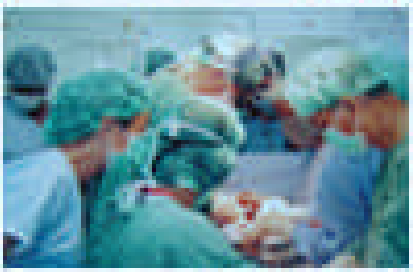
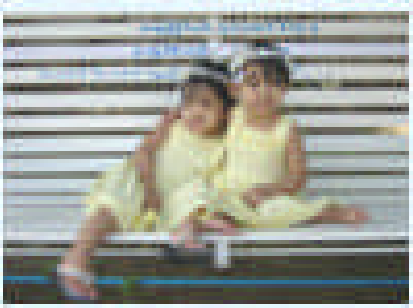




Ministry of Health

Health in Myanmar

2008

CONTENTS

Guidelines related to Health Sector by H.E. Lt. General Thiha Thura Tin Aung Myint Oo, Secretary (1) of the State Peace and Development Council Chairman of the National Health Committee

- The government is taking systematic measures for uplift of health and fitness of the entire people, with the concept that health and fitness of the people reflects the development of the nation and it is also a priceless resource for national development.
- Arrangements are being made for each and every citizen to enjoy the public health care services as their social rights.

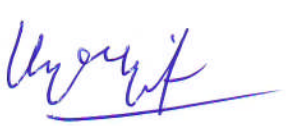
Foreword by H.E. Professor Dr. Kyaw Myint, Minister for Health

Major advances in health care technology and public health science have protected and saved millions more lives than before with significant improvement in longevity globally. Yet many health challenges still remain and this situation is further aggravated by current climatic conditions. The earth is warming and the warming is accelerating. This will definitely bring adverse health consequences, hampering global efforts to improve health.

Provision of health services form only part of the measures to bring about health and longevity. Remaining forces that determine health or illness are many and vary, majority of them being beyond the ability of health sector to cope with. Health and medical technology, though necessary, alone will not be sufficient to solve all the health problems. Better understanding of the context in which health or diseases prevail is necessary to ensure interventions are effective and reach all those in need.

Notwithstanding resource constraints as a developing country, Myanmar health sector could make substantial achievements in raising the health status of the people. Guidance and support of the State, selfless efforts of health professional and work force and collaboration of national and international partners have contributed significantly to the achievements that have been made in the health sector. Social and volunteer organizations in the country, investing much of their time and efforts to collaborate with the Ministry of Health, also play a crucial role in realizing these achievements. We need to strengthen existing partnership further to face any new health challenges.

This publication, 10th in the annual series, provides a brief account of Myanmar health system along with its efforts and achievements made in raising the health status of the people. Myanmar will keep on honoring its commitments to involve in the collective global efforts to ensure highest level of health for the people all over the world.



Professor Dr. Kyaw Myint

Minister for Health

COUNTRY PROFILE

Location

MYanmar, approximately the size of France and England combined, is the largest country in mainland South-East Asia with a total land area of 676,578 square kilometers. It stretches 2200 kilometers from north to south and 925 kilometers from east-west at its widest point. Lying between 09°32' N and 28°31'N latitudes and 92°10' E and 101°11' E longitudes, it is bounded on the north and north-east by the People's Republic of China, on the east and south-east by the Lao People's Democratic Republic and the Kingdom of Thailand, on the west and south by the Bay of Bengal and Andaman Sea, on the west by the People's Republic of Bangladesh and the Republic of India.

Geography

The country is divided administratively, into 14 States and Divisions. It consists of 66 districts, 325 townships, 60 subtownships, 2781 wards, 13714 village tracts and 64910 villages. Myanmar falls into three well marked natural divisions, the western hills, the central belt and the Shan plateau on the east, with a continuation of this high land in the Tanintharyi.

Three parallel chains of mountain ranges from north to south divide the country into three river systems, the Ayeyarwaddy, Sittaung and Thanlwin. Myanmar has abundant natural resources including land, water, forest, coal, mineral and marine resources, and natural gas and petroleum. Great diversity exists between the regions due to the rugged terrain in the hilly north which makes communication difficult. In the southern plains and swampy marshlands there are numerous rivers and tributaries criss-crossing the land in many places.

Climate

Myanmar enjoys a tropical climate with three distinct seasons, the rainy, the cold and the hot season. The rainy season comes with the southwest monsoon, lasting from mid-May to mid-October, followed by the cold season from mid-October to mid-February. The hot season preceeds rainy season and lasts from mid-February to mid-May.

During the 10 years period covering 1995-2004, the average rainfall in the Coastal regions of the Rakhine and Tanintharyi was ranging between 4000 mm and 5600 mm annually. The Ayeyarwady delta had a rainfall of about 3300 mm, the mountains in the extreme north had between 1800 mm and 2400 mm and the hills of the east between 1200 mm and 1400 mm. The dry zone had between 600 and 1400 mm due to the Rakhine Yomas (hills) cutting off the monsoon. The average temperature experienced in the delta ranged between 22°C to 32°C, while in the dry zone, it was between 20°C and 34°C. The temperature was between 16°C and 29°C in hilly regions and even lower in Chin state ranging between 10°C and 23°C.

Demography

The population of Myanmar in 2006-2007 is estimated at 56.515 million with the growth rate of 2.02 percent. About 70 percent of the population resides in the rural areas, whereas the remaining are urban dwellers.

The population density for the whole country is 77 per square kilometers and ranges from 595 per square kilometers in Yangon Division, where in lies the city of Yangon, to 14 per square kilometers in Chin State, the western part of the country.

