Development Goal indicators for maternal deaths, and neonatal deaths (Refer figure 4). However we must take timely corrective actions to improve the quality of the data to measure these important indicators with confidence.



Most importantly, information generated from the AHS is although still not optimum but is increasingly being used for identifying local actions at BHUs and communities from where information is collected. The AHS contains a wealth of information that can be used for decision making for program interventions, archival data and for those interested in operation research and academics.

Current state of AHS

There was a huge variation in time spent by a health worker for the AHS depending on spread and the density of catchment population. On the average, the person days spent for the AHS by each health worker is 15.29 days for data collection and compilation. In the above eleven districts, the health workers spent 4011 person days per AHS.

Preparatory process for the survey varied among the districts. Most of the districts did not organize separate discussion for the survey but included a discussion in the annual review meeting. Others passed on the instructions to the health centers or notified the start date, while other organized a day long orientation and discussed on the forms and formats. It became very clear from all the interviews that the preparatory approaches have been inadequate to discuss the questionnaires in depth, correct mistakes of the past or transfer skills of data collection. It was also evident that there was no expected standard practice of door to door survey. The door to door visits are more likely to be done for scattered communities, while for clustered settlements information is collected in group gatherings.

The supervision was grossly nonexistent in all the districts during the survey. Those who had supervised had only done it partially. Health worker enumerators were left on their own to complete the activity. Most of the district health officers felt that supervision was important but could not effect due to time constraints. One district health officer felt that since the health worker were trained, supervision could be relaxed. It is then reasonable to worry how this might affect the quality of data when the surveys have neither adequate pre-survey preparation nor supportive supervision during the survey.

Challenges and pitfalls

We also identified challenges encountered for the AHS during our conversation with the District Health Officers. Most of the themes condensed to difficulties in meeting appropriate interviewees such as the head of the house hold , disorganized community information for participation, unable to complete the survey in one month allocated duration due to lack of staffs or movement of staff for other official calls during the survey schedule. Few districts also had to ask for additional household survey forms from the central. In addition insufficient budget to support the staff travels was one of the reasons why activity was stalled in few areas. Two geogs: Wangchang and Shaba in Paro, Gidakom in Mewang geog in Thimphu, Deothang geog under SamdrupJongkhar were not surveyed in 2008- 2009 for the lack of travel budgets.

Missing household occupants are likely to either prolong the survey as the health worker enumerator needs re-visitation or increase the dropout rates affecting the coverage of the households. Inspection of the water supply from the source to the supply is time consuming and often difficult.

The district health officers also commonly expressed that the culture and skills in the health facilities to use the data is still disproportionately low as compared to the amount of effort put in gathering it.

Suggestions for future

The Annual Household Surveys as the routine source of information on demography characteristics, fertility, and mortality cannot be disregarded. The other surveys such as the population Housing and census are infrequent and therefore cannot substitute for AHS. As discussed earlier, health and public health science need recent and routinely generated information and data to complete the cycle of program interventions. The current AHS suffer from problems of incompleteness, inaccuracies and drop outs providing a huge scope for improvement to generate a good quality of data and information for health actions. A series of systemic considerations at the ministerial policy, pre-collection, field work, data management, dissemination and use of reports is urgently required to strengthen the utility of AHS. It is in this line that we summarize our suggestions into two possible options following the discussions with the district health officers:

Option One:

- Maintain the current Household Census as such and include AHS as one of the key deliverables of the district health sectors and therefore measure the district performance accordingly.
- Introduce a "blocked calendar period for AHS" for all the health sectors and freeze or minimize the movement of the health workers and district management during this period to ensure proper coverage and timely completion of the survey.
- Provide blanket coverage of the ethical responsibilities of the survey by the Research and Ethical Board for Health and train the health workers to promote ethical practices during data collection and generation of information.

- Ministry of Health should negotiate with the Ministry of Finance to allocate of a specific travel budgets for the AHS for districts to ensure adequate budgetary support.
- Introduce a one day pre-survey workshop for the health worker enumerators to orient or provide skills to conduct the survey.
- Institute and strengthen the supportive supervision network for the survey to increase the coverage and ensure door to door visits by the enumerators.
- Strengthen quality control measures by instituting mandatory supportive supervision net work and practices, internal quality checks, random sampling quality checks for field reports and filled forms to ensure better quality of data.
- Advocate including the AHS within the roles of the gups and local governance for social mobilization and better cooperation from the communities to reduce dropout rates for the survey and also to strengthen process of reporting birth and deaths events at the communities through the gups office to the health center.
- Make AHS tools flexible and include or exclude variables according to the need and priority of the information

Option two:

- The household information may be collected through population representative surveys conducted biennially to generate the health and vital statistic indicators of the country. This would provide the national picture at the lesser cost or same resource and minimize the time for data collection by the health workers, perhaps have the better data. However, the caveat would be a compromise on the rich of information of the catchment population of the district and the Basic Health Units that is regularly updated in the current system.

Conclusions

We are convinced that there is no easy and viable tradeoff for AHS. The necessity of the AHS for health sector cannot be overlooked. The debate is not what use the AHS serves, but how frequently to collect the data and how to improve the data collection, analysis and timely dissemination to aid for evidence based decision making for improvement of health system. With little corrective steps such as making AHS a high priority of the district health sector, and paying attention to strengthen the supervisory roles would indeed win half the battle. However, further dialogue is urgently necessary among the health professionals and policy makers to make any concrete decision on the way forward for the Household Surveys.

WATER AND SANITATION IN BHUTAN : What has been done and the challenges ahead

Dr. Deki Pelzom[5]

Water and Sanitation Problem Globally

Many of us the world over would not even think twice when we leave the water taps running but over one billion people worldwide are dying from lack of access to clean water and basic sanitation facilities. Access to clean water and proper sanitation is a major environmental problem leading to many water borne diseases such as typhoid, cholera, acute diarrhea, Hepatitis A, Rotavirus, Poliomyelitis etc.

At present, globally around 1.1 billion people don't have access to safe drinking water source. In Sub-Saharan Africa only 58% of the population have access to safe drinking water source. Sanitation is even worse with 2.6 billion people in the world living without proper sanitation. The lowest coverage are in the sub-Saharan Africa (36%) followed by South Asia (37%). The Millennium Development goal for water and sanitation states that the proportion of people without sustainable access to safe drinking water and basic sanitation should be halved by 2015 (1)

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Introduction to Bhutan

The access to water and sanitation in Bhutan is about 84.2% in 2005 which is the year when the first Population and Housing Census of Bhutan was carried out(2). Today, the coverage is about 88% (2). Bhutan is a small country in the great Himalayas with a total area of 38,394 sq km and a population of about 660,000. And, Bhutan follows a unique developmental philosophy called Gross National happiness (GNH) which necessitates the government to take a holistic approach to development through emphasis on the four pillars; promotion of equitable and sustainable socio-economic development, preservation and promotion of cultural values, conservation of the natural environment and establishment of good governance(3). Bhutan gives a lot of emphasis to the preservation of its environment and today Bhutan enjoys over 64% of forest coverage.

Water and Sanitation Development in Bhutan

Bhutan is a landlocked country which opened its doors to the outside world in the early 60s. It was only in 1974, the water supply sector started in Bhutan with the assistance of UNICEF to Bhutan. Since then the water supply coverage rose from 55% in 1990 to about 90% by 2007 (4). Bhutan has made tremendous stride in developing its

water and sanitation system in the country with the help of developmental partners such as the UNICEF, WHO/ SEARO, DANIDA, SNV etc. The vision statement as per the water policy of Bhutan is, "Water shall continue to be available in abundance to pursue socio-economic development in Bhutan. Present and future generations of Bhutanese people shall have assured access to adequate, safe and affordable water to maintain and enhance the quality of their lives"(5).

Water and Sanitation Programs

Bhutan has moved from almost primitive form of sanitation in the early 1960s to impressive current coverage of 88% since the introduction of Rural Water Supply and Sanitation (RWSS) program in the 70s. The objective of the program was to "improve the health of the rural population by reducing the incidence of water borne and related diseases through the provision of safe drinking water and promotion of basic sanitary latrines"(3). Water and sanitation programs in Bhutan can be classified into development of policies/ strategies; capacity building of professional staffs and communities; adoption of alternative technologies; monitoring and decentralization.

Under the policies and strategies, several key documents have been developed that clearly outlines the primary objective and focus of the rural water supply program such as the RWSS policy, water quality monitoring strategy and RWSS MIS – institutionalization strategy and implementation.

Under the capacity building, several trainings and workshops have been implemented to create awareness and build capacity within the communities themselves. These trainings have evolved over time to what is now the "community development for health (CDH) workshops" that is coordinated regularly by the Ministry of Health. Besides the CDH workshops, capacity building of the professional staffs has been given a lot of focus with both short and long term training being made available to key people involved in the implementation of the water and sanitation programs. International developmental partners have also been providing technical assistance to the RWSS program through the funding of experts to help the local staffs develop plans and implement them.

The government has been exploring alternative technologies aside from the conventional source of water to provide clean drinking water to the rural communities such as roof top rain water harvesting systems, electric pumping systems, etc. The Ministry of Health has developed a Management Information System (MIS) to monitor the RWS coverage throughout the country and at least one health worker in each Basic Health Unit (BHU) was trained in the MIS system.

In order to take the programs to the grass-root level as a part of inclusive development plans, all the rural water and sanitation programs are fully decentralized including the design of the RSW schemes in 2009-10. Thimphu and Phuentsholing, which are the two largest towns in Bhutan, have sewerage treatment systems that cover around 60% and 80% of the households in Thimphu

and Phuentsholing respectively. Those households not connected to the sewerage system have individually owned septic tanks. Besides this, water treatment is being carried out only in the urban areas. Some of the initiatives in this area have been the plan to have around 11 urban centres covered by mobile septic tank cleaning systems. Only Thimphu, the capital city has a solid waste management facility in the country(6)

Successes of the water and sanitation program in Bhutan

From about 55% of population with access to safe drinking water in 1990 to about 90% as of today, the accessibility to safe drinking water has grown rapidly. Bhutan has already achieved the Millennium Development Goal (MDG) with respect to "Halve, by 2015, the proportion of people without sustainable access to safe drinking water and sanitation"(7). Basic sanitation is understood as having access to a minimum facility of a pit latrine. From 33% of population with no access to basic sanitation facilities, today only 13% of the population doesn't have access to basic sanitation facilities. Even in this context, the MDG goal has been achieved well in time.

Awareness of the importance of safe water supply and basic sanitation has reached deep within the community and with the establishment of many Basic Health Units around the country, the water and sanitation related diseases are on the decline.

Challenges

Bhutan is applauded as a nation that has been quick to implement development programs and therefore moving quickly from a per capita income of 464.414 USD one of the poorest nation to a per-capita income of 1,437.356 USD in 2007, the highest in South Asia.

Regardless of these achievements, one of the biggest drawbacks of the water and sanitation program has been the overly focus on the physical coverage which might have lead to the degradation of the quality of the water and sanitation schemes and the sustainability of the schemes.

Another problem is that the 20% of the uncovered areas in Bhutan constitutes largely of the rural and remote areas, where establishment of basic water and sanitation facilities are very difficult due to harsh and rugged terrain. Since the poorest people live there, they are the hardest hit.

Recommendations on the water and sanitation program in Bhutan

With accessibility to safe water close to 90%, quality and sustainability of water and sanitation schemes must be given importance in order to avoid a reverse trend in the accessibility to safe water.

The programs should explore sustainable ways to enhance the provision services beyond basic water and sanitation facilities.

Ecological sanitation can be a very practical approach as agriculture based practices is widely dominant in rural Bhutan.

Furthermore, studies be carried out to see the correlation between water sanitation and hygiene practices with diseases which can serve as a basis for cost effective interventions.

Conclusion

It is evident from many studies that household water treatment and safe storage has significant health gains and better management of water resources can reduce the transmission of vector borne diseases and save lives. Thus, the WHO guideline for Drinking-Water Quality is being increasingly recognized. This can have both direct and indirect benefits, from the micro-level of households to the macro-perspective of national economies.

Universal water and sanitation coverage can be achieved only by accelerating the coverage of the uncovered areas. This would nevertheless be more expensive and difficult, given the nature of the rough terrains of Bhutan. The last mile, is always, the most difficult. Hence it is very important that the required support and thrust from the government is further intensified and that water and sanitation continues to receive attention it deserves from the national as well as from the developmental partners.

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THE TOILET REVOLUTION

Dr. Damber Kumar Nirola[6]

An article on "toilets" may seem a little weird but to think of it, toilets are actually important parts of our lives. Having worked as a primary health care professional for over a decade I had the opportunity to witness the slow but obvious "toilet revolution" that took place over the years. Bhutan's primary health care services have been applauded by the World Health Organization for its successful implementation of water and sanitation programme among many others. Toilets have become even more important today than ever before, especially so after the World Toilet Organization was established in 2001. This article is just a reminiscence of my own experience of graduating from the open field defecation to using the modern toilets.

Way back in the early sixties, when I was a child we didn't have a toilet in our house. In most villages we do not have toilets inside the houses even today, but at least we have sanitary latrines almost in every household. In those days when we didn't have the concept of toilets, we had to relieve ourselves on top of boulders, under trees or inside the bushes. My earliest recollection of a "toilet" (if I can call it), was of a relatively flat stone located some fifty feet away from our house which could accommodate at least three of us siblings at once. This stone was positioned in such a way that the faeces would fall directly from the edge to the slope below. At times a group of siblings would sit together gossiping and relieving themselves. In fact we would enjoy defecating together rather than 'solos'. Open defecation would be a problem only when it rained, firstly we would get soaked in the rain, and secondly we would fall prey to blood sucking leeches. Other problem was the stray mongrels which would appear behind us without warning to devour the fresh excreta, at times even offering to clean us up! It was not only children who defecated this way but even the adults would disappear inside thick bushes to relieve themselves.

Temporary pit latrine

I graduated to a slightly different type of toilet when I had to stay with one of my teachers in the village school. The teacher with whom I stayed was an Indian gentleman from Assam and he had made a makeshift type of toilet with shallow pit curtained with old gunny sacks. A few of the villagers later copied this type of toilet, and we also had one near our house later. "Gunny sack toilets" remained in vogue for some times to come. At least, this was the type of latrine we had in our village until much later.

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I came across a different type of toilet when I went to Trashigang in 1973 for my higher education. Most houses in the rural villages had pigs kept in the ground floors of their houses and there used to be a balcony type of projection for toilet right above where the pigs used to be. We later named this type of latrine as "hanging toilets". The faeces would drop straight down for the pigs to feed on. I wonder whether that was an innovative way of recycling food that was so scarce in that part of the country! On the contrary, because of that unhealthy practice, life cycle of tape worms was highly successful in infesting and making us anaemic. The gunny sack toilets had not reached the villages of Trashigang. Cleaning with water was virtually unknown even among the adults, and the most commonly used materials were stones, sticks and waste papers.

When I joined the Ministry of Health as a medical doctor in 1989, the sanitation in the rural villages had hardly changed. In spite of rapid growth of modern houses with attached toilets in the towns and cities, many villages were still either at the "open field" or the "hanging toilets" level. Even in towns and cities the few public toilets that are available remained blocked due to poor maintenance.

In 1991 when I became a district medical officer, I found out that one of the important public health activities in the districts was to improve sanitation. The health workers went around the villages teaching people to make simple pit type latrines to the more sophisticated pour flush types. They also made sure that people used them. There were people who just constructed for the sake of it and stocked their commodities in them. We had to take the help of the district administrators on our endeavour to achieve cent percent latrine coverage as this had become a very important indicator for public health achievement. We also went around in the villages educating people about the bad effect of keeping animals in the ground floor of houses. We urged them to make separate sheds for animals and told them not to use the old 'hanging toilets' which sent stools flying all the way down. Our efforts paid off, and by 2000 we had succeeded in achieving almost 100% latrine coverage.

Looking back, I can see the evolution of toilets from the open fields to gunny sack structures to simple pits to ventilated pits to pour flush to water closet, and the most recent western type of commodes, as a real "toilet revolution". In spite of such progress, at the end of the day we still find our public toilets unsanitary and unusable; I wonder whether we are slipping back in time! Or have we failed to evolve along with our toilets?

WE LOST HER*

Sha Bdr. Diyalee[7]

It was in 1993, the first year of my posting at Paro hospital after graduating as Health Assistant from the Royal Institute of Health Sciences (RIHS). At that time, Paro hospital was housed in a residential building and was staffed by 2 Doctors 5 nurses (ANM & AN) 1 compounder, and 1 Health Assistant.

One day, just after my arrival at the outreach clinic in Shaba, I got an urgent call from the doctor asking me to send ambulance required for evacuation of a patient to JDWNRH, Thimphu. I sent back the ambulance immediately.

After returning to Paro hospital around 5 pm from Shaba that evening, to my utter surprise, I found the ambulance parked in Paro.

The shopkeeper, for whom the ambulance had been requested, had two wives who were sisters. The elder wife was expecting her 4th baby. Yes, the good news was that she had given birth to baby boy at about 2 a.m. However, the happy moment was short-lived. There was tension and confusion among family members and well wishers as she had not delivered the placenta. They waited anxiously and hoped that rim do and other traditional offerings would solve the problem.

When all their efforts had gone in vain, after 8 hours of delivery, they consulted Paro hospital. Upon our arrival, I had observed that the family members and visitors were nervous and uttering prayers for her recovery. I had also learned that the medical doctor from Paro hospital had earlier attended the patient at her residence since their local beliefs prohibited her to be taken outside of her residence under such a condition. .

The medical team repeatedly tried to convince the family members regarding the urgent need for expert care at the National Referral Hospital. But their beliefs were so strong that it took many hours for the family members to consent to referral.