Estimates of population and it's structure (1980-2006)

Population / Structure (in million)	1980-81		1990-91		2000-01		2005-06		2006-07	
	Estimate	%	Estimate	%	Estimate	%	Estimate	%	Estimate	%
0-14 years	13.03	38.77	14.70	36.05	16.43	32.77	18.04	32.57	18.37	32.50
15-59 years	18.44	54.86	23.47	57.55	29.72	59.29	32.74	59.10	33.41	59.11
60 years and above	2.14	6.37	2.61	6.4	3.98	7.94	4.62	8.33	4.74	8.39
Total	33.61	100	40.78	100	50.13	100	55.40	100	56.52	100
Female	16.93	50.37	20.57	50.28	25.22	50.31	27.86	50.29	28.42	50.28
Male	16.68	49.63	20.21	49.72	24.91	49.69	27.54	49.71	28.10	49.72
Sex Ratio (M /100 F)	98.52		98.25		98.77		98.86		98.87	

Source: Planning Department, Ministry of National Planning and Economic Development

People and Religion

The Union of Myanmar is made up of 135 national groups speaking over 100 languages and dialects. The major ethnic groups are Kachin, Kayah, Kayin, Chin, Mon, Bamar, Rakhine and Shan. About 89.4% of the population mainly Bamar, Shan, Mon, Rakhine and some Kayin are Buddhists. The rest are Christians, Muslims, Hindus and Animists.

Economy

Myanmar is a country with a large land area rich in natural and human resources. Cognizant of the fact that the agricultural sector can contribute to overall economic growth of the country the government has accorded top priority to agricultural development as the base for all round development of the economy as well.

Following the adoption of market oriented economy from centralized economy the government has carried out liberal economic reforms to ensure participation of private sector in every sphere of economic activities.

Encouragement for the development of the industrial sector has been provided since 1995. In order to support and to render assistance to small and medium size industries scattered all over the countries in an organized manner, the government has established 19 industrial zones in states and divisions.

Social Development

Development of social sector has kept pace with economic development. Expansion of schools and institutes of higher education has been considerable especially in the States and Divisions. Adult literacy rate for the year 2005 was 94.1% while school enrolment rate was 97.58%, increasing respectively from 79.7% and 67.13% in 1988. Expenditure for health and education have risen considerably, equity and access to education and health and social services have been ensured all over the country.

With prevalence of tranquility, law and order in the border regions, social sector development can be expanded throughout the country. Twenty four special development regions have been designated in the whole country where health and education facilities are developed or upgraded along with other development activities. Some towns or villages in these regions have also been upgraded to sub-township level with development of infrastructure to ensure proper execution of administrative, economic and social functions.

Gross Domestic Product (kyats in million)

GDP	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05▲
Current	1609775.6	2190319.7	2552732.5	3548472.2	5625254.7	7716616.2	9078928.5
Constant Producers' Prices	79460.2▲	88157.0▲	100274.8▲	2842314.4▲	3184117.3▲	3624926.4▲	4119434.8▲
Growth (%)	5.8	10.9	13.7	11.3	12.0	13.8	13.6

Source: Statistical Year Book 2005, CSO

▲ Provisional actual ▲ 1985-86 Constant Producers' Prices ▲ 2000-01 Constant Producers' Prices

MYANMAR HEALTH CARE SYSTEM

Myanmar health care system evolves with changing political and administrative system and relative roles played by the key providers are also changing although the Ministry of Health remains the major provider of comprehensive health care. It has a pluralistic mix of public and private system both in the financing and provision. Health care is organized and provided both by public and private providers.

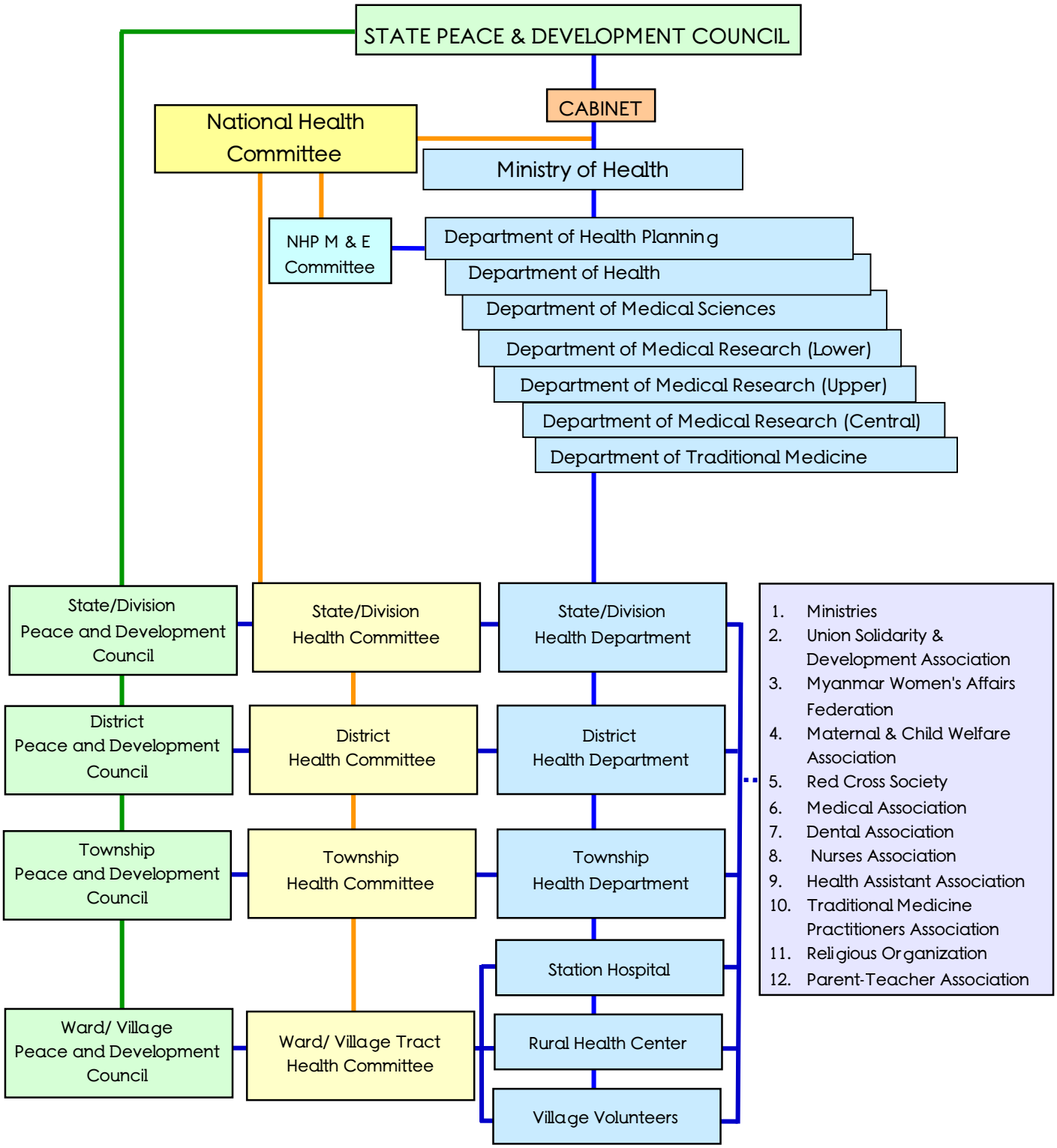
Ministry of Health is the main organization of health care provision. Department of Health one of 7 departments under the Ministry of Health plays a major role in providing comprehensive health care through out the country including remote and hard to reach border areas. Some ministries are also providing health care, mainly curative, for their employees and their families. They include Ministries of Defense, Railways, Mines, Industry I, Industry II, Energy, Home and Transport. Ministry of Labour has set up two general hospitals, one in Yangon and the other in Mandalay, and one TB hospital in Hlaingtharyar (Yangon) to render services to those entitled under the social security scheme. Ministry of Industry (1) is running a Myanmar Pharmaceutical Factory and producing medicines and therapeutic agents to meet the domestic needs.

The private, for profit, sector is mainly providing ambulatory care though some providing institutional care has developed in Yangon, Mandalay and some large cities in recent years. Funding and provision of care is fragmented. They are regulated in conformity with the provisions of the law relating to Private Health Care Services. General Practitioners' Section of the Myanmar Medical Association with its branches in townships provide these practitioners the opportunities to update and exchange their knowledge and experiences by holding seminars, talks and symposia on currently emerging issues and updated diagnostic and therapeutic measures. The Medical Association and its branches also provide a link between them and their counterparts in public sector so that private practitioners can also participate in public health care activities.

One unique and important feature of Myanmar health system is the existence of traditional medicine along with allopathic medicine. Traditional medicine has been in existence since time immemorial and except for its waning period during colonial administration, when allopathic medical practices had been introduced and flourishing, it is well accepted and utilized by the people through out the history. With encouragement of the State scientific ways of assessing the efficacy of therapeutic agents, nurturing of famous and rare medicinal plants, exploring, sustaining and propagation of treatises and practices can be accomplished. There are a total of 14 traditional hospitals run by the State in the country. Traditional medical practitioners have been trained at an Institute of Traditional Medicine and with the establishment of a new University of Traditional Medicine conferring a bachelor degree more competent practitioners can now be trained and utilized. There are quite a number of private traditional practitioners and they are licensed and regulated in accordance with the provisions of related laws.

In line with the National Health Policy NGOs such as Myanmar Maternal and Child Welfare Association, Myanmar Red Cross Society are also taking some share of service provision and their roles are also becoming important as the needs for collaboration in health become more prominent. Sectoral collaboration and community participation is strong in Myanmar health system thanks to the establishment of the National Health Committee in 1989. Recognizing the growing importance of the needs to involve all relevant sectors at all administrative levels and to mobilize the community more effectively in health activities health committees have been established in various administrative levels down to the wards and village tracts. These committees at each level are headed by the chairman or responsible person of the organs of power concern and include heads of related government departments and representatives from the social organizations as members. Heads of the health departments are designated as secretaries of the committees.

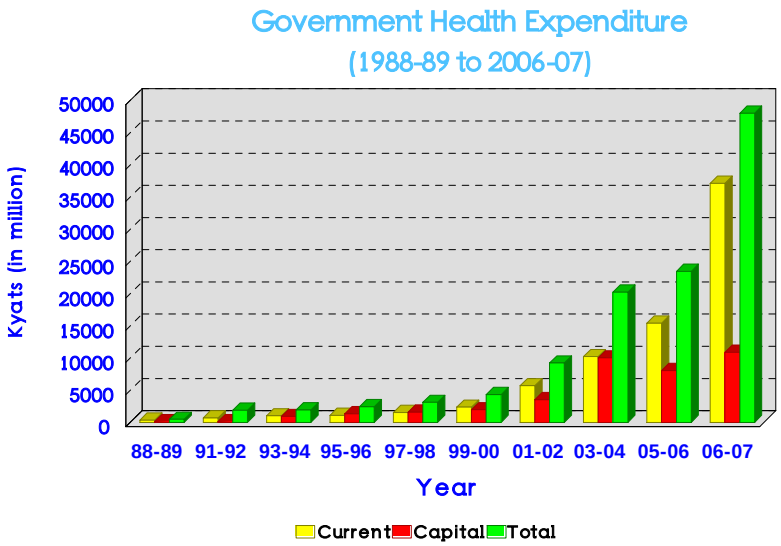
Health Service Delivery System



Financing Health

The major sources of finance for health are the government and the private households.

Government has increased health spending on both current and capital yearly. Total government health expenditure increased from kyats 464.1million in 1988-89 to kyats 48017.3 million in 2006-2007.