I was ordered to escort her and to take care of the intravenous line during the transport. At 5.30 PM I was in the ambulance with a very pale looking patient due to post partum haemorrhage. She was a nice shopkeeper, frank and friendly to all with always smiling face. That day that charm was missing on her face. I was sitting beside her with her husband near me affectionately embracing his newborn baby.. We were worried and nervous. Our driver drove swiftly but cautiously. Despite that, it seemed to me that the distance between Paro and Thimphu had increased manifold. After crossing the confluence (chuzom)-, in her feeble voice she asked me in Dzongkha- *"Doctor lopen, Menkha haene gademche ye" Haedo la- datara haeu la- amm achi repdem*

7 *Sha Bdr. Diyalee is working as senior Health Assistant in Gongdara BHU, Sarpang Dzongkhag*

** The article is minimally edited to maintain originality.*

tupga la! I replied. After a pause – she looked for her husband – *appa! Alu gadebey yoe la – lesembera yoe! Choe achi repdem may! Menkha haene baydo*. Alu dazen bay may- appa! After that short conversation, she calmly lay on the stretcher in the moving Ambulance. The baby cried regardless of repeated efforts by the father to comfort the baby. The nervous father kept staring at his wife and uttered *"Om mani pame hu"* not forgetting to ask me his wife's condition every now and then. I was very nervous as I never had such an experience earlier. Her grasp on my wrist became harder and harder. She looked as if in deep sleep, not even disturbed by the loud cry of her 17 hour old baby son. Her husband who was constantly watching her, almost without a blink, called by her name ..... but there was no response

I slowly released her grasp from my wrist and asked the driver to drive faster in order to at least reach the Army Hospital in Lungtenphu which is nearer by about 6 kilometers. At the Army hospital, I quickly gave a brief history and showed the referral letter. The doctor on duty at the Army Hospital promptly attended to the patient and after through check-up, the doctor declared her dead.

I was breathless and wondered why were we so late to reach her to expert medical care where she could have been easily managed and her death prevented? We lost her for forever. Her husband, drawn in tears, with the head of his dead wife on his lap requested her to return, and reminded her about their new born baby and other children at home but there was no response This was a tragedy that could have been easily averted. I could not control my emotions and wept hiding. At that moment I realized that " *life is like a flower*" which blossoms for short time and goes back to earth to nourish its mother plant.

Though, not willing to believe that his wife was dead, we convinced and helped him to take back the body to his home by the same ambulance.

That incidence motivated me strong enough not to waste time and take every opportunity to impart knowledge and educate the innocent and illiterate people in the villages. In all the places I have worked since then, one of the topics for health education had always been on antenatal care and institutional deliveries or at least on trained deliveries. I thank *kencho sum* that I have not come across any maternal deaths from all 10 BHUs during my 27 year tenure.

Though we have come far in terms of helping pregnant mothers and preventing the deaths from pregnancy related cause but some pockets of our communities are still engulfed by taboos and local beliefs that hinder them to take the right decision at the right time.

One of the reasons that can be attributed to the demise of the above mother was one of the 3 delays i.e. 1. Delay in deciding to avail medial help. 2. Delay in reaching the appropriate health centers. 3. Delay in receiving the medical care.

So to break the chain of superstitions, our communities should be vigorously made aware and educated on the consequence of untrained and unsafe deliveries. For the welfare and betterment of the expecting mother and for other female related health problems, recruitment of female health worker to all the BHUs would be necessary since our communities are still reluctant to come forward and consult male health workers about their health and problems.

HOLISTIC HEALTH

Diki Wangmo[8]

What is Holistic Health?

Holism is derived from a Greek word which means health, entire or whole (Nurse's Handbook, 1999). Holism has become the new health paradigm for the 21st century and everyone everywhere is striving to understand what this is all about. The prevalence of use of holistic health care practices in the United States has been growing tremendously through the past several years and articles on alternative medicine and holistic health have appeared in newspapers, magazines, and even in mainstream medical journals (Carney, 2000). Throughout history, cultures have adopted a variety of explanations and philosophies in the continuing quest for health. Illness has been attributed to evil spirits and divine retribution and not just physical injury and trauma alone (Brown, 2003). Holistic Health is an approach to achieve maximum wellbeing by considering the whole person and how he or she interacts with his or her environment rather than focussing on illness and specific parts of the body. It emphasizes the connection of mind, body and spirit (Walter, 2003). With Holistic Health, people accept responsibility for their own level of wellbeing, and everyday choices are used to take charge of one's own health.

The holistic approach takes the broadest possible view of illness and disease, identifying multiple external as well as internal causes and offering multi-dimensional "healing," as opposed to specific "cures." It is as concerned with one's tendency towards disease as it is with its transmission. The holistic health views that about 80% of our modern health complaints like stress, and behavioral disorders can be managed by natural, holistic self-care methods rather than by drug which could lead to dependence, side effects, and expensive, hi-tech interventions (Brown, 2003). The essential thing is to understand that your body knows how to be well, given the proper support. Holistic Health takes into account one's body, mind, emotions, and spiritual life. It combines the best of modern scientific diagnosis and monitoring techniques with both ancient and innovative health promotion methods which include natural diet and herbal remedies, nutritional supplements, exercise, relaxation, psycho-spiritual counseling, meditation, breathing exercises, tai chi, yoga and other self-regulatory practices. It addresses not only symptoms, but the entire person, and his or her current life predicament, including family, job, and social and religious life. It emphasizes on disease prevention, health maintenance, high-level wellness and longevity. It views the client as an active participant in the healing process and not simply a passive recipient of "health care."

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The Basic Principles of Holistic Health

Holistic Health is based on the principle that an individual is a whole made up of interdependent parts, which are the physical, mental, emotional and spiritual, which is constantly interacting with everything in the surrounding environment. When one part is not working at its best, it impacts all of the other parts of that person (Walter, 2003). The principles of Holistic Health state that health is more than just not being sick. It is an ongoing process, always aiming to improve the level of wellbeing

How Holistic Health Is Practiced

While preventing illness is important, Holistic Health focuses on reaching higher levels of wellness. It encourages people to constantly explore, which everyday actions work for them and discover what is appropriate to move them toward maximum wellbeing. People are encouraged and motivated to be the caretakers of their own health and wellbeing. However when disease and chronic conditions do occur, the term is usually changed to holistic medicine, and additional factors are added (Walters, 2003). Treatments that support the body's natural healing system are recommended and the whole person and the whole situation are taken into consideration.

The Benefits of Holistic Health for all Bhutanese

According to a survey conducted by the Health Ministry in the capital (Kuensel 15 December, 2009) non-communicable diseases account for one of the major health problems in the country and that more than half the urban Bhutanese population is overweight and about 12 percent obese.

Holistic Health sees health and well-being from the perspective of maintaining a healthy body and lifestyle in order to help prevent illness. People enjoy the vitality and wellbeing that results from their positive lifestyle changes and are motivated to continue this process throughout their lives (Walters, 2003).

Set back

Although very important, holistic health is a phenomenon that still needs to be explored further. The subjective nature of it makes it very difficult to assess. To assess aspects such as psychological, mental, emotional, socioeconomic and spiritual health one must really spend adequate time with the clients and observe and understand their behavior and activities. Assessing these aspects by interview alone may not be adequate, as what they say may not be always what they practice.

In most cases, people realize the importance of holistic health and healthful living only when they are in a crisis or faced with crisis. Therefore, there is a need to create awareness about holistic health so that people do not have to wait for crisis to find out about it. As they say "prevention is always better than cure."

Conclusion

The U.S. Centers for Disease Control and Prevention report that the key factors influencing an individual's state of health have not changed significantly over the past 20 years. The biggest factors still are everyday lifestyle choices which account for 53% (Walters, 2003). This indicates that the decisions people make about their life and habits are, therefore, by far the largest factor in determining their state of wellbeing.

So our quality of life, as we can see, is determined by the various choices that we make everyday. Health is in our hand, all we have to do is know how to handle it. Although the concept of holistic health is difficult to understand, the importance of it cannot be ignored. With the modern day stress and strain of life and the emergence of behavior and lifestyle related illnesses, now more than ever, people are turning towards complementary therapy and the achievement and maintenance of holistic health.

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Routine reports

Health Information is essential for public health action. It provides data for evidence based decision making enabling planners, managers and policymakers with the required tool.

Bhutan Health Management Information System (BHMIS) has been collecting data on routine health activities, morbidity and mortality from the health facilities. By the end of every month, all the health facilities are mandated to submit the report on activities they had undertaken during the month. The data furnished in the annexure tables are compilation of these reports which are routinely collected by the BHMIS from the Dzongkhags.

Table 1 Antenatal care attendance 2009

S#	District	ANC attendances			
		1st visit	2nd visit	3rd visit	4+ visit
1	Bumthang	350	303	261	360
2	Chukha	1450	1408	1445	2745
3	Dagana	411	361	303	311
4	Gasa	55	57	41	39
5	Haa	275	254	199	168
6	Lhuntse	263	240	214	352
7	Mongar	905	766	691	945
8	Paro	815	752	684	1133
9	Pemagatshel	421	371	342	463
10	Punakha	574	551	515	802
11	Samdrupjongkhar	669	614	514	717
12	Samtse	1136	1104	1085	1893
13	Sarpang	733	730	735	1201
14	Thimphu	2536	2484	2358	4360
15	Trashigang	864	785	656	840
16	Trashiyangtse	412	326	278	421
17	Trongsa	255	216	194	221
18	Tsirang	321	291	250	245
19	Wangdue Phodrang	653	626	510	474
20	Zhemgang	363	315	281	325
Total		13461	12554	11556	18015

Table 2 Deliveries attended by trained health personnel 2009

Sl No.	District	Deliveries Attended			Forceps Vaccum deliveries	Total Deliveries as per household survey 2009
		Home	Facility	Total		
1	Bumthang	48	123	171	1	298
2	Chukha	36	1043	1079	10	898
3	Dagana	24	104	128	126	450
4	Gasa	14	2	16	0	67
5	Haa	49	87	136	0	215
6	Lhuntse	23	122	145	49	380
7	Mongar	88	680	768	0	880
8	Paro	7	508	515	6	588
9	Pemagatshel	49	103	152	12	365
10	Punakha	40	318	358	0	343
11	Samdrupjongkhar	105	314	419	9	465
12	Samtse	18	412	430	8	1154
13	Sarpang	18	680	698	16	658
14	Thimphu	10	2649	2659	0	3791
15	Trashigang	109	358	467	31	869
16	Trashiyangtse	16	84	100	7	399
17	Trongsa	21	66	87	0	244
18	Tsirang	16	213	229	0	268
19	Wangdue Phodrang	106	203	309	0	653
20	Zhemgang	81	64	145	0	377
Total		**878**	**8133**	**9011**	**274**	**13362**

Table 3 Nutritional status of children attending clinics 2009

Sl. No.	District	Child attendances				Total	Weight			*Vit A*
		Infants < 1year		1 - 4 years						
		New	Old	New	Old		Over	Normal	Under	
1	Bumthang	279	2974	39	2894	6186	738	5158	281	418
2	Chukha	1371	10749	11	7605	19736	1266	17166	1064	1705
3	Dagana	339	3559	49	3406	7353	458	6055	906	523
4	Gasa	45	432	21	344	842	76	674	71	142
5	Haa	356	1884	375	2177	4792	134	3397	322	218
6	Lhuntse	248	2455	4	3160	5867	944	3961	634	440
7	Mongar	1077	7562	29	9369	18037	1683	14341	1660	1233
8	Paro	633	5419	94	4193	10339	728	8552	367	1590
9	Pemagatshel	494	3765	79	4720	9058	758	7456	913	585
10	Punakha	397	3262	50	2102	5811	640	5016	266	396
11	Samdrupjongkhar	727	5124	13	4787	10651	843	8444	877	1033
12	Samtse	971	7701	30	6548	15250	511	13095	1644	1384
13	Sarpang	916	6029	11	4705	11661	1116	9643	938	1057
14	Thimphu	3841	20188	36	8317	32382	1124	29671	1547	3511
15	Trashigang	921	7262	154	7034	15371	899	13020	1452	955
16	Trashiyangtse	334	3160	8	3138	6640	790	5079	840	599
17	Trongsa	211	2030	110	1706	4057	436	3125	282	308
18	Tsirang	311	3447	19	2854	6631	578	5291	748	650
19	Wangdue Phodrang	479	4793	63	3655	8990	478	7989	536	860
20	Zhemgang	348	2785	62	2903	6098	949	4328	808	582
Total		**14298**	**104580**	**1257**	**85617**	**205752**	**15149**	**171461**	**16156**	**18189**

Table 4

Vaccine administered 2009

Sl. No.	District	Antigen				
		BCG	Measles	OPV3	DPT-Hep B	OPV 0
1	Bumthang	263	337	361	361	204
2	Chukha	1374	1392	1479	1479	1199
3	Dagana	332	483	444	444	278
4	Gasa	28	73	63	63	13
5	Haa	135	222	204	211	155
6	Lhuntse	233	335	323	309	230
7	Mongar	1039	877	845	848	934
8	Paro	643	717	691	691	625
9	Pemagatshel	380	424	406	407	287
10	Punakha	374	478	466	480	355
11	Samdrupjongkhar	715	879	687	690	563
12	Samtse	938	1187	1189	1204	824
13	Sarpang	865	736	739	739	801
14	Thimphu	3736	2378	2416	2414	3767
15	Trashigang	884	915	904	904	715
16	Trashiyangtse	327	390	378	378	311
17	Trongsa	190	272	265	267	180
18	Tsirang	288	403	373	409	263
19	Wangdue Phodrang	489	702	707	709	407
20	Zhemgang	286	381	379	375	201
Total		**13519**	**13581**	**13319**	**13382**	**12312**

Table 5

Family planning method 2009

Sl. No.	District	New IUD Inserted	Oral pills		DMPA		Male sterilisation	Female sterilisation	Condom in pieces
			No. of Cycles	No. of users	No. Injected	No. of users			
1	Bumthang	17	1934	149	2317	579	89	45	73846
2	Chukha	216	4425	340	7967	1992	825	274	144403
3	Dagana	3	2884	222	3662	916	682	128	56930
4	Gasa	11	206	16	476	119	21	14	10026
5	Haa	6	784	60	1604	401	246	192	28346
6	Lhuntse	43	949	73	2342	586	362	60	62363
7	Mongar	92	1912	147	6765	1691	745	323	251912
8	Paro	53	1757	135	3385	846	611	527	70412
9	Pemagatshel	34	1111	85	1812	453	190	21	33656
10	Punakha	75	2198	169	2589	647	181	126	43503
11	Samdrupjongkhar	32	2977	229	4052	1013	169	36	41674
12	Samtse	27	6444	496	6207	1552	2299	472	75704
13	Sarpang	49	3677	283	6261	1565	572	239	65020
14	Thimphu	1508	3566	274	8875	2219	259	244	157934
15	Trashigang	83	2760	212	6121	1530	839	104	88649
16	Trashiyangtse	31	525	40	1565	391	335	55	64804
17	Trongsa	9	909	70	1716	429	150	44	29899
18	Tsirang	10	2766	213	4085	1021	395	94	23655
19	Wangdue Phodrang	26	860	66	1400	350	599	156	52501
20	Zhemgang	18	1999	154	2798	700	161	65	51189
	Total	**2343**	**44643**	3434	**75999**	**19000**	**9730**	**3219**	1426426

Users:

Oral pills = 1 user is equal to 13 cycles
DMPA = 1 user is equal to 4 injections

Table 6

Hospital admission & average length of stay 2009

S l. No.	District	Hospital Admissions			BHU Admission
		Total	Patient days	Average days	
1	Bumthang	767	2178	2.8	15
2	Chukha	5763	10350	1.8	163
3	Dagana	169	449	2.7	182
4	Gasa	0	0	0.0	27
5	Haa	540	1290	2.4	0
6	Lhuntse	813	4011	4.9	160
7	Mongar	3392	23253	6.9	913
8	Paro	2932	8098	2.8	48
9	Pemagatshel	999	3389	3.4	306
10	Punakha	2036	8034	3.9	178
11	Samdrupjongkhar	1915	11159	5.8	268
12	Samtse	3213	16076	5.0	481
13	Sarpang	4208	17853	4.2	332
14	Thimphu	12522	88269	7.0	8
15	Trashigang	3524	15232	4.3	508
16	Trashiyangtse	664	3572	5.4	202
17	Trongsa	526	1728	3.3	44
18	Tsirang	873	2434	2.8	155
19	Wangdue Phodrang	1344	4640	3.5	296
20	Zhemgang	1350	5273	3.9	108
Total		**47550**	**227288**	**4.8**	**4394**

Table 7

Laboratory service provision by dzongkhag 2009

Sl. No.	District	Haemoglobin Levels	Blood grouping	Malaria slides	TB Sputum	Urine	Stool	HIV	Total
1	Bumthang	2610	950	90	140	2609	33	556	6182
2	Chukha	22426	5777	10588	1196	15107	502	1905	64817
3	Dagana	2556	811	2805	99	3821	38	468	19604
4	Gasa	165	56	0	12	145	0	24	536
5	Haa	2780	1383	222	98	7546	448	414	16558
6	Lhuntse	1357	666	35	71	3771	56	204	8267
7	Mongar	9085	9991	361	1219	7955	685	1709	30464
8	Paro	2924	1276	237	843	5104	80	835	17817
9	Pemagatshel	1746	1552	467	90	3177	40	592	11918
10	Punakha	3838	1654	289	376	4761	85	1098	12117
11	Samdrupjongkhar	4023	1445	7266	789	6823	162	508	21742
12	Samtse	8942	3257	9840	741	7639	218	1248	40071
13	Sarpang	9448	3194	22289	921	13241	611	1500	112714
14	Thimphu	41929	27652	5445	2011	53994	3027	7416	682088
15	Trashigang	4793	4023	225	331	8466	188	832	22362
16	Trashiyangtse	1582	790	73	91	1785	27	248	4361
17	Trongsa	1347	687	81	73	1038	106	283	8136
18	Tsirang	2933	1360	1803	84	1512	57	528	8248
19	Wangdue Phodrang	4692	1332	510	155	4043	127	718	12809
20	Zhemgang	2653	589	2620	204	3436	124	217	15594
Total		131829	68445	65246	9544	155973	6614	21303	1116405

Table 8

Surgeries by districts 2009

Sl. No.	District	Caesarian section	General abdominal	General others	Orthopaedic extremities	Orthopaedic Others	Gynae-cology	ENT	Eye
1	Bumthang	0	0	0	0	0	0	0	22
2	Chukha	166	241	146	419	235	95	26	3
3	Dagana	0	0	0	0	0	0	0	0
4	Gasa	0	0	0	0	0	0	0	0
5	Haa	7	176	871	0	7	11	0	0
6	Lhuntse	0	1	47	0	0	1	0	7
7	Mongar	183	145	211	341	10	270	45	91
8	Paro	10	16	42	0	9	26	0	0
9	Pemagatshel	0	0	15	0	17	0	0	0
10	Punakha	3	2	21	0	1	3	0	27
11	Samdrupjongkhar	71	44	1300	174	51	74	7	0
12	Samtse	8	124	745	51	177	13	180	713
13	Sarpang	139	57	261	18	17	108	15	53
14	Thimphu	721	933	657	657	0	740	265	785
15	Trashigang	89	24	128	7	4	37	0	12
16	Trashiyangtse	0	0	0	0	0	0	0	10
17	Trongsa	0	0	65	0	0	1	0	12
18	Tsriang	0	0	0	0	0	0	0	0
19	Wangdue Phodrang	0	1	781	0	180	0	170	146
20	Zhemgang	0	4	48	11	7	2	0	0
	Total	1397	1768	5338	1678	715	1381	708	1881