Governmental Health Expenditures by Functions (1998-2001)

Million Kyats

Functions	1998	1999	2000	2001
Services of Curative & Rehabilitative Care (%)	698.409 (22.34)	1001.226 (23.17)	2581.648 (33.58)	2724.353 (29.57)
Ancillary Services to Medical Care (%)	6.186 (0.2)	5.389 (0.12)	14.448 (0.19)	15.519 (0.17)
Medical Goods Dispensed to Patients (%)	315.665 (10.09)	377.609 (8.74)	427.884 (5.57)	596.272 (6.47)
Prevention & Public Health Services (%)	240.506 (7.69)	266.536 (6.17)	860.502 (11.19)	870.536 (9.45)
Health Administration & Insurance (%)	120.975 (3.87)	222.859 (5.16)	379.103 (4.93)	346.196 (3.76)
Not Specified in Kind (%)	357.072 (11.42)	368.399 (8.52)	578.167 (7.52)	777.898 (8.44)
Health Related Functions* (%)	1388.087 (44.39)	2079.382 (48.12)	2846.448 (37.02)	3881.726 (42.14)
Total Health Expenditure (%)	3126.9 (100)	4321.4 (100)	7688.2 (100)	9212.5 (100)

**Health related functions include training and production of human resources for health and health research.*

Social Health Insurance

Social security scheme was implemented in accordance with 1954 Social Security Act by the Ministry of Labour. According to the law factories, workshops and enterprises that have over 5 employees whether State owned, private, foreign or joint ventures, must provide the employees with social security coverage. The contribution is tri-partite with 2.5% by the employer 1.5% by the employee of the designated rate while the government contribution is in the form of capital investment. Insured workers under the scheme are provided free medical treatment, cash benefits and occupational injury benefit. One 250-bedded Workers' Hospital in Yangon, one 150-bedded Workers' Hospital in Mandalay and one 100-bedded TB Hospital in Hlaingtharyar has been established along with 89 dispensaries and 2 mobile medical units.

HEALTH POLICY, PLANS AND LEGISLATION

Chairman of the State Peace and Development Council,
Senior General Than Shwe inspecting the
Pyin Oo Lwin Hospital and giving guidance

Vice Chairman of the State Peace and Development Council,
Vice Senior General Maung Aye inspecting the
Department of Medical Research (Upper Myanmar) and providing necessary instructions

National Health Committee (NHC)

The National Health Committee (NHC) was formed on 28 December 1989 as part of the policy reforms. It is a high level inter-ministerial and policy making body concerning health matters. The National Health Committee takes the leadership role and gives guidance in implementing the health programmes systematically and efficiently. The high level policy making body is instrumental in providing the mechanism for intersectoral collaboration and co-ordination. It also provides guidance and direction for all health activities. Under the guidance of the National Health Committee various health committees had been formed at each administrative level.

For the monitoring and evaluation purpose, National Health Plan Monitoring and Evaluation Committee has been formed at the central level. Built-in monitoring and evaluation process is undertaken at State/Division and Township level on regular basis. Implementation of National Health Plan at various levels is carried out in collaboration and co-operation with health related sectors and NGOs.

Composition of National Health Committee

1.	Secretary (1), State Peace and Development Council	Chairman
2.	Minister, Ministry of Health	Member
3.	Minister, Ministry of National Planning and Economic Development	Member
4.	Minister, Ministry of Home Affairs	Member
5.	Minister, Ministry for Progress of Border Areas and National Races and Development Affairs	Member
6.	Minister, Ministry of Social Welfare, Relief and Resettlement	Member
7.	Minister, Ministry of Science and Technology	Member
8.	Minister, Ministry of Education	Member
9.	Minister, Ministry of Sports	Member
10.	Minister, Ministry of Immigration and Population	Member
11.	Mayor, Nay Pyi Taw	Member
12.	Director, Directorate of Medical Services, Ministry of Defence	Member
13.	Deputy Minister, Ministry of Health	Secretary
14.	Director General, Department of Health Planning, Ministry of Health	Joint Secretary

National Health Policy

The National Health Policy was developed with the initiation and guidance of the National Health Committee in 1993. The National Health Policy has placed the Health For All goal as a prime objective using Primary Health Care approach. The National Health Policy is designated as follows:

1.	To raise the level of health of the country and promote the physical and mental well-being of the people with the objective of achieving "Health for all" goal, using primary health care approach.
2.	To follow the guidelines of the population policy formulated in the country.
3.	To produce sufficient as well as efficient human resources for health locally in the context of broad frame work of long term health development plan.
4.	To strictly abide by the rules and regulations mentioned in the drug laws and by-laws which are promulgated in the country.
5.	To augment the role of co-operative, joint ventures, private sectors and non-governmental organizations in delivering of health care in view of the changing economic system.
6.	To explore and develop alternative health care financing system.
7.	To implement health activities in close collaboration and also in an integrated manner with related ministries.
8.	To promulgate new rules and regulations in accord with the prevailing health and health related conditions as and when necessary.
9.	To intensify and expand environmental health activities including prevention and control of air and water pollution.
10.	To promote national physical fitness through the expansion of sports and physical education activities by encouraging community participation, supporting outstanding athletes and reviving traditional sports.
11.	To encourage conduct of medical research activities not only on prevailing health problems but also giving due attention in conducting health system research.
12.	To expand the health service activities not only to rural but also to border areas so as to meet overall health needs of the country.
13.	To foresee any emerging health problem that poses a threat to the health and well-being of the people of Myanmar, so that preventive and curative measures can be initiated.
14.	To reinforce the services and research activities of indigenous medicine to international level and to involve in community health care activities.
15.	To strengthen collaboration with other countries for national health development.

Health Development Plans

With the objective of uplifting the health status of the entire nation, the Ministry of Health is systematically developing Health Plans, aiming towards Health for All Goal. From 1978 onwards four yearly People's Health Plans have been drawn up and implemented. Since 1991, short term National Health Plans have been developed and implemented.

Myanmar Health Vision 2030

Considering the rapid changes in demographic, epidemiological and economic trends both nationally and globally, a long-term (30 years) health development plan has been drawn up to meet any future health challenges. The plan is developed within the broad framework of the national objectives i.e. political, economic and social objectives of the country. This long term visionary plan with its objectives will be a guide on which further short-term national health plans are to be developed.