Table 9

Diagnostic services 2009

Sl. No.	District	X-ray			Ultrasound		
		Chest	Extremities	Others	Gyn/Obs	Abdomen	Others
1	Bumthang	361	338	172	53	13	16
2	Chukha	2913	1816	1041	2938	2469	1244
3	Dagana	0	0	0	0	0	0
4	Gasa	0	0	0	0	0	0
5	Haa	419	503	183	477	219	52
6	Lhuntse	277	147	131	0	239	4
7	Mongar	1900	1050	1003	1908	1331	91
8	Paro	812	725	510	1290	543	182
9	Pemagatshel	73	50	61	32	31	0
10	Punakha	556	413	154	2188	1222	27
11	Samdrupjongkhar	652	419	243	672	491	416
12	Samtse	1447	986	863	4	0	0
13	Sarpang	1696	988	800	1981	1373	127
14	Thimphu	11307	8152	4812	7440	9274	899
15	Trashigang	997	336	260	2149	577	31
16	Trashiyangtse	210	99	76	5	0	0
17	Trongsa	133	100	49	0	0	0
18	Tsirang	55	67	21	555	378	41
19	Wangdue Phodrang	442	479	464	557	369	189
20	Zhemgang	420	281	206	0	0	0
	Total	24670	16949	11049	22249	18529	3319

Table 10

Dental services 2009

Sl. No.	District	Dental Services				
		Prophylaxis	Scaling	Fillings	Extractions	Others
1	Bumthang	25	0	351	665	651
2	Chukha	145	77	2842	3345	4140
3	Dagana	21	2	302	297	569
4	Gasa	0	0	0	0	0
5	Haa	627	343	1115	1319	1087
6	Lhuntse	21	3	469	294	371
7	Mongar	169	38	1134	1579	2109
8	Paro	80	15	2032	1527	2664
9	Pemagatshel	39	6	383	443	283
10	Punakha	313	11	723	1083	1451
11	Samdrupjongkhar	234	12	343	771	504
12	Samtse	223	0	672	968	1359
13	Sarpang	69	4	3008	2195	6073
14	Thimphu	1160	455	7702	11281	15524
15	Trashigang	38	33	1191	2214	1732
16	Trashiyangtse	11	0	263	471	465
17	Trongsa	56	4	248	381	534
18	Tsirang	37	2	956	660	1093
19	Wangdue Phodrang	22	12	901	782	618
20	Zhemgang	12	2	66	83	83
Total		3302	1019	24701	30358	41310

Table 11

Sanitation & hygiene 2009

Sl. No.	District	Percentage						
		Latrine	water supply	HH with Functional Piped water	drainage & Footpath	HH with Animal shed	HH with vegetable garden	HH with garbage pit
1	Bumthang	99.8	99.8	99.7	61.2	92.4	88.6	92.9
2	Chukha	88.6	77.9	73.5	58.6	85.2	60.5	74.6
3	Dagana	90.4	73.8	67.4	42.8	84.7	79.0	79.0
4	Gasa	89.0	48.4	36.6	37.1	75.2	90.9	83.9
5	Haa	93.8	93.9	93.8	79.6	72.6	72.9	84.9
6	Lhuntse	99.8	92.6	90.2	67.1	76.0	93.3	79.0
7	Mongar	95.1	91.4	87.4	60.1	93.0	77.2	86.6
8	Paro	94.6	91.0	87.1	67.1	83.2	64.1	55.5
9	Pemagatshel	93.2	87.4	79.7	40.5	68.9	87.6	70.7
10	Punakha	94.6	92.8	89.8	53.3	93.4	75.0	91.6
11	Samdrupjongkhar	92.7	91.0	90.1	49.1	79.2	86.9	79.4
12	Samtse	91.2	76.3	72.3	46.4	89.3	74.1	76.2
13	Sarpang	91.8	85.1	77.8	51.4	84.0	69.2	68.1
14	Thimphu	96.5	96.0	95.5	84.7	100.0	72.5	38.0
15	Trashigang	77.0	72.9	68.8	41.0	89.3	69.1	56.7
16	Trashiyangtse	89.8	96.0	87.0	57.0	86.5	86.9	73.5
17	Trongsa	90.9	90.0	84.4	59.8	89.6	63.7	61.3
18	Tsirang	90.6	89.9	89.5	36.4	79.8	93.5	79.7
19	Wangdue Phodrang	93.8	80.0	75.6	67.8	86.8	79.3	87.5
20	Zhemgang	94.3	92.1	84.3	64.2	59.3	80.3	66.4
	Total	91.0	84.5	80.1	54.2	84.9	75.5	73.1

Table 12

Population with impairment 2009

Sl. No.	District	Impairment Types							
		Physical	Sought medical Assistant	Speech	Sought medical Assistant	Hearing	Sought medical Assistant	Visual	Sought medical Assistant
1	Bumthang	34	24	38	22	83	52	94	68
2	Chukha	97	48	231	37	308	58	119	52
3	Dagana	90	40	181	36	183	49	75	38
4	Gasa	5	4	13	4	32	16	33	20
5	Haa	19	8	18	3	60	19	49	25
6	Lhuntse	49	15	43	17	60	18	39	17
7	Mongar	114	77	187	56	228	64	145	79
8	Paro	71	67	124	95	194	144	114	101
9	Pemagatshel	35	11	99	0	165	26	132	35
10	Punakha	47	26	62	15	86	39	59	36
11	Samdrupjongkhar	62	13	146	22	159	18	36	6
12	Samtse	184	79	394	101	459	142	112	39
13	Sarpang	78	47	118	47	152	69	97	50
14	Thimphu	27	20	25	12	37	21	24	17
15	Trashigang	162	139	184	122	262	192	167	136
16	Trashiyangtse	65	17	99	16	177	46	81	33
17	Trongsa	45	27	32	29	51	49	33	20
18	Tsirang	53	45	108	67	150	128	130	111
19	Wangdue Phodrang	66	31	95	19	128	34	117	50
20	Zhemgang	83	36	130	36	171	75	102	66
	Total	**1386**	**774**	**2327**	**756**	**3145**	**1259**	**1758**	**999**

Table 13

Facility wise selected services 2009

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
Bumthang															
1	Bumthang Hospital	20	116	150	214	214	194	930	1151	107	41	65	1418	1418	3
2	Chokor BHU	5	1	12	18	18	12	37	171	0	1	0	94	93	0
3	Chumey BHU	6	4	46	53	53	53	405	545	0	0	0	550	550	0
4	Tang BHU	11	0	34	43	43	40	28	267	0	3	24	316	316	0
5	Ura BHU	6	2	21	33	33	38	534	183	2	0	0	305	306	0
Chukha															
6	Baikunza BHU	0	0	4	7	7	2	41	38	0	0	0	58	57	55
7	Bongo BHU	7	3	15	26	26	20	94	128	1	6	29	212	184	4
8	Chapchha BHU	2	6	28	40	40	39	88	155	24	16	49	308	289	28
9	Chongekha BHU	0	4	8	27	27	55	418	362	7	17	75	279	97	31
10	Chukha BHU I	0	32	69	106	106	97	343	528	31	64	95	1008	1000	7
11	Dungna BHU	0	3	51	50	50	57	168	129	0	1	86	279	252	16
12	Gedu Hospital	0	108	154	211	211	190	876	1207	28	57	48	1174	1160	59
13	Getana BHU	3	0	24	27	27	26	94	133	0	0	43	51	87	72
14	Lokchina BHU	12	16	23	24	24	22	38	88	2	0	96	227	225	0
15	Phuntsholing Hospital	11	783	887	804	804	720	856	3769	38	49	185	1268	1146	29

Facility wise selected services 2009

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
16	Tala BHU	1	32	28	63	63	66	660	627	6	31	79	844	441	0
17	Tashigatshel RBAP MI room	0	0	0	0	0	0	110	214	5	10	4	160	140	20
18	Tsimalakha Hospital	0	56	83	94	94	98	639	589	15	23	36	678	673	4
Dagana															
19	Akhochin BHU	3	6	24	23	23	26	34	253	1	2	80	226	197	0
20	Dagana BHU I	0	19	42	63	63	81	294	411	3	6	78	438	329	0
21	Dagapela BHU	12	41	118	145	145	159	1051	1064	0	37	168	1014	835	86
22	Drujegang BHU	1	10	36	53	53	37	468	461	9	8	44	487	308	71
23	Jurugang BHU	2	2	10	13	13	22	170	172	1	2	38	138	93	14
24	Khagochin BHU	1	0	31	38	38	34	158	281	18	10	89	386	209	48
25	Lajab BHU	3	4	10	21	21	21	187	152	1	3	27	158	150	3
26	Lhamoyzingkha BHU I	0	18	41	63	63	75	171	453	0	54	112	650	671	45
27	Tshangkha BHU	2	4	20	25	25	28	351	415	7	6	46	274	287	0
Gasa															
28	Damji BHU	2	0	6	19	19	20	8	104	4	11	16	186	186	1
29	Gasa BHU	1	1	4	17	17	21	119	67	3	3	5	121	114	0
30	Laya BHU	7	1	18	17	17	14	10	118	0	0	0	117	0	73

Facility wise selected services 2009

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
31	Lungnana BHU	4	0	0	10	10	18	69	187	0	0	0	133	3	0
Haa															
32	Bali BHU I	0	39	107	109	129	145	455	876	34	130	163	1009	995	2
33	Dorithasa BHU	1	0	0	15	15	18	117	152	0	8	30	158	141	0
34	Haa Imtrat Hospital	40	27	5	14	6	0	7	0						
35	Sangbekha BHU	0	0	3	18	13	11	4	87	0	1	0	113	140	0
36	Yangthang BHU	8	21	20	48	48	48	201	489	8	53	53	559	565	0
Lhuentse															
37	Autsho BHU	0	12	14	25	25	18	119	167	1	4	12	317	135	0
38	Dungkhar BHU	5	3	18	22	22	24	92	144	3	1	35	146	158	0
39	Gorsum BHU	1	3	12	21	21	29	39	117	0	3	14	161	196	46
40	Khoma BHU	1	7	23	30	30	33	79	274	0	3	18	264	287	0
41	Ladrong BHU	3	5	13	30	27	29	12	36	0	0	35	161	145	0
42	Lhuntse Hospital	0	71	72	73	73	68	232	535	18	28	54	594	531	4
43	Menji BHU	2	4	13	12	12	17	48	275	1	3	19	205	199	17
44	Ney BHU	3	0	5	19	9	9	24	22	0	0	18	54	60	0
45	Patpachhu BHU	7	4	16	22	22	17	159	182	0	2	51	248	233	0
46	Tangmachhu BHU	0	3	24	44	43	59	115	448	6	12	28	408	402	0

Facility wise selected services 2009

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
47	Tsenkhar BHU	0	7	12	16	16	15	17	105	4	3	54	158	169	0
48	Zangkhar BHU	1	3	11	9	9	17	13	37	0	1	24	85	85	0
Mongar															
49	Balam BHU	7	4	19	22	25	25	27	270	5	4	86	193	188	0
50	Banjar BHU	1	1	3	6	6	6	13	46	2	2	27	106	95	0
51	Bumpazor BHU	3	7	18	27	27	52	40	213	31	7	22	212	216	1
52	Challi BHU	3	5	15	21	21	17	55	255	21	12	13	262	262	0
53	Chaskhar BHU	2	12	44	63	63	69	218	495	27	15	63	444	466	90
54	Dagsa BHU	4	1	11	18	18	22	132	87	2	4	3	167	166	25
55	Drametse BHU	7	15	76	61	61	59	52	464	7	8	48	438	410	104
56	Ganglapong BHU	0	0	1	2	2	3	10	24						
57	Gyalposhing BHU I	0	31	46	79	79	68	94	308	11	48	18	448	444	0
58	Junmey BHU	2	8	40	34	34	31	38	276	0	0	8	220	169	0
59	Kengkhar BHU	10	2	19	31	31	19	144	450	10	2	0	370	308	2
60	Lingmethang BHU	2	21	57	78	78	80	157	473	23	23	94	524	522	18
61	Mongar Hospital	0	500	501	177	177	182	346	1006	134	135	94	1421	1415	6
62	Muhung BHU	2	2	3	7	7	8	14	26						
63	Nagor BHU	5	3	16	23	23	20	15	207	0	0	0	260	268	4
64	Narang BHU	21	2	34	29	29	32	26	178	2	4	24	188	174	0

Facility wise selected services 2009

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
65	Ngatshang BHU	3	6	17	18	18	16	45	152	26	13	26	185	179	4
66	Serzhong BHU	6	20	23	25	25	27	120	295	8	11	76	324	293	6
67	Silambi BHU	0	0	2	2	2	8	21	122						
68	Tahambi BHU	1	0	1	1	1	6	1	87						
69	Thangrong BHU	1	11	34	40	40	45	38	629	29	9	64	350	322	0
70	Tongla BHU	1	0	6	2	2	8	10	66						
71	Tsakaling BHU	3	6	11	16	16	26	120	327	21	7	32	338	297	22
72	Tsamang BHU	1	4	12	20	20	20	19	71	0	3	24	99	79	6
73	Yadi BHU	3	13	21	23	23	16	74	122	34	16	21	189	189	0
74	Yangbari BHU I	0	6	9	20	20	12	83	116	0	0	2	86	95	1
Paro															
75	Bitekha BHU	5	32	42	59	59	58	68	202	5	23	108	498	492	78
76	Dawakha BHU	1	8	18	43	43	48	33	120	15	42	46	368	369	2
77	Drukgyel BHU	1	7	44	85	85	110	512	712	74	105	80	1359	1294	62
78	Paro Hospital	0	461	539	504	504	501	1144	2351	188	357	377	3535	3389	97
Pemagatshel															
79	Chhimung BHU	1	3	8	10	10	14	8	59	0	0	41	162	139	24
80	Chokorling BHU	1	1	3	5	5	5	14	56	0	0	0	135	149	0
81	Dechheling BHU	6	5	21	29	29	35	68	105	14	0	0	507	333	55

Facility wise selected services 2009

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
82	Dungmin BHU	4	1	8	8	7	10	28	166	0	0	0	217	212	22
83	Gonpa Singma BHU	4	0	23	27	27	24	153	120	3	0	0	249	234	21
84	Nanong BHU	4	2	27	30	30	33	12	22	0	0	0	335	330	57
85	Nganglam BHU I	0	0	60	74	74	76	29	84	36	6	73	644	500	0
86	Norbugang BHU	2	0	12	6	7	11	3	26	0	0	7	151	124	124
87	Pemagatshel Hospital	0	83	135	133	133	150	656	568	3	15	66	1182	1184	41
88	Thrumchung BHU	14	1	17	15	15	13	22	158	0	0	0	138	163	10
89	Tshatse BHU	2	0	24	15	16	16	29	172	0	0	0	213	172	9
90	Tshebar BHU	6	5	18	22	22	17	34	127	0	0	3	191	232	4
91	Yurung BHU	5	2	24	32	32	20	55	149	0	0	0	336	408	0
Punakha															
92	Kabisa BHU	13	5	29	49	49	51	199	274	0	20	21	505	496	39
93	Nobgang BHU	0	0	9	22	22	13	59	102	0	19	35	246	236	0
94	Punakha Hospital	13	299	282	242	254	233	1322	1562	12	0	0	754	750	17
95	Samadingkha BHU	6	7	19	43	43	67	42	70	0	4	14	390	384	14
96	Shengana BHU	3	2	14	20	19	16	90	87	0	0	0	245	251	13
97	Thinlegang BHU	2	5	16	78	81	90	478	414	16	63	89	1035	979	22
98	Tshochasa BHU	3	0	5	12	12	8	8	80	1	20	22	157	173	0

Facility wise selected services 2009

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
Samdrupjongkhar															
99	Deothang Hospital	0	177	187	117	117	131	694	590						
100	Gomdar BHU	26	0	65	66	66	68	297	374	0	1	0	516	503	10
101	Jomotsangkha BHU	5	4	41	50	50	102	117	153	0	0	0	381	394	0
102	Lauri BHU	18	2	50	56	53	54	64	528	0	0	0	467	460	3
103	Martshala BHU	5	5	37	38	38	43	47	134	0	0	1	520	422	12
104	Minjiwoong BHU	2	3	18	17	19	33	36	311	0	0	0	339	348	0
105	Orong BHU	0	11	35	35	35	37	120	372	5	3	27	507	527	2
106	Samdrub Jongkhar Hospital	0	100	146	156	156	179	286	620						
107	Samdrubchholing BHU I	22	12	82	104	108	176	1276	840	5	32	141	1085	1040	15
108	Wangphu BHU	27	0	54	48	48	56	40	130	0	0	0	269	317	0
Samtse															
109	Bara BHU	3	2	61	83	97	71	383	69	2	14	160	589	379	62
110	Chengmari BHU	8	17	79	103	104	106	127	517	4	31	216	909	710	31
111	Denchukha BHU	3	5	22	30	30	33	209	286	0	12	142	347	242	17
112	Dorokha BHU	0	4	26	31	31	52	126	236	1	28	152	454	219	15
113	Dumtey BHU	1	5	22	26	26	26	73	107	0	16	104	222	110	0

Facility wise selected services 2009

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
114	Ghumauney BHU	0	8	70	105	105	117	367	397	3	28	230	964	1093	62
115	Gomtu Hospital	0	75	130	172	172	158	2082	1291	15	82	208	1732	1469	36
116	Panbari BHU	0	11	44	63	63	68	438	410	2	10	232	751	299	38
117	Samtse Hospital	0	186	182	193	193	183	1147	830	28	153	230	1657	1628	126
118	Sengten BHU	3	0	26	47	47	34	84	198	0	32	84	314	196	8
119	Sibsoo Hospital	0	75	187	228	228	233	1161	1220	0	40	340	1765	1539	76
120	Tendu BHU	0	24	89	108	108	106	247	646	7	26	201	1006	1081	0
Sarpang															
121	Chhuzangang BHU	1	4	19	23	23	25	129	196	19	22	39	349	325	5
122	Dovangoan BHU*	1	6	27	31	31	40	316	495	0	0	50	369	146	0
123	Gaylegphug Hospital	0	491	555	347	347	326	1219	1981	58	84	189	2377	2674	123
124	Gongdara BHU*	0	2	9	8	8	8	177	197	3	0	16	126	61	4
125	Jigme Chholing BHU	0	34	25	35	35	44	426	574	30	23	55	461	240	0
126	Jimeling BHU	5	26	29	64	64	65	233	618	20	25	43	616	658	50
127	Norbuling BHU	7	22	36	47	47	44	262	395	8	31	32	475	429	0
128	Phibsoo BHU	0	0	0	0	0	0	0	0						
129	Sarpang Hospital	0	82	120	130	130	115	744	1285	113	35	91	1118	1021	338
130	Singhi BHU	1	4	12	20	20	21	80	199	3	5	14	223	80	0

Facility wise selected services 2009

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
131	Taklai BHU	3	0	5	7	7	8	9	53	0	0	0	61	62	0
132	Umling BHU	0	9	28	27	27	40	82	268	23	14	43	353	355	0
Thimphu															
133	Changang BHU	2	0	0	0	0	0	0	0						
134	CHU JDWNRH	0	0	5	34	34	48	40	189	32	13	15	290	288	0
135	Dechhencholing BHU I	4	17	60	190	190	203	688	946	67	213	174	1493	1488	0
136	Gaynekha BHU	1	4	7	18	18	14	124	100	8	16	49	192	194	0
137	Gidakom Hospital	0	58	80	123	123	127	356	702						
138	JDWNR Hospital	0	2570	3484	1485	1483	1355	1353	4069						
139	Jungshina Sat. Clinic	0	0	13	170	170	163	165	827						
140	Lingzhi BHU	3	0	7	11	11	11	44	79	0	2	21	68	63	10
141	Lungtenphu RBA Hospital	0	0	48	189	189	266	418	1038						
142	Motithang Sat. Clinic	0	0	32	196	196	191	257	762						
143	RBP Clinic	0	0	0	0	0	0	121	163						
Trashigang															
144	Bartsham BHU	1	14	37	30	30	32	11	38	0	11	67	390	376	18
145	Bidung BHU	1	4	11	16	16	20	47	171	0	1	1	249	254	15
146	Bikhar BHU	1	12	29	27	27	32	162	230	7	5	60	325	313	9

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
147	Challing BHU	2	3	16	11	11	10	6	23	8	0	0	189	111	89
148	Chhangmi BHU	0	12	32	28	28	32	47	194	34	0	0	320	334	10
149	Kanglung BHU I	6	36	123	155	155	151	210	731	25	22	40	940	968	0
150	Kangpara BHU	0	4	24	33	33	32	45	300	5	3	113	320	269	0
151	Khaling BHU	20	11	43	58	58	47	127	477	12	8	31	479	482	33
152	Lumang BHU	1	6	20	21	21	14	23	179	0	0	16	191	198	1
153	Merak BHU	22	0	23	19	19	20	10	165	0	1	0	206	207	0
154	Ozarong BHU	1	12	47	49	49	64	171	607	0	0	0	399	203	25
155	Pasaphu BHU	1	1	7	9	9	4	2	3	0	1	29	103	98	0
156	Phekpary BHU	4	0	18	18	18	25	8	9	0	2	24	181	180	0
157	Phongmay BHU	1	6	25	36	36	39	174	410	6	4	32	314	332	21
158	Radi BHU	0	17	38	47	47	53	529	518	0	17	110	582	586	27
159	Rangjung BHU I	0	22	32	40	40	36	77	344	20	10	58	390	371	65
160	Riserboo Hospital	0	38	71	60	60	67	296	431	8	7	56	624	644	7
161	Sakten BHU	11	0	48	41	41	29	0	48	2	0	37	319	228	78
162	Thongrong BHU	4	1	5	8	8	7	8	58	0	0	0	69	77	1
163	Thungkhar BHU	3	0	18	15	15	20	48	109	3	1	6	193	177	0
164	Trashigang Hospital	4	122	138	90	90	84	476	517	15	4	18	644	589	0
165	Tsangpo BHU	0	7	16	25	25	25	93	201	2	2	38	253	226	26

Facility wise selected services 2009

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
166	Yabrang BHU	17	3	20	19	19	17	97	61	1	1	43	181	193	0
167	Yangneer BHU	9	27	43	49	49	55	93	297	5	4	60	400	404	14
Trashiyangtse															
168	Dungzam BHU	1	2	44	43	43	41	13	86	39	4	8	288	272	41
169	Jamkhar BHU	1	2	20	25	25	20	64	138	10	4	46	281	313	3
170	Khamdang BHU	6	12	67	82	82	68	117	242	18	14	75	613	661	229
171	Kheni BHU	8	10	34	33	33	43	93	223	9	2	34	345	440	6
172	Ramjar BHU	0	5	12	21	21	26	73	138	3	2	44	250	285	0
173	Thragom BHU	0	1	25	25	25	32	66	209	2	3	39	347	368	0
174	Tomiyangsa BHU	0	1	32	38	38	53	8	59	0	2	18	377	372	0
175	Yangtse Hospital	0	51	93	111	111	107	91	470	11	24	71	651	656	34
Trongsa															
176	Bemji BHU	3	0	25	32	32	35	59	131	7	6	10	191	193	0
177	Kungarabten BHU	2	5	56	59	59	66	305	398	10	3	15	453	451	74
178	Langthel (Tongtophel) BHU	5	5	26	47	47	49	59	367	6	13	51	360	355	15
179	Nabji (Khorphu) BHU	5	0	9	14	16	20	46	179	0	1	4	179	177	28
180	Trashiling BHU	3	1	7	25	25	23	89	200	2	5	21	238	204	2
181	Trongsa Hospital	1	54	54	76	76	72	312	429	8	16	24	580	557	0

Facility wise selected services 2009

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
182	Zangbi BHU	2	1	13	12	12	7	39	12	0	0	25	3	48	4
Tsirang															
183	Damphu Hospital	2	168	173	202	202	209	1326	2120	0	22	103	544	480	0
184	Khorsani BHU	8	17	35	45	81	36	433	497	10	17	89	453	486	2
185	Mendraygang BHU	4	10	37	53	53	53	391	748	20	28	67	554	610	3
186	Patalay BHU	0	4	5	23	23	23	442	302	1	12	41	231	192	4
187	Tsirangdara BHU	2	14	38	50	50	82	174	418	9	15	95	454	451	0
Wangdi															
188	Bajo BHU I	43	156	181	211	211	208	324	233	18	73	170	1701	1638	5
189	Dangchu BHU	4	0	16	29	29	31	2	18	1	3	42	151	191	10
190	Gaselo BHU	3	6	21	35	35	43	46	260	0	1	28	486	396	59
191	Jala Ula BHU	1	1	6	22	22	18	14	33	0	5	28	78	51	33
192	Kamichu BHU	1	0	18	36	36	23	27	109	1	4	44	211	151	54
193	Phobjikha BHU	8	18	62	92	94	89	292	339	0	25	56	700	489	0
194	Samtegang BHU	2	5	29	43	43	47	36	95	0	23	116	587	401	12
195	Sephu BHU	3	10	31	43	43	53	18	33	0	0	0	291	267	13
196	Teki Agona BHU	37	7	25	51	51	43	14	36	0	22	115	372	310	19
197	Uma BHU	4	0	6	11	11	9	17	55	0	0	0	49	51	8
198	Wangdi RBA Hospital	0	0	94	134	134	138	70	189						

Facility wise selected services 2009

Sl. No.	Facility Name	Trained Delivery		Vaccination Services				Family Planning						Water & Sanitation	
		Home	Facility	BCG	OPV3	DPT- HepB - Hib 3	Measles	Oral Pills	DMPA	Current IUD User	Tubectomy	Vasectomy	Latrine	water supply	Pipe water not functioning
Zhemgang															
199	Bjoka BHU	1	2	14	14	14	18	34	222	0	0	10	134	136	0
200	Buli BHU	5	1	13	25	24	31	106	104	0	6	14	167	167	0
201	Gomphu BHU	8	1	8	11	11	11	53	155	3	5	11	92	90	0
202	Goshing BHU	3	2	17	22	22	20	369	204	8	5	41	215	172	2
203	Kadidzong BHU	4	0	7	6	6	6	37	74	0	0	1	47	40	9
204	Kagtong BHU	16	2	15	10	10	9	91	201	4	0	8	93	92	5
205	Khomshar BHU	11	2	34	36	36	28	188	198	15	3	7	195	167	75
206	Langdorbi BHU	1	1	11	17	15	20	75	147	15	3	7	118	167	75
207	Lelegang BHU	7	1	13	17	17	15	66	93	10	5	13	114	96	18
208	Manas BHU	1	0	2	3	3	4	6	19	0	0	0	42	42	42
209	Panbang BHU I	8	11	37	45	45	50	58	156	0	0	0	340	340	0
210	Pantang BHU	7	4	22	33	33	31	87	119	2	4	11	148	148	0
211	Shingkhar BHU	5	1	21	20	20	44	137	294	25	7	12	226	190	13
212	Yebilaptsa Hospital	0	35	50	64	64	52	294	398	8	3	0	537	545	0
213	Zhemgang BHU I	4	1	22	56	55	42	398	414	22	24	26	508	516	7
Total		878	8133	13519	13319	13382	13581	44643	75999	2054	3219	9730	85193	79111	4124

Note:

Major cities are not covered by Annual Household ie. Under family planning columns the current IUD Users

Table 14 Type of diseases seen in Bhutan, 2005 - 2009

Code	Name of Disease	Year				
		2005	2006	2007	2008	2009
Infections						
A00	Cholera	29	38	5	18	22
A01	Typhoid	2948	2871	2055	1927	1811
A02*	Diarrhoea	67301	70939	64100	58537	65495
A03*	Dysentery	31404	31631	26601	24411	27265
A15*	Tuberculosis	1076	920	874	921	1016
A33*	Tetanus	5	59	20	7	23
A36	Diphtheria	0	0	0	0	0
A37	Pertussis	0	0	0	0	0
A51	Early Syphilis	92	93	41	53	59
A54*	Sexually Transmitted Disease, excluding HIV/ AIDS	1797	1575	1339	1243	1745
A80	Polio	0	0	0	0	0
A82	Rabies	10	26	3	2	3
Viral, Protozoal & Helminthic disease						
B05*	Measles	69	21	12	14	5
B15*	Viral Hepatitis	811	818	759	620	821
B50	Plasmodium falciparum malaria	1323	1306	479	251	713
B51*	Other Malaria	1071	1297	546	272	519
B65*	Intestinal Worms	19652	18638	16275	13585	11631
B86	Scabies	14252	18500	17390	11733	8702
ABZ*	Other Infections (excluding ear, brain, STI)	11738	11944	10175	8122	8345
Neoplasm						
C53	Cervical Cancer	27	49	70	50	90
CZZ*	Other Cancers	528	538	646	405	693
D00*	Neoplasm (benign + CIS)	38	83	125	230	364
Blood diseases						
D50*	Nutritional Anaemia	10118	11233	11510	11593	11853
D55*	Blood & Immune Disorders	1011	832	508	850	995
Endocrine, Metabolic & Nutritional						
E10*	Diabetes	944	1470	1732	2541	2605
E40*	Malnutrition (exclude child clinic attendance)	882	1323	652	694	719
EZZ*	Other Nutritional & Metabolic Disorders	1907	2241	1927	1891	1868

Code	Name of Disease	Year				
		2005	2006	2007	2008	2009
Mental disorders						
F20*	Psychosis	122	130	121	126	87
F31*	Depression	444	524	712	739	621
F40*	Anxiety	381	302	324	392	513
FZZ*	Other Mental Disorders	565	734	647	755	732
Disease of Nervous system						
G00*	Meningitis/Encephalitis	193	165	152	256	238
G41*	Epilepsy	1008	1205	1220	1156	1104
GZZ*	Other Nervous inlcuding Peripheral Disorders	15259	20320	24162	26323	30468
Eye & Ear Diseases						
H10	Conjunctivitis	40407	41977	46127	37240	37046
H25*	Cataract	852	967	1118	1251	768
H00*	Other Eye Disorders	28899	32733	30490	31721	31465
H65*	Otitis Media	18904	20217	18185	16762	14264
HZZ*	Other Ear Disorders	9796	10339	11818	11842	11911
Diseases of Circulatory System						
I00*	Rheumatic Heart Disease	1035	1052	1367	1356	1494
I10*	Hypertension	16570	20501	19347	20347	21177
I20*	Ischaemic Heart Diseases	198	94	125	210	215
I60*	Cerebro-vascular Diseases	202	184	215	227	284
IZZ*	Other Circulatory Diseases	4375	4267	4270	4277	5261
Respiratory diseases						
J00	Common Cold	285590	292142	264840	266164	302035
J02*	Acute Pharyngitis/Tonsilitis	51432	63669	65594	60510	70999
J12*	Pneumonia	12524	17405	13633	14774	11548
JZZ*	Other Respiratory & Nose Diseases	32657	43023	45266	51145	54156
Diseases of the Digestive system						
K02	Dental Caries	28349	29868	30755	30328	30356
K00*	Diseases of Teeth & Gums	15755	15040	14263	15615	15284
K20*	Peptic Ulcer Syndrome	62216	67504	68503	63036	68036
K35	Acute Appendicitis	592	745	875	478	571
K70	Alcohol Liver Diseases	1217	1531	1471	1329	1602
K80*	Gall Bladder Diseases	987	1108	998	996	919
KZZ*	Other Diseases of the Digestive System	37006	49334	51367	54859	60101

Code	Name of Disease	Year				
		2005	2006	2007	2008	2009
Skin Diseases						
L00*	Skin Infections	104339	115586	112455	97514	90375
LZZ*	Other Disorders of Skin & Subcutaneous-tissues	51906	63190	63735	59335	60923
Diseases of Musculo-skeletal system & Cogenital Deformities						
M00*	Arthritis & Arthrosis	11870	12985	13088	13097	12409
MZZ*	Other Musculo-skeletal disorders	48138	58864	59953	61001	65842
Genito-Urinary diseases						
N30	Cystitis	823	1005	1038	1367	1788
N61*	Infection of Breasts, including Puerperium	639	847	852	758	758
N62*	Other Disease of the Breast	1348	1462	1449	1572	1537
N70*	Pelvic Inflammatory Disease	1759	1555	1980	1308	1501
N91*	Menstrual Disturbances	3618	4058	4464	4602	5304
NZZ*	Other Kidney, UT/ Genital Disorders	19667	24660	26133	26121	29388
Pregnancy, Childbirth and Puerperium						
O00*	Abortions	657	811	913	928	1057
O13*	Pregnancy Induced Hypertension	514	453	392	451	458
O20*	Ante-Partum Haemorrhage & Placenta Previa	125	131	97	163	147
O32	Malpresentation	148	120	105	133	165
O63	Prolonged Labour	235	257	289	381	635
O64*	Obstructed Labour	155	78	149	156	275
O72	Post Partum Haemorrhage	197	168	142	154	133
O73	Retained Placenta	248	248	218	439	168
O85*	Puerperal Sepsis	92	106	116	96	125
OZZ*	Other complications of pregnancy	3726	4456	4483	4607	5296
Perinatal Conditions						
P05*	Low Birth Weight	134	202	202	194	247
P95	Foetal Death & Stillbirth	58	65	61	62	51
P96	Neonatal Death	65	103	98	121	83
PZZ*	Conditions Orginating in the Perinatal Period	655	591	712	698	965

Code	Name of Disease	Year				
		2005	2006	2007	2008	2009
Malformations						
QZZ*	Malformations	148	135	177	158	236
Injuries & Trauma						
T20*	Burns and Corrosions	4209	4324	4563	3755	3824
STZ*	Injuries & Poisoning	20872	22198	25142	26330	28509
VZZ*	Transport Accidents	1410	1631	1564	1612	1673
W50*	Bites & Stings	6245	7956	7558	7249	7112
WXZ*	Other External Causes of Injury	13004	14795	13084	13712	14156
Y96	Work Related Injuries	11429	12114	10795	10260	10577
YZZ*	Complications of Health Care	1650	1018	522	457	528
ZZZ*	ANC, Immunisation & Other counseling	33619	35466	31040	32031	39383
Total		1180270	1307166	1263378	1225006	1306245
Total Old Cases all causes						
ZZZ8*	**Total Old Cases all causes**	**447776**	**454959**	**433353**	**388770**	**493390**

Table 15 Total morbidity by gender 2009

Code	Name of Disease	Under 5 years		Above 5 years		Total
		Male	Female	Male	Female	
Infections						
A00	Cholera	6	2	5	9	22
A01	Typhoid	68	64	756	923	1811
A02*	Diarrhoea	11419	10589	22667	20820	65495
A03*	Dysentery	4247	3942	10167	8909	27265
A15*	Tuberculosis	38	38	528	412	1016
A33*	Tetanus	2	6	10	5	23
A36	Diphtheria	0	0	0	0	0
A37	Pertussis	0	0	0	0	0
A51	Early Syphilis	2	2	37	18	59
A54*	Sexually Transmitted Disease, excluding HIV/AIDS	10	8	1012	715	1745
A80	Polio	0	0	0	0	0
A82	Rabies	0	0	2	1	3
Viral, Protozoal & Helminthic disease						
B05*	Measles	1	3	0	1	5
B15*	Viral Hepatitis	164	134	297	226	821
B50	Plasmodium falciparum malaria	28	21	409	255	713
B51*	Other Malaria	23	17	300	179	519
B65*	Intestinal Worms	1414	1606	4132	4479	11631
B86	Scabies	730	704	4325	2943	8702
ABZ*	Other Infections (excluding ear, brain, STI)	758	795	3343	3449	8345
Neoplasm						
C53	Cervical Cancer	0	0	0	90	90
CZZ*	Other Cancers	4	32	417	240	693
D00*	Neoplasm (benign + CIS)	17	7	156	184	364
Blood diseases						
D50*	Nutritional Anaemia	249	276	3029	8299	11853
D55*	Blood & Immune Disorders	47	50	378	520	995
Endocrine, Metabolic & Nutritional						
E10*	Diabetes	4	1	1326	1274	2605
E40*	Malnutrition (exclude child clinic attendance)	106	131	199	283	719
EZZ*	Other Nutritional & Metabolic Disorders	138	154	690	886	1868