Objectives

- To uplift the Health Status of the people.
- To make communicable diseases no longer public health problems, aiming towards total eradication or elimination and also to reduce the magnitude of other health problems.
- To foresee emerging diseases and potential health problems and make necessary arrangements for the control.
- To ensure universal coverage of health services for the entire nation.
- To train and produce all categories of human resources for health within the country.
- To modernize Myanmar Traditional Medicine and to encourage more extensive utilization.
- To develop Medical Research and Health Research up to the international standard.
- To ensure availability in sufficient quantity of quality essential medicine and traditional medicine within the country.
- To develop a health system in keeping with changing political, economic, social and environmental situation and changing technology.

Main components of the Plan

- Health Policy and Law
- Health Promotion
- Health Service Provision
- Development of Human Resources for Health
- Promotion of Traditional Medicine
- Development of Health Research
- Role of Co-operative, Joint Ventures, Private Sectors and NGOs
- Partnership for Health System Development
- International Co-operation

Expected Benefits

Improvement in the following indicators:

Indicator	Existing (2001-2002)	2011	2021	2031
Life expectancy at birth	60 – 64	-	-	75 - 80
Infant Mortality Rate/1000 LB	59.7	40	30	22
Under five Mortality Rate/1000 LB	77.77	52	39	29
Maternal Mortality Ratio/1000 LB	2.55	1.7	1.3	0.9

National Health Plan (2006-2011)

The National Health Plan forms an integral part of the National Development Plan and is in tandem with the national economic development plan. The plan will ensure effective implementation of the National Health Policy. It covers the second 5 year period of Myanmar Health Vision 2030. Country's health problems were identified and priority diseases and health conditions were identified and ranked while the National Health Plan (2006-2011) was formulated.

Country's Health Problems

- Need for improvement in rural health care coverage and public health services
- Persistence of disease burden
- Persistence of maternal, infant and child mortality that needs further reduction
- Need of financial mechanism that ensures adequacy, equity and efficiency
- Requirement of systematic plan for human resources for health
- Need for strengthening organization and management of health services
- Under-utilization of health research
- Need of quality data for National Health Information System

Priority Ranking of Identified Diseases and Heath Conditions

Disease/ Health Condition	Rank
Acquired Immune Deficiency Syndrome	1
Malaria	2
Tuberculosis	3
Diarrhoea/Dysentery	4
Cholera	5
Avian Influenza	6
Dengue Haemorrhagic Fever	7
Vaccine Preventable Diseases	8
Protein Energy Malnutrition	9
Postpartum and Ante-partum Haemorrhage	10
Drug Abuse	11
PET and Hypertensive Disorder Pregnancy	12
Leprosy	13
Sexually Transmitted Infections	14
Disasters	15
Anaemia	16
Other Complications of Pregnancy, Child Birth & Puerperium	17
Cardiovascular Diseases	18
Acute Respiratory Tract Infections	19
Accidents and Injuries	20
Abortion	21

Disease/ Health Condition	Rank
Cancer	22
Viral Hepatitis	23
Diabetes Mellitus	24
Worm Infestations	25
Iodine Deficiency Disorders	26
Beri-beri	27
Snake bites	28
Occupational Diseases	29
Tetanus	30
Mental Illness	31
Eye Diseases	32
Enteric Fever	33
Oral Diseases	34
Handicap	35
Meningitis	36
Plague	37
Filariasis	38
ENT Diseases	39
Poisoning	40
Rabies	41
Leptospirosis	42

In ranking priority diseases in the National Health Plan 1993-1996 three diseases Malaria, Tuberculosis and AIDS topped the priority list in that order. In the current national health plan the same diseases are included again as top three priority diseases in the ranked order of AIDS, Malaria and Tuberculosis. AIDS is ranked as the first priority disease because of being accorded highest score on the basis of public health importance and political importance imparted to it and also on the consideration of potential socio-economic impact consequent to it. In terms of disease burden it is observed that malaria and tuberculosis gained higher score than AIDS. Over all AIDS is ranked as the first priority disease because of the higher score, it attained on public health, political and socio-economic perspective.

Objectives of the National Health Plan (2006-2011)

- To facilitate the successful implementation of the social objective, "uplift of health, fitness and educational standards of the entire nation"
- To implement the National Health Policy
- To strive for the development of a health system, that will be in conformity with political, economic and social evolutions in the country as well as global changes
- To enhance the quality of health care and coverage
- To accelerate rural health development activities

Main Components of the Plan

- Community Health Care
- Disease Control
- Hospital Care
- Environmental Health
- Health System Development
- Human Resources for Health
- Health Research
- Traditional Medicine
- Food and Drug Administration
- Laboratory Service
- Health Promotion
- Health Information System

Expected Benefits

National Health Plan 2006-2011 have been formulated within the objective frame of the second five year period of Myanmar Health Vision 2030 and as such is a short term plan to accelerate endeavours to realize the vision of raising the health status of the nation. The plan will carry on the tasks in the previous National Health Plan that still need to be completed and will also be implemented setting sights on reaching health related goals in the Millennium Declaration. In this way the plan will give effect to all round development of the country through raising the health status and will also enable the country as member of the global community to fulfill its roles and responsibilities in the international and regional agenda for health development.

Health Legislation

Legal provision for the interest of health of the people is accomplished through enacting the following health related laws.

1. Public Health Law (1972)	It is concerned with protection of people's health by controlling the quality and cleanliness of food, drugs, environmental sanitation, epidemic diseases and regulation of private clinics.
2. Dental and Oral Medicine Council Law (1989)	Provides basis for licensing and regulation in relation to practices of dental and oral medicine. Describes structure, duties and powers of oral medical council in dealing with regulatory measures.
3. Law relating to the Nurse and Midwife (1990)	Provides basis for registration, licensing and regulation of nursing and midwifery practices and describes organization, duties and powers of the nurse and midwife council.
4. Myanmar Maternal and Child Welfare Association Law (1990)	Describes structure, objectives, membership and formation, duties and powers of Central Council and its Executive Committee.
5. National Drug Law (1992)	Enacted to ensure access by the people safe and efficacious drugs. Describes requirement for licensing in relation to manufacturing, storage, distribution and sale of drugs. It also includes provisions on formation and authorization of Myanmar Food and Drug Board of Authority.
6. Narcotic Drugs and Psychotropic Substances Law (1993)	Related to control of drug abuse and describes measures to be taken against those breaking the law. Enacted to prevent danger of narcotic and psychotropic substances and to implement the provisions of United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances. Other objectives are to cooperate with state parties to the United Nations Convention, international and regional organizations in respect to the prevention of the danger of narcotic drugs and psychotropic substances. According to that law Central Committee for Drug Abuse Control (CCADC), Working Committees, Sectors and Regional Committees were formed to carry out the designated tasks in accordance with provisions of the law. The law also describes procedures relating to registration, medication and deregistration of drug users.