Code	Name of Disease	Under 5 years		Above 5 years		Total
		Male	Female	Male	Female	
Mental disorders						
F20*	Psychosis	0	0	47	40	87
F31*	Depression	0	2	280	339	621
F40*	Anxiety	2	6	182	323	513
FZZ*	Other Mental Disorders	1	2	378	351	732
Disease of Nervous system						
G00*	Meningitis/Encephalitis	36	24	81	97	238
G41*	Epilepsy	38	14	588	464	1104
GZZ*	Other Nervous inlcuding Peripheral Disorders	286	365	11305	18512	30468
Eye & Ear Diseases						
H10	Conjunctivitis	2899	2872	14340	16935	37046
H25*	Cataract	15	9	390	354	768
H00*	Other Eye Disorders	1069	1172	12787	16437	31465
H65*	Otitis Media	1933	1884	5341	5106	14264
HZZ*	Other Ear Disorders	776	800	5141	5194	11911
Diseases of Circulatory System						
I00*	Rheumatic Heart Disease	39	28	627	800	1494
I10*	Hypertension	0	0	9255	11922	21177
I20*	Ischaemic Heart Diseases	0	0	108	107	215
I60*	Cerebro-vascular Diseases	5	3	147	129	284
IZZ*	Other Circulatory Diseases	147	159	2154	2801	5261
Respiratory diseases						
J00	Common Cold	32917	32747	112171	124200	302035
J02*	Acute Pharyngitis/Tonsilitis	3501	3797	29078	34623	70999
J12*	Pneumonia	4200	3650	1863	1835	11548
JZZ*	Other Respiratory & Nose Diseases	5275	5623	20304	22954	54156
Diseases of the Digestive system						
K02	Dental Caries	879	887	13325	15265	30356
K00*	Diseases of Teeth & Gums	481	501	6663	7639	15284
K20*	Peptic Ulcer Syndrome	273	334	28594	38835	68036
K35	Acute Appendicitis	6	4	262	299	571
K70	Alcohol Liver Diseases	0	0	839	763	1602
K80*	Gall Bladder Diseases	10	13	233	663	919
KZZ*	Other Diseases of the Digestive System	3523	3715	24445	28418	60101

Code	Name of Disease	Under 5 years		Above 5 years		Total
		Male	Female	Male	Female	
Skin Diseases						
L00*	Skin Infections	8831	8742	39930	32872	90375
LZZ*	Other Disorders of Skin & Subcutaneous-tissues	5143	4832	26741	24207	60923
Diseases of Musculo-skeletal system & Cogenital Deformities						
M00*	Arthritis & Arthrosis	74	74	6198	6063	12409
MZZ*	Other Musculo-skeletal disorders	478	624	32354	32386	65842
Genito-Urinary diseases						
N30	Cystitis	30	47	471	1240	1788
N61*	Infection of Breasts, including Puerperium	0	2	57	699	758
N62*	Other Disease of the Breast	1	6	25	1505	1537
N70*	Pelvic Inflammatory Disease	0	0	0	1501	1501
N91*	Menstrual Disturbances	0	0	0	5304	5304
NZZ*	Other Kidney, UT/ Genital Disorders	663	737	7945	20043	29388
Pregnancy, Childbirth and Puerperium						
O00*	Abortions	0	0	0	1057	1057
O13*	Pregnancy Induced Hypertension	0	0	0	458	458
O20*	Ante-Partum Haemorrhage & Placenta Previa	0	0	0	147	147
O32	Malpresentation	0	0	0	165	165
O63	Prolonged Labour	0	0	0	635	635
O64*	Obstructed Labour	0	0	0	275	275
O72	Post Partum Haemorrhage	0	0	0	133	133
O73	Retained Placenta	0	0	0	168	168
O85*	Puerperal Sepsis	0	0	0	125	125
OZZ*	Other complications of pregnancy	0	0	0	5296	5296
Perinatal Conditions						
P05*	Low Birth Weight	136	111	0	0	247
P95	Foetal Death & Stillbirth	26	25	0	0	51
P96	Neonatal Death	44	39	0	0	83
PZZ*	Conditions Orginating in the Perinatal Period	543	422	0	0	965

Code	Name of Disease	Under 5 years		Above 5 years		Total
		Male	Female	Male	Female	
Malformations						
QZZ*	Malformations	60	49	78	49	236
Injuries & Trauma						
T20*	Burns and Corrosions	639	557	1489	1139	3824
STZ*	Injuries & Poisoning	1163	844	18255	8247	28509
VZZ*	Transport Accidents	60	44	1134	435	1673
W50*	Bites & Stings	449	395	3637	2631	7112
WXZ*	Other External Causes of Injury	566	404	8577	4609	14156
Y96	Work Related Injuries	95	89	7294	3099	10577
YZZ*	Complications of Health Care	7	10	161	350	528
ZZZ*	ANC, Immunisation & Other counseling	4915	4464	9597	20407	39383
Total		101709	99714	519056	585766	1306245
Total Old Cases all causes						
ZZZ8*	**Total Old Cases all causes**	493390				

Table 16 Outpatient cases seen in all hospitals in 2009

Code	Name of Disease	Under 5 years		Above 5 years		Total
		Male	Female	Male	Female	
Infections						
A00	Cholera	5	2	5	8	20
A01	Typhoid	45	44	401	477	967
A02*	Diarrhoea	6203	5653	10504	9065	31425
A03*	Dysentery	2071	1861	4145	3516	11593
A15*	Tuberculosis	20	21	101	91	233
A33*	Tetanus	0	0	0	0	0
A36	Diphtheria	0	0	0	0	0
A37	Pertussis	0	0	0	0	0
A51	Early Syphilis	1	2	23	12	38
A54*	Sexually Transmitted Disease, excluding HIV/AIDS	1	1	582	385	969
A82	Rabies	0	0	0	0	0
Viral, Protozoal & Helminthic disease						
B05*	Measles	0	0	0	0	0
B15*	Viral Hepatitis	90	67	143	122	422
B50	Plasmodium falciparum malaria	6	2	95	60	163
B51*	Other Malaria	6	3	86	57	152
B65*	Intestinal Worms	668	766	1510	1377	4321
B86	Scabies	405	390	1959	1339	4093
ABZ*	Other Infections (excluding ear, brain, STI)	369	407	1801	1845	4422
Neoplasm						
C53	Cervical Cancer	0	0	0	23	23
CZZ*	Other Cancers	0	0	0	0	0
D00*	Neoplasm (benign + CIS)	11	2	36	100	149
Blood diseases						
D50*	Nutritional Anaemia	101	103	1212	3488	4904
D55*	Blood & Immune Disorders	4	8	39	54	105
Endocrine, Metabolic & Nutritional						
E10*	Diabetes	4	0	1144	1101	2249
E40*	Malnutrition (exclude child clinic attendance)	32	50	38	80	200
EZZ*	Other Nutritional & Metabolic Disorders	126	150	634	815	1725

Code	Name of Disease	Under 5 years		Above 5 years		Total
		Male	Female	Male	Female	
Mental disorders						
F20*	Psychosis	0	0	18	17	35
F31*	Depression	0	2	240	270	512
F40*	Anxiety	2	5	127	232	366
FZZ*	Other Mental Disorders	0	1	142	157	300
Disease of Nervous system						
G00*	Meningitis/Encephalitis	3	2	25	18	48
G41*	Epilepsy	20	7	491	409	927
GZZ*	Other Nervous inlcuding Peripheral Disorders	61	102	2801	4287	7251
Eye & Ear Diseases						
H10	Conjunctivitis	1543	1454	7430	7399	17826
H25*	Cataract	14	6	196	184	400
H00*	Other Eye Disorders	555	608	6109	6769	14041
H65*	Otitis Media	848	837	2519	2204	6408
HZZ*	Other Ear Disorders	488	519	3366	3211	7584
Diseases of Circulatory System						
I00*	Rheumatic Heart Disease	32	24	557	692	1305
I10*	Hypertension	0	0	6294	7802	14096
I20*	Ischaemic Heart Diseases	0	0	66	77	143
I60*	Cerebro-vascular Diseases	1	0	38	39	78
IZZ*	Other Circulatory Diseases	53	48	585	764	1450
Respiratory diseases						
J00	Common Cold	19193	18625	52833	51794	142445
J02*	Acute Pharyngitis/Tonsilitis	2398	2549	16148	17765	38860
J12*	Pneumonia	1503	1360	1060	1016	4939
JZZ*	Other Respiratory & Nose Diseases	3139	3678	10640	11217	28674
Diseases of the Digestive system						
K02	Dental Caries	674	657	9441	10310	21082
K00*	Diseases of Teeth & Gums	289	295	3758	4084	8426
K20*	Peptic Ulcer Syndrome	183	210	16096	20359	36848
K35	Acute Appendicitis	3	2	77	118	200
K70	Alcohol Liver Diseases	0	0	223	205	428
K80*	Gall Bladder Diseases	7	7	77	151	242
KZZ*	Other Diseases of the Digestive System	2117	2235	13369	14881	32602

Code	Name of Disease	Under 5 years		Above 5 years		Total
		Male	Female	Male	Female	
Skin Diseases						
L00*	Skin Infections	4717	4518	19857	15245	44337
LZZ*	Other Disorders of Skin & Subcutaneous-tissues	3080	2793	14220	12560	32653
Diseases of Musculo-skeletal system & Cogenital Deformities						
M00*	Arthritis & Arthrosis	48	53	3461	3175	6737
MZZ*	Other Musculo-skeletal disorders	300	433	17027	15632	33392
Genito-Urinary diseases						
N30	Cystitis	22	36	390	1040	1488
N61*	Infection of Breasts, including Puerperium	0	2	8	342	352
N62*	Other Disease of the Breast	1	6	16	757	780
N70*	Pelvic Inflammatory Disease	0	0	0	1381	1381
N91*	Menstrual Disturbances	0	0	0	2973	2973
NZZ*	Other Kidney, UT/ Genital Disorders	304	450	4050	10472	15276
Pregnancy, Childbirth and Puerperium						
O00*	Abortions	0	0	0	60	60
O13*	Pregnancy Induced Hypertension	0	0	0	125	125
O20*	Ante-Partum Haemorrhage & Placenta Previa	0	0	0	6	6
O32	Malpresentation	0	0	0	28	28
O63	Prolonged Labour	0	0	0	12	12
O64*	Obstructed Labour	0	0	0	1	1
O72	Post Partum Haemorrhage	0	0	0	13	13
O73	Retained Placenta	0	0	0	7	7
O85*	Puerperal Sepsis	0	0	0	10	10
OZZ*	Other complications of pregnancy	0	0	0	213	213
Perinatal Conditions						
P05*	Low Birth Weight	8	7	0	0	15
P95	Foetal Death & Stillbirth	0	1	0	0	1
P96	Neonatal Death	0	0	0	0	0
PZZ*	Conditions Orginating in the Perinatal Period	3	5	0	0	8

Code	Name of Disease	Under 5 years		Above 5 years		Total
		Male	Female	Male	Female	
Malformations						
QZZ*	Malformations	0	0	0	1	1
Injuries & Trauma						
T20*	Burns and Corrosions	253	197	593	453	1496
STZ*	Injuries & Poisoning	677	423	9510	4233	14843
VZZ*	Transport Accidents	38	30	471	198	737
W50*	Bites & Stings	253	224	1934	1323	3734
WXZ*	Other External Causes of Injury	298	212	3797	2058	6365
Y96	Work Related Injuries	21	17	2289	1210	3537
YZZ*	Complications of Health Care	2	1	87	206	296
ZZZ*	ANC, Immunisation & Other counseling	1681	1615	6329	9468	19093
Total		55000	53788	263223	273648	645659
Total Old Cases all causes						
ZZZ8*	Total Old Cases all causes	304216				

*Note: Data for o**utpatient of JDWNR Hospital is not included***

Table 17 Inpatient cases in all hospitals 2009

Code	Name of Disease	Under 5 years		Above 5 years		Total	Death
		Male	Female	Male	Female		
Infections							
A00	Cholera	0	0	0	1	1	0
A01	Typhoid	18	12	260	334	624	1
A02*	Diarrhoea	302	227	338	385	1252	5
A03*	Dysentery	79	105	198	200	582	1
A15*	Tuberculosis	18	17	427	321	783	31
A33*	Tetanus	0	0	0	0	0	0
A36	Diphtheria	0	0	0	0	0	0
A37	Pertussis	0	0	0	0	0	0
A51	Early Syphilis	1	0	0	0	1	0
A54*	Sexually Transmitted Disease, excluding HIV/AIDS	9	4	40	55	108	1
A80	Polio	0	0	0	0	0	0
A82	Rabies	0	0	2	1	3	3
Viral, Protozoal & Helminthic disease							
B05*	Measles	1	3	0	1	5	0
B15*	Viral Hepatitis	65	51	105	65	286	5
B50	Plasmodium falciparum malaria	19	18	214	121	372	5
B51*	Other Malaria	11	5	117	66	199	2
B65*	Intestinal Worms	5	4	14	17	40	0
B86	Scabies	3	14	26	16	59	0
ABZ*	Other Infections (excluding ear, brain, STI)	114	108	214	203	639	28
Neoplasm							
C53	Cervical Cancer	0	0	0	67	67	5
CZZ*	Other Cancers	4	32	417	240	693	53
D00*	Neoplasm (benign + CIS)	6	5	120	84	215	6
Blood diseases							
D50*	Nutritional Anaemia	29	18	171	335	553	6
D55*	Blood & Immune Disorders	15	14	60	68	157	7
Endocrine, Metabolic & Nutritional							
E10*	Diabetes	0	1	182	173	356	22
E40*	Malnutrition (exclude child clinic attendance)	23	23	4	8	58	2
EZZ*	Other Nutritional & Metabolic Disorders	12	4	56	71	143	3

Code	Name of Disease	Under 5 years		Above 5 years		Total	Death
		Male	Female	Male	Female		
Mental disorders							
F20*	Psychosis	0	0	29	23	52	0
F31*	Depression	0	0	40	69	109	0
F40*	Anxiety	0	1	55	91	147	0
FZZ*	Other Mental Disorders	0	1	153	115	269	0
Disease of Nervous system							
G00*	Meningitis/Encephalitis	33	22	26	29	110	21
G41*	Epilepsy	18	7	97	55	177	5
GZZ*	Other Nervous inlcuding Peripheral Disorders	37	43	190	164	434	11
Eye & Ear Diseases							
H10	Conjunctivitis	10	7	37	53	107	0
H25*	Cataract	1	3	194	170	368	0
H00*	Other Eye Disorders	21	17	244	233	515	0
H65*	Otitis Media	21	21	74	69	185	0
HZZ*	Other Ear Disorders	15	9	72	74	170	0
Diseases of Circulatory System							
I00*	Rheumatic Heart Disease	7	4	70	108	189	10
I10*	Hypertension	0	0	670	664	1334	15
I20*	Ischaemic Heart Diseases	0	0	42	30	72	6
I60*	Cerebro-vascular Diseases	4	3	109	90	206	29
IZZ*	Other Circulatory Diseases	50	56	466	422	994	68
Respiratory diseases							
J00	Common Cold	314	336	748	746	2144	0
J02*	Acute Pharyngitis/ Tonsilitis	42	52	261	363	718	0
J12*	Pneumonia	1011	739	342	330	2422	52
JZZ*	Other Respiratory & Nose Diseases	541	337	975	1052	2905	52
Diseases of the Digestive system							
K02	Dental Caries	7	4	87	135	233	0
K00*	Diseases of Teeth & Gums	1	4	28	22	55	0
K20*	Peptic Ulcer Syndrome	10	3	665	998	1676	5
K35	Acute Appendicitis	3	2	185	181	371	5
K70	Alcohol Liver Diseases	0	0	498	425	923	128
K80*	Gall Bladder Diseases	3	6	156	512	677	1
KZZ*	Other Diseases of the Digestive System	214	135	1263	1139	2751	46

Code	Name of Disease	Under 5 years		Above 5 years		Total	Death
		Male	Female	Male	Female		
Skin Diseases							
L00*	Skin Infections	132	124	372	308	936	1
LZZ*	Other Disorders of Skin & Subcutaneous-tissues	145	126	705	523	1499	2
Diseases of Musculo-skeletal system & Cogenital Deformities							
M00*	Arthritis & Arthrosis	6	6	161	81	254	0
MZZ*	Other Musculo-skeletal disorders	33	21	625	472	1151	4
Genito-Urinary diseases							
N30	Cystitis	8	11	81	200	300	1
N61*	Infection of Breasts, including Puerperium	0	0	2	82	84	0
N62*	Other Disease of the Breast	0	0	5	73	78	0
N70*	Pelvic Inflammatory Disease	0	0	0	120	120	0
N91*	Menstrual Disturbances	0	0	0	175	175	21
NZZ*	Other Kidney, UT/ Genital Disorders	82	42	880	1623	2627	36
Pregnancy, Childbirth and Puerperium							
O00*	Abortions	0	0	0	917	917	1
O13*	Pregnancy Induced Hypertension	0	0	0	309	309	1
O20*	Ante-Partum Haemorrhage & Placenta Previa	0	0	0	111	111	0
O32	Malpresentation	0	0	0	127	127	0
O63	Prolonged Labour	0	0	0	579	579	0
O64*	Obstructed Labour	0	0	0	263	263	0
O72	Post Partum Haemorrhage	0	0	0	78	78	2
O73	Retained Placenta	0	0	0	102	102	1
O85*	Puerperal Sepsis	0	0	0	88	88	0
OZZ*	Other complications of pregnancy	0	0	0	4872	4872	1
Perinatal Conditions							
P05*	Low Birth Weight	120	96	0	0	216	11
P95	Foetal Death & Stillbirth	20	17	0	0	37	37
P96	Neonatal Death	36	38	0	0	74	74
PZZ*	Conditions Orginating in the Perinatal Period	534	415	0	0	949	13
Malformations							
QZZ*	Malformations	60	47	77	47	231	8

Code	Name of Disease	Under 5 years		Above 5 years		Total	Death
		Male	Female	Male	Female		
Injuries & Trauma							
T20*	Burns and Corrosions	38	30	81	67	216	1
STZ*	Injuries & Poisoning	99	57	1304	603	2063	24
VZZ*	Transport Accidents	7	5	348	138	498	7
W50*	Bites & Stings	11	5	110	59	185	2
WXZ*	Other External Causes of Injury	40	20	519	231	810	14
Y96	Work Related Injuries	2	1	156	65	224	3
YZZ*	Complications of Health Care	2	0	4	25	31	1
ZZZ*	ANC, Immunisation & Other counseling	148	152	173	1120	1593	1
Total		4620	3694	16344	24648	49306	907
Total Old Cases all causes							
ZZZ8*	**Total Old Cases all causes**	6346					

Table 18 Cases seen by Basic Health Units 2009

Code	Name of Disease	Under 5 years		Above 5 years		Total
		Male	Female	Male	Female	
Infections						
A00	Cholera	1	0	0	0	1
A01	Typhoid	5	8	95	112	220
A02*	Diarrhoea	4914	4709	11825	11370	32818
A03*	Dysentery	2097	1976	5824	5193	15090
A33*	Tetanus	2	6	10	5	23
A36	Diphtheria	0	0	0	0	0
A37	Pertussis	0	0	0	0	0
A51	Early Syphilis	0	0	14	6	20
A54*	Sexually Transmitted Disease, excluding HIV/AIDS	0	3	390	275	668
A80	Polio	0	0	0	0	0
A82	Rabies	0	0	0	0	0
Viral, Protozoal & Helminthic disease						
B05*	Measles	0	0	0	0	0
B15*	Viral Hepatitis	9	16	49	39	113
B50	Plasmodium falciparum malaria	3	1	100	74	178
B51*	Other Malaria	6	9	97	56	168
B65*	Intestinal Worms	741	836	2608	3085	7270
B86	Scabies	322	300	2340	1588	4550
ABZ*	Other Infections (excluding ear, brain, STI)	275	280	1328	1401	3284
Blood diseases						
D50*	Nutritional Anaemia	119	155	1646	4476	6396
D55*	Blood & Immune Disorders	28	28	279	398	733
Endocrine, Metabolic & Nutritional						
E40*	Malnutrition (exclude child clinic attendance)	51	58	157	195	461
Mental disorders						
FZZ*	Other Mental Disorders	1	0	83	79	163
Disease of Nervous system						
G00*	Meningitis/Encephalitis	0	0	30	50	80
GZZ*	Other Nervous inlcuding Peripheral Disorders	188	220	8314	14061	22783

Code	Name of Disease	Under 5 years		Above 5 years		Total
		Male	Female	Male	Female	
Eye & Ear Diseases						
H10	Conjunctivitis	1346	1411	6873	9483	19113
H25*	Cataract	493	547	6434	9435	16909
H00*	Other Eye Disorders	1064	1026	2748	2833	7671
H65*	Otitis Media	273	272	1703	1909	4157
Diseases of Circulatory System						
I10*	Hypertension	0	0	2291	3456	5747
IZZ*	Other Circulatory Diseases	44	55	1103	1615	2817
Respiratory diseases						
J00	Common Cold	13410	13786	58590	71660	157446
J02*	Acute Pharyngitis/Tonsilitis	1061	1196	12669	16495	31421
J12*	Pneumonia	1686	1551	461	489	4187
JZZ*	Other Respiratory & Nose Diseases	1595	1608	8689	10685	22577
Diseases of the Digestive system						
K02	Dental Caries	198	226	3797	4820	9041
K00*	Diseases of Teeth & Gums	191	202	2877	3533	6803
K20*	Peptic Ulcer Syndrome	80	121	11833	17478	29512
K70	Alcohol Liver Diseases	0	0	118	133	251
KZZ*	Other Diseases of the Digestive System	1192	1345	9813	12398	24748
Skin Diseases						
L00*	Skin Infections	3982	4100	19701	17319	45102
LZZ*	Other Disorders of Skin & Subcutaneous-tissues	1918	1913	11816	11124	26771
Diseases of Musculo-skeletal system & Cogenital Deformities						
M00*	Arthritis & Arthrosis	20	15	2576	2807	5418
MZZ*	Other Musculo-skeletal disorders	145	170	14702	16282	31299
Genito-Urinary diseases						
N61*	Infection of Breasts, including Puerperium	0	0	47	275	322
N62*	Other Disease of the Breast	0	0	4	675	679
N91*	Menstrual Disturbances	0	0	0	2156	2156
NZZ*	Other Kidney, UT/ Genital Disorders	277	245	3015	7948	11485

Code	Name of Disease	Under 5 years		Above 5 years		Total
		Male	Female	Male	Female	
Pregnancy, Childbirth and Puerperium						
O00*	Abortions	0	0	0	80	80
O13*	Pregnancy Induced Hypertension	0	0	0	24	24
O20*	Ante-Partum Haemorrhage & Placenta Previa	0	0	0	30	30
O32	Malpresentation	0	0	0	10	10
O63	Prolonged Labour	0	0	0	44	44
O64*	Obstructed Labour	0	0	0	11	11
O72	Post Partum Haemorrhage	0	0	0	42	42
O73	Retained Placenta	0	0	0	59	59
O85*	Puerperal Sepsis	0	0	0	27	27
OZZ*	Other complications of pregnancy	0	0	0	211	211
Perinatal Conditions						
P05*	Low Birth Weight	8	8	0	0	16
P95	Foetal Death & Stillbirth	6	7	0	0	13
P96	Neonatal Death	8	1	0	0	9
PZZ*	Conditions Orginating in the Perinatal Period	6	2	0	0	8
Malformations						
QZZ*	Malformations	0	2	1	1	4
Injuries & Trauma						
T20*	Burns and Corrosions	348	330	815	619	2112
STZ*	Injuries & Poisoning	387	364	7441	3411	11603
VZZ*	Transport Accidents	15	9	315	99	438
W50*	Bites & Stings	185	166	1593	1249	3193
WXZ*	Other External Causes of Injury	228	172	4261	2320	6981
Y96	Work Related Injuries	72	71	4849	1824	6816
YZZ*	Complications of Health Care	3	9	70	119	201
ZZZ*	ANC, Immunisation & Other counseling	3086	2697	3095	9819	18697
Total		42089	42232	239489	287470	611280
Total Old Cases all causes						
ZZZ8*	**Total Old Cases all causes**	182828				

Table 19 Children under 5 years who sought health care 2009

Code	Name of Disease	Under 5 years		Total
		Male	Female	
Infections				
A00	Cholera	6	2	8
A01	Typhoid	68	64	132
A02*	Diarrhoea	11419	10589	22008
A03*	Dysentery	4247	3942	8189
A15*	Tuberculosis	38	38	76
A33*	Tetanus	2	6	8
A36	Diphtheria	0	0	0
A37	Pertussis	0	0	0
A51	Early Syphilis	2	2	4
A54*	Sexually Transmitted Disease, excluding HIV/AIDS	10	8	18
A80	Polio	0	0	0
A82	Rabies	0	0	0
Viral, Protozoal & Helminthic disease				
B05*	Measles	1	3	4
B15*	Viral Hepatitis	164	134	298
B50	Plasmodium falciparum malaria	28	21	49
B51*	Other Malaria	23	17	40
B65*	Intestinal Worms	1414	1606	3020
B86	Scabies	730	704	1434
ABZ*	Other Infections (excluding ear, brain, STI)	758	795	1553
Neoplasm				
C53	Cervical Cancer	0	0	0
CZZ*	Other Cancers	4	32	36
D00*	Neoplasm (benign + CIS)	17	7	24
Blood diseases				
D50*	Nutritional Anaemia	249	276	525
D55*	Blood & Immune Disorders	47	50	97
Endocrine, Metabolic & Nutritional				
E10*	Diabetes	4	1	5
E40*	Malnutrition (exclude child clinic attendance)	106	131	237
EZZ*	Other Nutritional & Metabolic Disorders	138	154	292

Code	Name of Disease	Under 5 years		Total
		Male	Female	
Mental disorders				
F20*	Psychosis	0	0	0
F31*	Depression	0	2	2
F40*	Anxiety	2	6	8
FZZ*	Other Mental Disorders	1	2	3
Disease of Nervous system				
G00*	Meningitis/Encephalitis	36	24	60
G41*	Epilepsy	38	14	52
GZZ*	Other Nervous inlcuding Peripheral Disorders	286	365	651
Eye & Ear Diseases				
H10	Conjunctivitis	2899	2872	5771
H25*	Cataract	15	9	24
H00*	Other Eye Disorders	1069	1172	2241
H65*	Otitis Media	1933	1884	3817
HZZ*	Other Ear Disorders	776	800	1576
Diseases of Circulatory System				
I00*	Rheumatic Heart Disease	39	28	67
I10*	Hypertension	0	0	0
I20*	Ischaemic Heart Diseases	0	0	0
I60*	Cerebro-vascular Diseases	5	3	8
IZZ*	Other Circulatory Diseases	147	159	306
Respiratory diseases				
J00	Common Cold	32917	32747	65664
J02*	Acute Pharyngitis/Tonsilitis	3501	3797	7298
J12*	Pneumonia	4200	3650	7850
JZZ*	Other Respiratory & Nose Diseases	5275	5623	10898
Diseases of the Digestive system				
K02	Dental Caries	879	887	1766
K00*	Diseases of Teeth & Gums	481	501	982
K20*	Peptic Ulcer Syndrome	273	334	607
K35	Acute Appendicitis	6	4	10
K70	Alcohol Liver Diseases	0	0	0
K80*	Gall Bladder Diseases	10	13	23
KZZ*	Other Diseases of the Digestive System	3523	3715	7238

Code	Name of Disease	Under 5 years		Total
		Male	Female	
Skin Diseases				
L00*	Skin Infections	8831	8742	17573
LZZ*	Other Disorders of Skin & Subcutaneous-tissues	5143	4832	9975
Diseases of Musculo-skeletal system & Cogenital Deformities				
M00*	Arthritis & Arthrosis	74	74	148
MZZ*	Other Musculo-skeletal disorders	478	624	1102
Genito-Urinary diseases				
N30	Cystitis	30	47	77
N61*	Infection of Breasts, including Puerperium	0	2	2
N62*	Other Disease of the Breast	1	6	7
N70*	Pelvic Inflammatory Disease	0	0	0
N91*	Menstrual Disturbances	0	0	0
NZZ*	Other Kidney, UT/ Genital Disorders	663	737	1400
Perinatal Conditions				
P05*	Low Birth Weight	136	111	247
P95	Foetal Death & Stillbirth	26	25	51
P96	Neonatal Death	44	39	83
PZZ*	Conditions Orginating in the Perinatal Period	543	422	965
Malformations				
QZZ*	Malformations	60	49	109
Injuries & Trauma				
T20*	Burns and Corrosions	639	557	1196
STZ*	Injuries & Poisoning	1163	844	2007
VZZ*	Transport Accidents	60	44	104
W50*	Bites & Stings	449	395	844
WXZ*	Other External Causes of Injury	566	404	970
Y96	Work Related Injuries	95	89	184
YZZ*	Complications of Health Care	7	10	17
ZZZ*	ANC, Immunisation & Other counseling	4915	4464	9379
Total		101709	99714	201423

Table 20 Number & causes of death, 2005 - 2009

Code	Name of Disease	Year				
		2005	2006	2007	2008	2009
Infections						
A00	Cholera	0	0	0	0	0
A01	Typhoid	1	3	2	2	1
A02*	Diarrhoea	4	16	1	7	5
A03*	Dysentery	0	2	0	3	1
A15*	Tuberculosis	29	19	23	20	31
A33*	Tetanus	0	1	0	0	0
A36	Diphtheria	0	0	0	0	0
A37	Pertussis	0	0	0	0	0
A51	Early Syphilis	0	0	0	0	0
A54*	Sexually Transmitted Disease, excluding HIV/AIDS	0	0	1	0	1
A80	Polio	0	0	0	0	0
A82	Rabies	0	2	0	1	3
Viral, Protozoal & Helminthic disease						
B05*	Measles	0	0	0	0	0
B15*	Viral Hepatitis	0	6	5	2	5
B50	Plasmodium falciparum malaria	4	6	2	4	5
B51*	Other Malaria	1	1	0	0	2
B65*	Intestinal Worms	2	0	0	0	0
B86	Scabies	0	0	0	0	0
ABZ*	Other Infections (excluding ear, brain, STI)	15	49	41	46	30
Neoplasm						
C53	Cervical Cancer	0	0	2	10	5
CZZ*	Other Cancers	40	45	60	48	61
D00*	Neoplasm (benign + CIS)	1	4	1	8	6
Blood diseases						
D50*	Nutritional Anaemia	6	4	7	2	7
D55*	Blood & Immune Disorders	6	4	4	12	7
Endocrine, Metabolic & Nutritional						
E10*	Diabetes	8	7	10	15	22
E40*	Malnutrition (exclude child clinic attendance)	1	2	6	1	3
EZZ*	Other Nutritional & Metabolic Disorders	3	4	1	2	3

Code	Name of Disease	Year				
		2005	2006	2007	2008	2009
Mental disorders						
F20*	Psychosis	0	0	0	0	0
F31*	Depression	0	1	1	1	0
F40*	Anxiety	0	0	0	0	0
FZZ*	Other Mental Disorders	1	5	1	1	0
Disease of Nervous system						
G00*	Meningitis/Encephalitis	24	18	22	16	21
G41*	Epilepsy	4	2	2	0	5
GZZ*	Other Nervous inlcuding Peripheral Disorders	6	10	11	8	14
Eye & Ear Diseases						
H10	Conjunctivitis	0	0	0	0	0
H25*	Cataract	0	0	0	0	0
H00*	Other Eye Disorders	2	1	0	0	0
H65*	Otitis Media	0	0	0	1	0
HZZ*	Other Ear Disorders	0	0	0	0	0
Diseases of Circulatory System						
I00*	Rheumatic Heart Disease	15	13	16	9	10
I10*	Hypertension	20	16	17	24	16
I20*	Ischaemic Heart Diseases	7	3	2	4	6
I60*	Cerebro-vascular Diseases	20	14	26	22	29
IZZ*	Other Circulatory Diseases	77	88	55	88	75
Respiratory diseases						
J00	Common Cold	5	2	0	0	0
J02*	Acute Pharyngitis/Tonsilitis	1	1	0	0	0
J12*	Pneumonia	44	59	39	59	57
JZZ*	Other Respiratory & Nose Diseases	31	50	38	57	58
Diseases of the Digestive system						
K02	Dental Caries	0	0	0	0	0
K00*	Diseases of Teeth & Gums	0	0	0	1	1
K20*	Peptic Ulcer Syndrome	6	2	0	3	6
K35	Acute Appendicitis	2	2	0	5	6
K70	Alcohol Liver Diseases	92	104	98	98	133
K80*	Gall Bladder Diseases	1	5	3	5	1
KZZ*	Other Diseases of the Digestive System	34	51	35	55	48

Code	Name of Disease	Year				
		2005	2006	2007	2008	2009
Skin Diseases						
L00*	Skin Infections	4	0	1	5	1
LZZ*	Other Disorders of Skin & Subcutaneous-tissues	2	3	1	2	2
Diseases of Musculo-skeletal system & Cogenital Deformities						
M00*	Arthritis & Arthrosis	1	0	0	0	0
MZZ*	Other Musculo-skeletal disorders	5	1	4	2	4
Genito-Urinary diseases						
N30	Cystitis	0	0	0	0	1
N61*	Infection of Breasts, including Puerperium	0	0	0	0	0
N62*	Other Disease of the Breast	1	0	0	0	0
N70*	Pelvic Inflammatory Disease	0	0	0	0	0
N91*	Menstrual Disturbances	2	0	0	2	22
NZZ*	Other Kidney, UT/ Genital Disorders	22	27	36	28	38
Pregnancy, Childbirth and Puerperium						
O00*	Abortions	4	0	1	0	1
O13*	Pregnancy Induced Hypertension	1	1	1	2	4
O20*	Ante-Partum Haemorrhage & Placenta Previa	0	0	0	0	0
O32	Malpresentation	1	1	3	0	0
O63	Prolonged Labour	0	0	0	0	0
O64*	Obstructed Labour	1	0	0	1	0
O72	Post Partum Haemorrhage	3	2	1	2	2
O73	Retained Placenta	0	1	0	1	1
O85*	Puerperal Sepsis	1	1	0	0	0
OZZ*	Other complications of pregnancy	2	2	2	2	1
Perinatal Conditions						
P05*	Low Birth Weight	4	2	3	3	11
P95	Foetal Death & Stillbirth	10	18	35	60	50
P96	Neonatal Death	52	81	84	123	83
PZZ*	Conditions Orginating in the Perinatal Period	24	10	11	15	13

Code	Name of Disease	Year				
		2005	2006	2007	2008	2009
Malformations						
QZZ*	Malformations	1	6	0	3	8
Injuries & Trauma						
T20*	Burns and Corrosions	2	15	7	9	1
STZ*	Injuries & Poisoning	14	24	25	30	25
VZZ*	Transport Accidents	14	12	8	10	8
W50*	Bites & Stings	1	4	0	3	4
WXZ*	Other External Causes of Injury	10	5	0	3	14
Y96	Work Related Injuries	4	3	0	1	3
YZZ*	Complications of Health Care	1	1	0	0	1
ZZZ*	ANC, Immunisation & Other counseling	2	2	2	0	1

Table 21 Case load by health facilities 2009

Sl. No.	Facility Name	Case type		Total
		New	Old	
1	Phuntsholing Hospital	49144	30768	79912
2	Gaylegphug Hospital	56155	21117	77272
3	Paro Hospital	46572	12418	58990
4	Punakha Hospital	38060	20714	58774
5	Mongar Hospital	16602	31250	47852
6	Samtse Hospital	25542	16332	41874
7	Wangdi RBA Hospital	21479	19777	41256
8	Bajo BHU I	20993	18640	39633
9	Damphu Hospital	23490	15712	39202
10	Gomtu Hospital	25839	9504	35343
11	Gedu Hospital	20781	7712	28493
12	Sarpang Hospital	18385	3888	22273
13	Lungtenphu RBA Hospital	16125	4959	21084
14	Sibsoo Hospital	15441	5613	21054
15	Bumthang Hospital	18244	2779	21023
16	Haa Imtrat Hospital	14266	5627	19893
17	Bali BHU I	16765	2941	19706
18	Tsimalakha Hospital	13528	5059	18587
19	Drujegang BHU	7203	11241	18444
20	Motithang Sat. Clinic	15493	2737	18230
21	Pemagatshel Hospital	13712	4428	18140
22	Trashigang Hospital	12749	5071	17820
23	Samtegang BHU	8269	9283	17552
24	Phobjikha BHU	8657	8806	17463
25	Samdrub Jongkhar Hospital	13981	3292	17273
26	Kanglung BHU I	12740	4336	17076
27	Lhuntse Hospital	14583	2214	16797
28	Trongsa Hospital	11901	4597	16498
29	Deothang Hospital	9835	6636	16471
30	Gidakom Hospital	11305	4637	15942
31	Chukha BHU I	10805	4869	15674
32	Yangtse Hospital	10459	4940	15399
33	Gaselo BHU	7331	7441	14772
34	Jungshina Sat. Clinic	11343	3132	14475