7. Prevention and Control of Communicable Diseases Law (1995)	Describes functions and responsibilities of health personnel and citizens in relation to prevention and control of communicable diseases. It also describes measures to be taken in relation to environmental sanitation, reporting and control of outbreaks of epidemics and penalties for those failing to comply. The law also authorizes the Ministry of Health to issue rules and procedures when necessary with approval of the government.
8. Eye Donation Law (1996)	Enacted to give extensive treatment to persons suffering from eye diseases who may regain sight by corneal transplantation. Describes establishment of National Eye Bank Committee and its functions and duties, and measures to be taken in the process of donation and transplantation.
9. Traditional Drug Law (1996)	Concerned with labeling, licensing and advertisement of traditional drugs to promote traditional medicine and drugs. It also aims to enable public to consume genuine quality, safe and efficacious drugs. The law also deals with registration and control of traditional drugs and formation of Board of Authority and its functions.
10. National Food Law (1997)	Enacted to enable public to consume food of genuine quality, free from danger, to prevent public from consuming food that may cause danger or are injurious to health, to supervise production of controlled food systematically and to control and regulate the production, import, export, storage, distribution and sale of food systematically. The law also describes formation of Board of Authority and its functions and duties.
11. Myanmar Medical Council Law (2000)	Enacted to enable public to enjoy qualified and effective health care assistance, to maintain and upgrade the qualification and standard of the health care assistance of medical practitioner, to enable studying and learning of the medical science of a high standard abreast of the times, to enable a continuous study of the development of the medical practitioners, to maintain and promote the dignity of the practitioners, to supervise the abiding and observing in conformity with the moral conduct and ethics of the medical practitioners. The law describes the formation, duties and powers of the Myanmar Medical Council and the rights of the members and that of executive committee, registration certificate of medical practitioners, medical practitioner license, duties and rights of registered medical practitioners and the medical practitioner license holders.

12. Traditional Medicine Council Law (2000)	Enacted to protect public health by applying any type of traditional medicine by the traditional medical practitioners collectively, to supervise traditional medical practitioners for causing abidance by their rules of conduct and discipline, to carry out modernization of traditional medicine in conformity with scientific method, to cooperate with the relevant government departments, organizations and international organization of traditional medicine. The law describes formation, duties and powers of the traditional medical council, registration as the traditional medical practitioners and duties and registration of the traditional medical practitioners.
13. Blood and Blood Products Law (2003)	Enacted to ensure availability of safe blood and blood products by the public. Describes measures to be taken in the process of collection and administration of blood and blood products and designation and authorization of personnel to oversee and undertake these procedures.
14. Body Organ Donation Law (2004)	Enacted to enable saving the life of the person who is required to undergo body organ transplant by application of body organ transplant extensively, to cause rehabilitation of disabled persons due to dysfunction of body organ through body organ donors, to enable to carry out research and educational measures relating to body organ transplant and to enable to increase the numbers of body organ donors and to cooperate and obtain assistance from government departments and organizations, international organizations, local and international NGOs and individuals in body organ transplant.
15. The Control of Smoking and Consumption of Tobacco Product Law (2006)	Enacted to convince the public that smoking and consumption of tobacco product can adversely affect health, to make them refrain from the use, to protect the public by creating tobacco smoke free environment, to make the public, including children and youth, lead a healthy life style by preventing them from smoking and consuming tobacco product, to raise the health status of the people through control of smoking and consumption of tobacco product and to implement measures in conformity with the international convention ratified to control smoking and consumption of tobacco product.

16. The Law Relating to Private Health Care Services (2007)	Enacted to develop private health care services in accordance with the national health policy, to enable private health care services to be carried out systematically as and integrated part in the national health care system, to enable utilizing the resources of private sector in providing health care to the public effectively, to provide choice of health care provider for the public by establishing public health care services and to ensure quality services are provided at fair cost with assurance of responsibility.

HEALTH INFRASTRUCTURE

Objectives and Strategies

To realise one of the social objectives of "Uplifting health, fitness and education standards of the entire nation", the Ministry of Health has laid down the following objectives.

1. To enable every citizen to attain full life expectancy and enjoy longevity of life.

2. To ensure that every citizen is free from diseases.

To realise these objectives, all health activities are implemented in conformity with the following strategies.

1. Widespread disseminations of health information and education to reach the rural areas.

2. Enhancing disease prevention activities.

3. Providing effective treatment of prevailing diseases.

Ministry of Health

The Ministry of Health is the major organization responsible for raising the health status of the people and accomplishes this through provision of comprehensive health services, viz promotive, preventive, curative and rehabilitative measures.

The Ministry of Health is headed by the Minister who is assisted by two Deputy Ministers. The Ministry has seven functioning departments, each under a Director General. They are Department of Health Planning, Department of Health, Department of Medical Science, Department of Medical Research (Lower Myanmar), Department of Medical Research (Upper Myanmar), Department of Medical Research (Central Myanmar) and Department of Traditional Medicine. All these departments are further divided according to their functions and responsibilities.

Maximum community participation in health activities is encouraged. Collaboration with related departments and social organizations has been promoted by the ministry.

Department of Health Planning

The Department of Health Planning comprises of the following divisions:

- Planning Division
- Health Information Division
- Research and Development Division
- Co-ordination Division

For optimum utilization of human, monetary and material resources, in the context of the National Health Policy and with the need to provide comprehensive health services, it is necessary to systematically develop health plans. The availability of reliable statistics and information is a vital prerequisite in such an effort. The Department of Health Planning is responsible for formulating the National Health Plan and for supervision, monitoring and evaluation of the National Health Plan implementation. The Department also compiles health data and disseminates health information.