Sl. No.	Facility Name	Case type		Total
		New	Old	
35	Riserboo Hospital	11511	2853	14364
36	Samdrubchholing BHU I	12414	1893	14307
37	Dagapela BHU	11462	2670	14132
38	Rangjung BHU I	9030	4723	13753
39	Nganglam BHU I	9517	4122	13639
40	Dechhencholing BHU I	10974	2476	13450
41	Zhemgang BHU I	11058	2380	13438
42	Khamdang BHU	8496	4845	13341
43	Gyalposhing BHU I	9355	2738	12093
44	Chumey BHU	10318	1671	11989
45	Yebilaptsa Hospital	10074	1851	11925
46	Drukgyel BHU	8527	2432	10959
47	Tala BHU	9365	1560	10925
48	JDWNR Hospital	10591	0	10591
49	Dagana BHU I	6797	3730	10527
50	Tendu BHU	8710	1434	10144
51	Jimeling BHU	7328	2447	9775
52	Khaling BHU	8378	1311	9689
53	Lingmethang BHU	7590	2007	9597
54	Norbuling BHU	8865	690	9555
55	Lhamoyzingkha BHU I	7254	2286	9540
56	Teki Agona BHU	4574	4942	9516
57	Dorokha BHU	8320	1101	9421
58	Ghumauney BHU	8381	970	9351
59	Sephu BHU	4742	4564	9306
60	Orong BHU	7028	2071	9099
61	Mendraygang BHU	6984	1992	8976
62	Serzhong BHU	6972	1431	8403
63	Chengmari BHU	7429	736	8165
64	Jigme Chholing BHU	6970	1170	8140
65	Radi BHU	4675	3404	8079
66	Jala Ula BHU	4073	3935	8008
67	Thinlegang BHU	6992	962	7954
68	Chamgang BHU	4326	3496	7822
69	Bitekha BHU	6460	1077	7537
70	Chongekha BHU	6956	464	7420
71	Tashigatshel RBAP MI Room	6098	1111	7209
72	Panbang BHU I	5739	1392	7131

Sl No.	Facility Name	Case type		Total
		New	Old	
73	Kungarabten BHU	5829	1203	7032
74	Dechheling BHU	4689	2234	6923
75	Sengten BHU	6034	785	6819
76	Langthel (Tongtophel) BHU	6009	770	6779
77	Drametse BHU	4961	1622	6583
78	Tsirangdara BHU	4522	1895	6417
79	Kabisa BHU	5721	661	6382
80	Panbari BHU	5817	443	6260
81	Ozarong BHU	5905	268	6173
82	Umling BHU	5690	459	6149
83	Bikhar BHU	3871	2117	5988
84	Chhuzangang BHU	5145	794	5939
85	Dawakha BHU	4895	1010	5905
86	Shengana BHU	4654	1228	5882
87	Bartsham BHU	4512	1313	5825
88	Yadi BHU	4309	1404	5713
89	Dovangoan BHU*	4732	929	5661
90	Phongmay BHU	4290	1228	5518
91	Tangmachhu BHU	4639	872	5511
92	Denchukha BHU	5095	307	5402
93	Bara BHU	4542	708	5250
94	Khorsani BHU	4275	951	5226
95	RBP Clinic	3730	1356	5086
96	Ura BHU	4082	961	5043
97	Chaskhar BHU	3822	1095	4917
98	Kamichu BHU	2366	2501	4867
99	Khagochin BHU	4294	534	4828
100	Jomotsangkha BHU	3929	862	4791
101	Tsakaling BHU	3256	1459	4715
102	Tomiyangsa BHU	3136	1331	4467
103	Uma BHU	2097	2369	4466
104	Sakten BHU	3630	832	4462
105	Jurugang BHU	2034	2390	4424
106	Buli BHU	4015	389	4404
107	Gaynekha BHU	3539	791	4330
108	Yangnyer BHU	3599	697	4296
109	Chhangmi BHU	3499	780	4279
110	Gomdar BHU	3585	671	4256

Sl No.	Facility Name	Case type		Total
		New	Old	
111	Samadingkha BHU	3049	1173	4222
112	Bemji BHU	3838	229	4067
113	Autsho BHU	2961	1022	3983
114	Challi BHU	2947	995	3942
115	Tshangkha BHU	3261	661	3922
116	Kheni BHU	3116	764	3880
117	Dungzam BHU	2866	1005	3871
118	Patalay BHU	3115	718	3833
119	Thangrong BHU	2976	840	3816
120	Wangphu BHU	3014	774	3788
121	Martshala BHU	2938	779	3717
122	Merak BHU	3190	494	3684
123	Bongo BHU	2912	738	3650
124	Lokchina BHU	3290	293	3583
125	Chapchha BHU	3353	206	3559
126	Shingkhar BHU	3021	494	3515
127	Kangpara BHU	2664	735	3399
128	Nanong BHU	3103	245	3348
129	Chokor BHU	2424	879	3303
130	Yurung BHU	2915	385	3300
131	Singhi BHU	2567	724	3291
132	Jamkhar BHU	2875	359	3234
133	Damji BHU	2472	734	3206
134	Pantang BHU	2634	540	3174
135	Lauri BHU	2928	230	3158
136	Khoma BHU	2714	433	3147
137	Nobgang BHU	2628	506	3134
138	Gonpa Singma BHU	2466	656	3122
139	Trashiling BHU	2640	478	3118
140	Dungna BHU	2848	229	3077
141	Balam BHU	2647	429	3076
142	Akhochin BHU	2786	220	3006
143	Kengkhar BHU	2662	296	2958
144	Langdorbi BHU	2469	475	2944
145	Dangchu BHU	1487	1455	2942
146	Dungkhar BHU	2413	509	2922
147	Tang BHU	2652	223	2875
148	Dungmin BHU	2538	327	2865

Sl. No.	Facility Name	Case type		Total
		New	Old	
149	Gongdara BHU*	2521	308	2829
150	Goshing BHU	2392	428	2820
151	Patpachhu BHU	2234	544	2778
152	Tshatse BHU	1677	1058	2735
153	Junmey BHU	2237	449	2686
154	Bidung BHU	2124	562	2686
155	Menji BHU	2309	331	2640
156	Khomshar BHU	2227	412	2639
157	Minjiwoong BHU	2137	496	2633
158	Narang BHU	1802	816	2618
159	Dorithasa BHU	1714	737	2451
160	Thragom BHU	1700	749	2449
161	Ramjar BHU	1807	638	2445
162	Gasa BHU	2271	137	2408
163	Thungkhar BHU	1884	472	2356
164	Sangbekha BHU	1774	567	2341
165	Dumtey BHU	1945	360	2305
166	Ngatshang BHU	1922	381	2303
167	Tsangpo BHU	1789	448	2237
168	Yangthang BHU	1701	517	2218
169	Lajab BHU	1760	435	2195
170	Gomphu BHU	1745	447	2192
171	Nagor BHU	1626	563	2189
172	Challing BHU	2042	116	2158
173	Getana BHU	1946	196	2142
174	Lelegang BHU	1848	261	2109
175	Bumpazor BHU	1544	546	2090
176	Tsenkhar BHU	1527	523	2050
177	Tshochasa BHU	1527	496	2023
178	Bjoka BHU	1744	232	1976
179	Zangbi BHU	1664	224	1888
180	CHU JDWNRH	1577	243	1820
181	Tshebar BHU	1548	233	1781
182	Dagsa BHU	1484	275	1759
183	Gorsum BHU	1381	153	1534
184	Tsamang BHU	1257	248	1505
185	Kagtong BHU	1326	177	1503
186	Nabji (Khorphu) BHU	1422	63	1485

Sl No.	Facility Name	Case type		Total
		New	Old	
187	Yangbari BHU I	1170	288	1458
188	Lumang BHU	1105	321	1426
189	Norbugang BHU	1199	206	1405
190	Laya BHU	1275	57	1332
191	Taklai BHU	1065	223	1288
192	Thrumchung BHU	1214	67	1281
193	Baikunza BHU	1060	202	1262
194	Chokorling BHU	860	398	1258
195	Thongrong BHU	893	363	1256
196	Kadidzong BHU	1039	186	1225
197	Chhimung BHU	973	237	1210
198	Ladrong BHU	844	351	1195
199	Banjar BHU	948	221	1169
200	Yabrang BHU	935	190	1125
201	Zangkhar BHU	954	151	1105
202	Tahambi BHU	706	399	1105
203	Phekpary BHU	813	254	1067
204	Lingzhi BHU	837	155	992
205	Pasaphu BHU	702	225	927
206	Lungnana BHU	860	48	908
207	Ney BHU	686	222	908
208	Muhung BHU	614	240	854
209	Silambi BHU	622	226	848
210	Ganglapong BHU	503	106	609
211	Phibsoo BHU	359	97	456
212	Tongla BHU	248	191	439
213	Manas BHU	388	47	435
Total		1306245	493390	1799635

Table 22 National leprosy report 2009

Sl. No		Leprosy Type						Total
		LL	BL	BB	BT	TT	IND	
1	Total patient at the end of year 2008	10	14	8	2	0	1	35
2	New patients detected	3	8	0	0	1	0	12
3	Transferred in	1	0	0	0	0	0	1
4	Relapse	0	0	0	0	0	0	0
5	Regained to control	0	0	0	0	0	0	0
6	Released (RFT)	4	7	3	1	1	1	17
7	Died	0	0	0	0	0	0	0
8	Lost to control	0	0	0	0	0	0	0
9	Transferred out	1	0	0	0	0	0	1
10	Total patient at the end of year	9	15	5	1	0	0	30

Note :-

LL = Lepromatous Leprosy
BL = Borderline Lepromatous
BB = Borderline Borderlines
BT = Borderline tuberculoid
TT = Tuderculoid Tuberculoid
IND = Indeterminate

Table 23 National TB report 2009

Sputum examination	Total
Total sputum examined for AFB	6643
Total with sputum smear positive	511
Percentage of smear positive	7.69
Case finding report of new and re-treatment cases	
Pulmonary new positive	434
Relapse among new smear positive	51
Failure among new positive	16
Default among new smear positive	9
New pulmonary negative	287
Extra-pulmonary	357

Table 24 Center wise TB case finding report for the year 2009

Sl. No.	Name of Reporting Center	Pulmonary Positive								Pulmonary Negative		Extra pulmonary		Total	New TB case finding indicators
		New		Relapse		Failure		Default		New		New			
		(A)		(B)		(C)		(D)		(E)		(F)			A/(A+E+F)*100
		M	F	M	F	M	F	M	F	M	F	M	F		
1	Mongar	12	10	3	0	2	0	0	0	4	4	18	16	69	34.38
2	Bali	0	1	0	0	0	0	0	0	3	0	0	0	4	25.00
3	Bumthang	1	0	3	0	0	0	0	0	0	2	1	2	9	16.67
4	Dagana	1	0	0	0	0	0	0	0	1	1	0	0	3	33.33
5	Damphu	3	0	0	0	0	0	0	0	2	0	1	2	8	37.50
6	Deothang	9	6	1	1	0	1	0	1	0	0	0	0	19	100.00
7	Gassa	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
8	Gaylegphu	17	19	4	1	0	1	0	0	60	47	13	18	180	20.69
9	Gedu	5	4	0	0	1	0	0	0	3	2	0	1	16	60.00
10	Gidakom	6	8	0	0	1	1	0	0	0	1	0	0	17	93.33
11	Gomtu	5	7	0	0	0	0	0	0	5	1	1	6	25	48.00
12	JDWNRH	37	45	6	3	2	2	1	1	29	33	82	87	328	26.20
13	Lhamoizingkha	3	2	0	0	0	0	0	0	0	0	0	0	5	100.00
14	Bajo	1	1	1	2	0	0	0	0	1	0	3	1	10	28.57
15	Lungtenphu	7	5	0	0	0	1	0	0	3	2	7	10	35	35.29
16	Yebilaptsa	5	1	0	0	0	0	0	0	2	0	1	0	9	66.67

Center wise TB case finding report for the year 2009

Sl. No	Name of Reporting Center	Pulmonary Positive								Pulmonary Negative		Extra pulmonary		Total	New TB case finding indicators
		New		Relapse		Failure		Default		New		New			
		(A)		(B)		(C)		(D)		(E)		(F)			A/(A+E+F)*100
		M	F	M	F	M	F	M	F	M	F	M	F		
17	Paro	11	7	0	2	0	0	0	0	11	1	6	5	43	43.90
18	Pemagetshel	3	2	0	1	0	0	0	0	0	0	0	3	9	62.50
19	Phuntsholing	34	36	4	2	0	2	3	0	6	9	6	12	114	67.96
20	Punakha	10	6	0	3	0	0	1	0	1	0	4	1	26	72.73
21	Riserboo	2	2	0	0	0	0	1	0	1	2	0	0	8	57.14
22	S/Jongkhar	13	15	4	1	0	0	0	0	3	4	2	3	45	70.00
23	Samtse	11	8	3	2	0	1	0	0	13	15	6	8	67	31.15
24	Sarpang	1	1	0	1	0	0	0	0	1	1	2	2	9	25.00
25	Sibsoo	3	0	2	0	0	0	0	0	1	0	1	0	7	60.00
26	Trashigang	13	8	1	0	0	0	0	0	5	4	11	8	50	42.86
27	Trashiyangtse	3	9	0	0	0	1	0	0	0	0	0	0	13	100.00
28	Trongsa	1	4	0	0	0	0	1	0	0	0	0	0	6	100.00
29	Tsimalakha	3	5	0	0	0	0	0	0	1	2	5	1	17	47.06
30	Lhuntse	0	2	0	0	0	0	0	0	0	0	1	0	3	66.67
	Total	220	214	32	19	6	10	7	2	156	131	171	186	1154	40.26

Table 25

Center wise sputum examination report for the year 2009

Sl. No.	Name of reporting center	No. of Sputum Examination		Total sputum examined	No. of sputum positive		Total No. of sputum positive	Percent of positivity
		Male	Female		Male	Female		
		(a)	(b)	(c) a+b	(d)	(e)	(f) d+e	f / c * 100
1	Bajo	48	46	94	4	3	7	7.45
2	Bali	29	14	43	0	1	1	2.33
3	Bumthang	72	52	124	4	0	4	3.23
4	Dagana	10	4	14	1	0	1	7.14
5	Damphu	44	38	82	3	0	3	3.66
6	Deothang	99	148	247	10	9	19	7.69
7	Gassa	6	6	12	0	0	0	0.00
8	Gaylegphu	218	195	413	21	21	42	10.17
9	Gedu	80	83	163	5	4	9	5.52
10	Gidakom	71	62	133	7	9	16	12.03
11	Gomtu	31	36	67	5	7	12	17.91
12	JDWNRH	1034	974	2008	46	51	97	4.83
13	Lhamoizingkha	22	24	46	3	2	5	10.87
14	Lhuntse	35	26	61	0	2	2	3.28
15	Lungtenphu	121	99	220	7	6	13	5.91
16	Mongar	230	186	416	17	10	27	6.49

Center wise sputum examinations

Sl. No.	Name of reporting center	No. of Sputum Examination		Total sputum examined	No. of sputum positive		Total No. of sputum positive	Percent of positivity
		Male	Female		Male	Female		
		(a)	(b)	(c) a+b	(d)	(e)	(f) d+e	f/c*100
17	Paro	150	109	259	11	9	20	7.72
18	Pemagetshel	44	37	81	3	3	6	7.41
19	Phuntsholing	332	308	640	40	40	80	12.50
20	Punakha	102	74	176	11	9	20	11.36
21	Riserboo	16	11	27	3	2	5	18.52
22	S/Jongkhar	74	89	163	17	16	33	20.25
23	Samtse	187	152	339	14	11	25	7.37
24	Sarpang	79	56	135	1	2	3	2.22
25	Sibsoo	41	25	66	5	0	5	7.58
26	Trashigang	113	96	209	14	8	22	10.53
27	Trashiyangtse	45	48	93	3	10	13	13.98
28	Trongsa	23	23	46	2	4	6	13.04
29	Tsimalakha	80	63	143	3	6	9	6.29
30	Yebilaptsa	71	52	123	5	1	6	4.88
Total		3507	3136	6643	265	246	511	7.69

Table 26

Center wise no. of T.B. cases as per treatment category for the year 2009

Sl.No.	Name Reporting Center	CAT I		CAT II		Total
		M	F	M	F	
1	Bajo	5	2	1	2	10
2	Bali	3	1	0	0	4
3	Bumthang	2	4	3	0	9
4	Dagana	1	2	0	0	3
5	Damphu	6	2	0	0	8
6	Deothang	9	6	1	3	19
7	Gassa	0	0	0	0	0
8	Gaylegphu	90	84	4	2	180
9	Gedu	8	6	1	1	16
10	Gidakom	6	9	1	1	17
11	Gomtu	11	14	0	0	25
12	JDWNRH	148	165	9	6	328
13	Lhamoizingkha	3	2	0	0	5
14	Lhuntse	1	2	0	0	3
15	Lungtenphu	17	17	0	1	35
16	Mongar	34	30	5	0	69
17	Paro	28	13	0	2	43
18	Pemagetshel	3	5	0	1	9
19	Phuntsholing	46	57	7	4	114
20	Punakha	13	7	3	3	26
21	Riserboo	3	3	1	1	8
22	S/Jongkhar	18	22	4	1	45
23	Samtse	28	30	5	4	67
24	Sarpang	4	4	0	1	9
25	Sibsoo	5	0	2	0	7
26	Trashigang	29	20	1	0	50
27	Trashiyangtse	3	9	0	1	13
28	Trongsa	1	4	1	0	6
29	Tsimalakha	9	8	0	0	17
30	Yebilaptsa	8	1	0	0	9
Total		540	527	49	34	1154

Table 27

No. of malaria cases reported by vector borne disease control programme, Gelephu for the year 2009

Variables	0-4years		5-14 yraes		15-49 years		>50years		Total		G. Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Mix	2	0	11	7	30	17	11	5	54	30	84
PF	13	7	63	51	179	95	38	27	293	180	473
PV	16	12	58	46	145	65	31	21	250	144	394
Death	0	1	0	1	0	1	0	1	0	4	4

Table 28

Number of patients treated in different dzongkhags (Traditional Medicine) 2009

No.	TM Units	New	Old	Total	Gold needle	Silver needle
1	Trashigang	1632	1045	2677	1290	18
2	Trongsa	2182	2297	4479	135	0
3	Bumthang	1612	2241	3853	56	0
4	Haa	3458	1663	5121	284	8
5	Punakha	3313	1255	4568	357	5
6	Mongar	1347	830	2177	89	2
7	Gelephu	1373	1253	2626	368	0
8	P/Gatshel	3288	1581	4869	2603	137
9	Yebelabtsa	503	430	933	99	31
10	S/Jongkhar	1183	1096	2279	643	41
11	Paro	7662	4278	11940	317	21
12	Lhuntse	720	776	1496	655	22
13	T/Yangtse	542	682	1224	313	16
14	Dagana	559	317	876	101	44
15	Samtse	668	915	1583	86	18
16	Tserang	740	1082	1822	139	14
17	Bajo	1711	1631	3342	192	0
18	Gasa	548	191	739	70	1
19	Chukha	524	489	1013	108	20
20	Reserboo	253	268	521	190	0
21	Phobjikha	1228	805	2033	351	0
22	Dorokha	483	203	686	176	0
23	Ura	655	552	1207	76	0
24	Daksa	187	96	283	61	0
25	Korphu	307	199	506	266	0
26	Phuntsholing	1804	1779	3583	365	0
27	Kanglung	319	288	607	229	0
28	Kengkhar	672	340	1012	147	0
29	Drametse	671	662	1333	233	0
30	Nganglam	430	320	750	503	0
31	Rang Jung	1273	1030	2303	1021	0
32	Daga Pela	261	159	420	56	0
33	Zhemgang	142	87	229	50	0
34	Pan Bang	243	145	388	170	0
35	SamdrupCholing	530	217	747	169	0
36	Lhamoi Zhingkha	249	143	392	83	0
		258	136	394	137	0
37	National Traditional Medicine Hospital (NTMH)	20371	16447	36818	3051	96
Total		63901	47928	111829	15239	494

Table 29

Therapies conducted by national traditional medicine hospital (NTMH)

Sl. No.	Therapy	Year					2009
		2004	2005	2006	2007	2008	
1	Blood letting	102	100	118	141	134	175
2	Golden needle therapy	3618	4116	3698	3943	4212	4895
3	Silver needle therapy	30	105	345	23	56	96
4	Heated oil cauterization	314	486	628	344	668	1277
5	Localized steaming	1296	4056	4243	5151	4554	4724
6	Steam bath	3197	1255	1492	1669	2229	2349
7	Herbal bath	2326	2656	2684	2455	2639	2412
8	Nasal irrigation	202	341	547	461	803	10052
Total		11085	13115	13755	14187	15295	25980

Table 30 Health infrastructure 2009

Dzongkhag	Hospital	Basic Health Unit	No. of ORC	
			With Shed	Without Shed
Bumthang	Bumthang		4	0
		Choekhor Toe	0	0
		Chumey	3	0
		Tang	3	1
		Ura	3	0
Total	1	4	13	1
Chukha	Tsimalakha		2	1
	Phuentsholing		5	1
	Gedu		2	1
		Chapcha	2	0
		Chukha I	1	4
		Darla	1	0
		Bango	3	1
		Getana	1	4
		Chongekha	3	1
		Dungna	6	0
		Lokchina	1	2
		Shingchula	0	5
Total	3	9	27	20
Dagana	Dagapela		5	0
		Dagana I	2	0
		Bjurugang	1	0
		Khagochin	0	0
		Akochin	1	2
		Drujeygang	1	0
		Tshangkha	1	0
		Lajab	1	2
		Lhamoizingkha I	0	0
Total	1	8	12	4
Gasa		Gasa I	0	0
		Laya	1	2
		Lunana	7	0
		Damji	1	2
Total	0	4	9	4
Haa	IMTRAT		0	0
		Bali I	5	2
		Yangthang	1	1
		Sombaykha	1	2
		Dorithasa	0	3
Total	1	4	7	8

Dzongkhag	Hospital	Basic Health Unit	No. of ORC	
			With Shed	Without Shed
Lhuentse	Lhuentse		3	0
		Autso	2	0
		Dungkar	3	0
		Gortsum	2	0
		Khoma	5	0
		Ladrong	3	0
		Minjay	4	0
		Ney	1	0
		Patpachu	3	0
		Tangmachu	4	0
		Tshenkhar	2	0
		Zangkhar	1	0
Total	1	11	33	0
Mongar	Mongar		3	1
		Balam	2	0
		Banjar	1	0
		Bumpazor	3	0
		Chaskhar	3	1
		Dramitse	5	0
		Daksa	2	0
		Gylposhing	1	1
		Jurmey	3	0
		Kengkhar	3	0
		Lingmethang	5	1
		Nagor	4	0
		Ngatshang	0	0
		Shershong	3	0
		Tsamang	0	1
		Thangrong	4	0
		Tshakaling	5	1
		Yangbari	1	0
		Yadhi	1	0
		Chali	0	0
		Narang	2	0
		Ganglapong	0	0
		Silambi	0	0
		Muhung	0	0
		Takambi	0	0
Total	1	24	51	6

Dzongkhag	Hospital	Basic Health Unit	No. of ORC	
			With Shed	Without Shed
Paro	Paro		7	2
		Betikha	5	2
		Dawakha	4	1
		Drugyel	4	2
Total	1	3	20	7
Pemagatshel	Pemagatshel		5	0
		Tshatse	2	0
		Nanong	2	0
		Gonpasingma	3	1
		Yurung	3	0
		Chimong	1	0
		Tshebar	3	0
		Dungmin	3	0
		Thrumchung	2	0
		Dechhenling	3	0
		Norbugang	0	1
		Nganglam I	2	1
		Chokhorling	0	1
Total	1	12	29	4
Punakha	Punakha		0	0
		Nobgang	1	0
		Kabjisa	4	0
		Samadingkha	2	0
		Tshochasa	0	0
		Thinlaygang	2	0
		Shengana	0	0
Total	1	6	9	0
Samdrupjongkhar	Samdrupjongkhar		4	0
	Deothang RBA		0	0
		Lauri	3	0
		Minjiwoon	2	0
		Jomotshangkha I	0	2
		Samdrup Chholing I	10	3
		Martshalla	6	0
		Orong	2	0
		Gomdar	4	0
		Wangphu	0	0
Total	2	8	31	5
Samtse	Samtse		2	0
	Gomtu		3	0
	Sipsu		2	0

Dzongkhag	Hospital	Basic Health Unit	No. of ORC	
			With Shed	Without Shed
		Dumtoe	1	0
		Denchukha	2	1
		Bara	0	0
		Tendu	0	1
		Panbari	1	0
		Sengdyen	1	0
		Chengmari	0	1
		Ghumaney	1	1
		Dorokha	1	0
Total	3	9	14	4
Sarpang	Sarpang		2	1
	Gelephu		1	0
		Norbuling	1	1
		Jigmecholing	1	0
		Umling	1	0
		Chuzergang	0	0
		Jigmeling	0	0
		Pangkhey	1	1
		Gongdara	1	0
		Phibsoo	0	0
		Tarraythang	0	0
		Singe	0	0
Total	2	10	8	3
Thimphu	JDWNRH		1	7
	IBF Hospital		0	0
	Lungtenphug RBA		0	0
	Gidakom		3	0
		Dechencholing	0	2
		Genekha	0	1
		Lingzhi	1	1
		Jungshina	0	0
		Motithang	0	0
		Chang Gigi	0	0
		RBP	0	0
		Champang	0	0
		Soi	0	0
Total	4	9	5	11
Trashigang	Trashigang		3	0
	Riserboo		1	1
	Yongphula RBA		0	0
		Rangjung I	1	1
		Kanglung I	6	0

Dzongkhag	Hospital	Basic Health Unit	No. of ORC	
			With Shed	Without Shed
		Merak	1	1
		Changmey	2	0
		Bartsham	3	0
		Bidung	2	0
		Sakteng	2	0
		Radhi	3	0
		Phongmae	2	0
		Bikhar	2	0
		Udzorong	5	0
		Yangnyer	4	0
		Kangpara	3	1
		Tshangpo	1	0
		Thungkhar	2	0
		Khaling	6	0
		Yabrang	1	0
		Challing	0	0
		Lumang	3	0
Total	3	19	53	4
Trashiyangtse	Yangtse		0	0
		Khamdang	5	0
		Khini	4	0
		Tonmzhang	4	0
		Thragom	4	0
		Dungzam	2	0
		Jamkhar	2	0
		Ramjar	2	0
Total	1	7	23	0
Trongsa	Trongsa		3	0
		Bemji	3	0
		Tashiling	2	0
		Kunga Rabten	4	0
		Tongtongphy	3	0
		Jangbi	2	0
		Korphu	2	0
Total	1	6	19	0

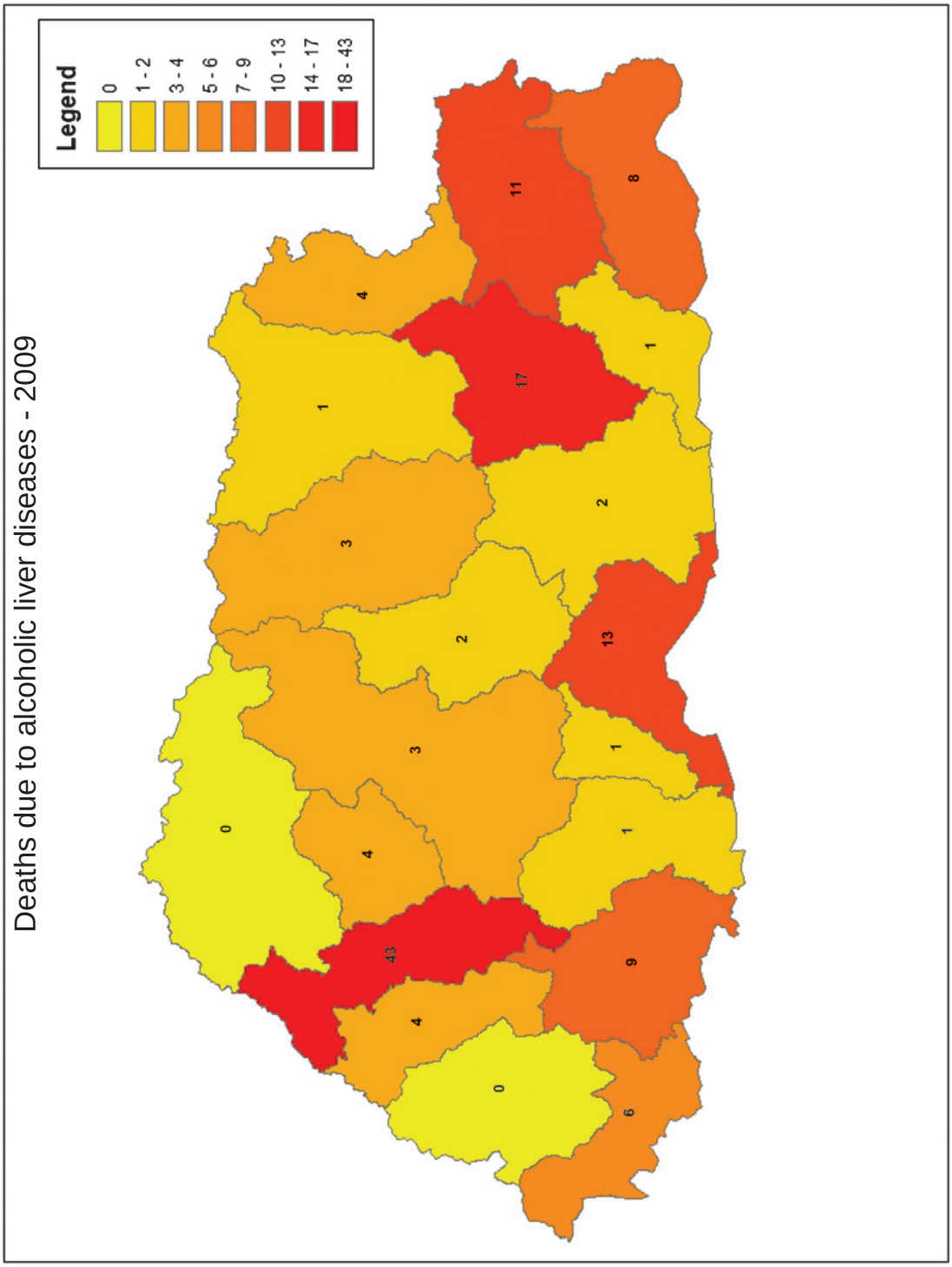
Dzongkhag	Hospital	Basic Health Unit	No. of ORC	
			With Shed	Without Shed
Tsirang	Damphu		3	1
		Khorsaney	2	0
		Tsirangtoe	2	1
		Mendrelgang	2	0
		Pataley	2	0
Total	1	4	11	2
Wangdi Phodrang	Tencholing RBA		0	0
		Bajo I	1	0
		Gaselo	3	0
		Sephu	2	1
		Phobjikha	2	0
		Dangchu	2	0
		Kamichu	3	1
		Uma	0	0
		Samtegang	1	2
		Jalla	1	1
		Teki	2	1
Total	1	10	17	6
Zhemgang	Yebilaptsa		5	1
		Zhemgang I	1	0
		Buli	2	1
		Shingkhar	3	1
		Khomshar	1	1
		Langdurbi	1	1
		Tshaidang	1	2
		Gongphu	1	0
		Pantang	4	0
		Goshing	2	1
		Kaktong	1	0
		Bjoka	2	1
		Pangbang I	3	1
		Kradithang	0	1
		Manas	0	0
Total	1	14	27	11
National	30	181	418	100

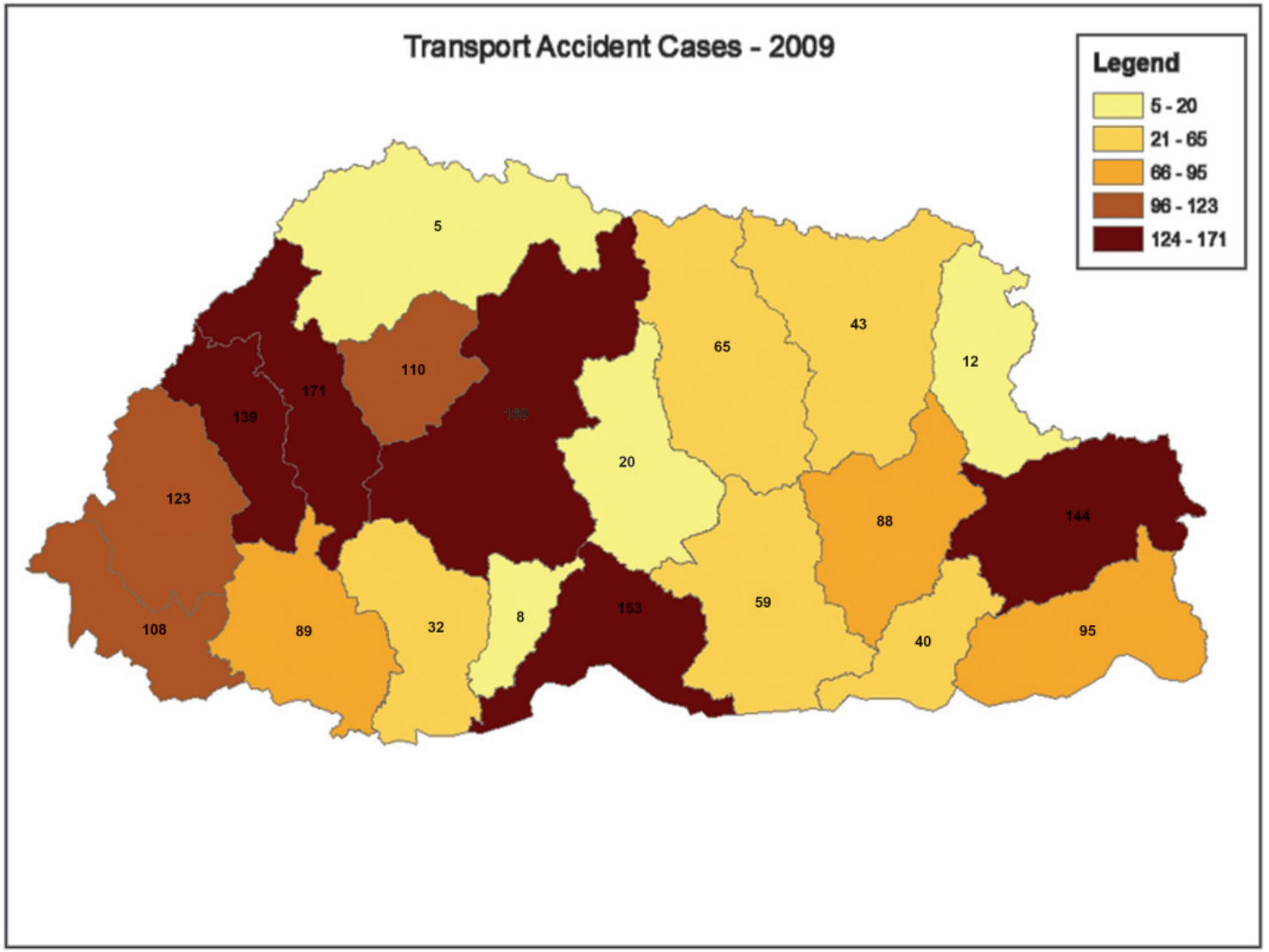
** New BHU opened at Shingchula under Chukha Dzongkhag & Soi and Chang Gigi Satellite under Thimphu in 2009*

Table 31

Availability of telephone and electricity connection in health centres

S#	Dzongkhag	Telephone		Electricity	
		Yes	No	Yes	No
1	Bumthang	4	1	3	2
2	Chukha	12	0	8	4
3	Dagana	9	0	4	5
4	Gasa	2	2	2	2
5	Haa	4	1	3	2
6	Lhuntse	9	3	8	4
7	Mongar	19	6	14	11
8	Paro	3	1	4	0
9	Pemagatshel	12	1	7	6
10	Punakha	7	0	7	0
11	Samdrupjongkhar	9	1	5	5
12	Samtse	11	1	6	6
13	Sarpang	8	4	7	5
14	Thimphu	10	3	11	2
15	Trashigang	16	6	20	2
16	Trashiyangtse	8	0	8	0
17	Trongsa	7	0	2	5
18	Tsirang	5	0	1	4
19	Wangdue Phodrang	10	1	8	3
20	Zhemgang	13	2	4	11
Total		178	33	132	79


Deaths due to alcoholic liver diseases - 2009
Legend
0
1 - 2
3 - 4
5 - 6
7 - 9
10 - 13
14 - 17
18 - 43
11
8
4
1
17
1
2
3
2
13
3
1
0
4
1
43
9
4
0
6


Transport Accident Cases - 2009
Legend
5 - 20
21 - 65
66 - 95
96 - 123
124 - 171
5
110
171
139
123
108
89
32
8
153
20
65
43
12
88
144
59
40
95