Department of Health

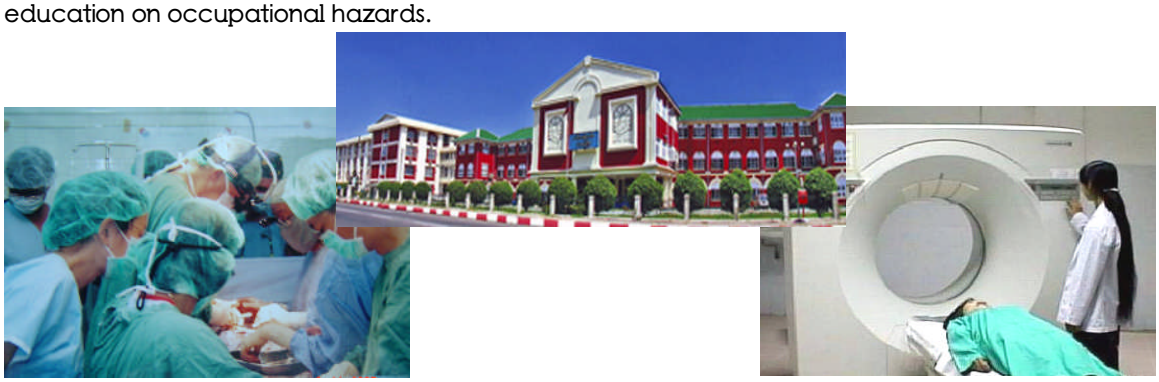
The Department of Health, one of the seven departments under the Ministry of Health is responsible for providing health care services to the entire population in the country.

Under the supervision of the Director General and Deputy Directors General, there are 9 Directors who are leading and managing the following divisions.

- Administration
- Planning
- Public Health
- Medical Care
- Disease Control
- Food and Drug Administration
- National Health Laboratory
- Occupational Health
- Nursing

Among these divisions, the public health division is responsible for primary health care and basic health services, nutrition promotion and research, environmental sanitation, maternal and child health services and school health services. The medical care division is responsible for setting hospital specific goals and management of hospital services. The division also undertakes procurement, storage and distribution of medicines, medical instruments and equipment for all health institutions. Functions of the disease control division cover prevention and control of infectious diseases, disease surveillance, outbreak investigation and response and capacity building.

Food and drug administration division is responsible for registration and licensing of drugs and food, quality control of registered drugs, processed food, imported food and food for export. The National Health Laboratory is responsible for routine laboratory investigation, special lab-taskforce and public health work, training, research and quality assurance. Occupational health division takes the responsibility for health promotion in work places, environmental monitoring of work places and biological monitoring of exposed workers. The division is also providing health education on occupational hazards.



Department of Traditional Medicine

Traditional Medicine promotion office was established under the Department of Health in 1953. It was organized as a division in 1972 managed by an Assistant Director who was responsible for the development of the services under the technical guidance of the State Traditional Medicine Council. It became the focal point for all the activities related to traditional medicine.

The Government upgraded the division to a separate Department in August 1989. It was reorganized and expanded in 1998, to provide comprehensive traditional medicine services through existing health care system in line with the National Health Plan. The other objectives of the department are to review and explore means to develop safe and efficacious new therapeutic agents and medicine and to produce competent traditional medicine practitioners.

National Herbal Park in Nay Pyi Taw

Department of Medical Science

The Department of Medical Science is responsible for training and production of all categories of health personnel with the objective to produce appropriate mix of competent Human Resources for Health for successful implementation of the National Health vision and mission.

The department has five divisions which are Graduate/ Nursing Training Division, Postgraduate Training & Planning Division, Foreign Relation & Library Division, Administrative & Budget Division and Medical Resource Center.

The Department of Medical Science supervises the educational programmes and training processes for quality improvement.

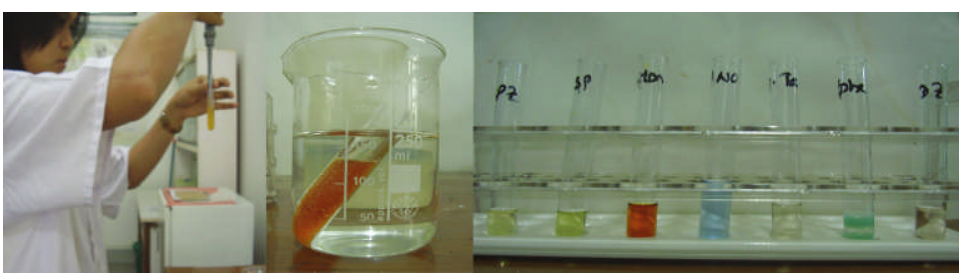
Training of Human Resources for Health

Department of Medical Research
(Lower Myanmar)

The Department of Medical Research (Lower Myanmar) is organized with 22 research divisions, 8 supporting divisions and 8 clinical research units of various disciplines. Under the guidance of the Ministry of Health, it is striving to achieve the goals of the National Health Plan by promoting, supporting, organizing, coordinating and collaborating in carrying out the effective health research with national as well as international departments, universities, organizations and agencies. Provision of training and research facilities to the post graduate students from universities under the Ministry of Health, Ministry of Education and Ministry of Science and Technology is one of the major activities of the department. The Department is also promoting research activities by organizing the Myanmar Health Research Congress and Research Methodology workshop annually as well as many other workshops, seminars and scientific talks and technical training activities of nationally relevant health issues regularly.

Detection of Aflatoxin in Chili Powder by High Performance Liquid Chromatography

ETHOS-E (Microwave Solvent Extraction Labstation) for Digestion of Heavy Metal Samples



Screening and Identification of Unknown Drug Poisoning in Poison Screening Laboratory, NPCC

Department of Medical Research
(Upper Myanmar)

In 2001, Department of Medical Research (Upper Myanmar) was established in Sitha, Pyin Oo Lwin Township. Traditional medicine research is one of the main missions of the department. Herbal medicinal plants all over the country are collected and nurtured in the herbal garden of the department. Up to now, 470 medicinal plant species are being grown in the herbal garden.

Research activities concerned with Traditional Medicines include study on efficacy of medicinal plants, traditional medicine formulations and popular drugs which are currently being sold in the market of Myanmar especially in the treatment of diabetes mellitus, hypertension, malaria, diarrhea and dysentery are mainly conducted in the department.

Meetings on indigenous medicine research are held regularly in cooperation with other partner departments under Ministry of Health. To strengthen the research capacity of the department, workshops on reproductive health and malaria research were conducted with consultants from World Health Organization (WHO). Moreover basic research, applied research and health system research are being carried out in collaboration with 200 bedded Hospital (Pyin Oo Lwin), Children Hospital (Mandalay), Central Women's Hospital (Mandalay), University of Medicine (Mandalay), University of Pharmacy (Mandalay), Vector Borne Disease Control Programme (Upper Myanmar), National Tuberculosis Programme (Upper Myanmar) and Public Health Laboratory (Upper Myanmar).

Department of Medical Research (Central Myanmar)

The Department of Medical Research (Central Myanmar) is situated in Central Myanmar, Nay Pyi Taw and has become operational since 2003. The aim of the Department is to promote the health status of the people of Myanmar. The missions of the Department include: (a) to conduct biomedical research, clinical research, and social medicine research; (b) to collaborate with other departments and universities under Ministry of Health; and (c) to provide the infrastructure necessary for effective traditional and biomedical research.

Since its establishment, the Department of Medical Research (Central Myanmar) has carried out research studies focusing on communicable diseases prevalent in the central Myanmar. During 2007, the Department has carried out research in malaria, tuberculosis, diabetes mellitus, cancer, snake bite, and viral hepatitis. The findings have contributed in the diagnosis, management, prevention, control, and in the understanding of aetiology and pathogenesis of these health problems.

HEALTH SERVICES IN MYANMAR

The Ministry of Health is providing comprehensive health services covering promotive, preventive, curative and rehabilitative aspects to raise the health status and prolong the lives of the citizens. With the objective of achieving Health for All goals, successive National Health Plans have been developed and implemented in accordance with the guidelines of the National Health Policy.

The basic health staff down to the grass root level are providing promotive, preventive, curative and rehabilitative services through Primary Health Care approach. Infrastructure for service delivery is based upon sub-rural health centre and rural health centre where Midwives, Lady Health Visitor and Health Assistant are assigned to provide primary health care to the rural community.

Those who need special care are referred to Station Hospital, Township Hospital, District Hospital and to Specialist Hospital successively. At the State/Divisional level, the State/Divisional Health Department is responsible for State/ Divisional planning, coordination, training and technical support, close supervision, monitoring and evaluation of health services. At the peripheral level, i.e. the township level actual provision of health services to the community is undertaken. The Township Health Department forms the back bone for primary and secondary health care, covering 100,000 to 200,000 people.

In each township, there is a township hospital which may be 16/25 or 50 bedded depending on the size of population of the township. Each township has at least one or two station hospitals and 4-7 RHCs under its jurisdiction to provide health services to the rural population. Urban Health Center, School Health Team and Maternal and Child Health Center are taking care for urban population, in addition to the specifically assigned functions. Each RHC has four sub-centres covered by a midwife and public health supervisor grade 2 at the village level. In addition there are voluntary health workers (community health worker and auxiliary midwives) in outreach villages providing Primary Health Care to the community.

The main areas of service delivery and support activities are presented here:

1. Health Service Delivery in the context of Primary Health Care
2. Services for the Target Population Group
3. Promoting Health, Ensuring Healthy Environment and Protecting Consumers
4. Controlling Communicable Diseases

1 Health Service Delivery in the context of Primary Health Care

Basic Health Services

Basic health service is one of the essential components of rural health development scheme. Access to health care for 70% of country population residing in rural areas has been improved through the expansion of health manpower in terms of basic health staffs and voluntary health workers, i.e. community health workers and auxiliary midwives.

Basic health services unit, public health section of department of health is responsible for implementation of health care activities especially for rural areas through primary health care approach. It also initiated to strengthen the capacity not only among basic health staffs also the voluntary health workers, improving management in delivering the health services.

Annual recruitment of 1200 new community health workers (CHW) from the townships has been carried out and followed by provision of training on conceptualization for basic health services along with refresher trainings for 1200 old community health workers.

Basic health staffs have been providing health care services in terms of maternal and child health care, nutrition promotion, school health, environmental health, expanded programme of immunization and disease control activities, such as TB, Malaria, HIV/AIDS, Leprosy, and other communicable diseases, including emergency response in case of disaster to cover 70% of country population, residing especially in rural areas.

They also have to collect the data on health and health related sectors followed by monthly reporting for monitoring, supervision and mid-year and yearly evaluation.

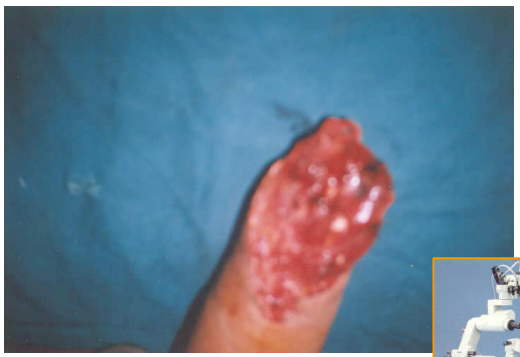
Curative Services

Different categories of public health institutions, ranging from General Hospitals, Specialist Hospitals, Teaching Hospitals, State/Division Hospitals, District Hospitals, Township and Sub-township Hospitals are providing curative services in urban, while Station Hospitals, Rural Health Centres and Sub-Rural Health Centres are providing curative services in the rural area.

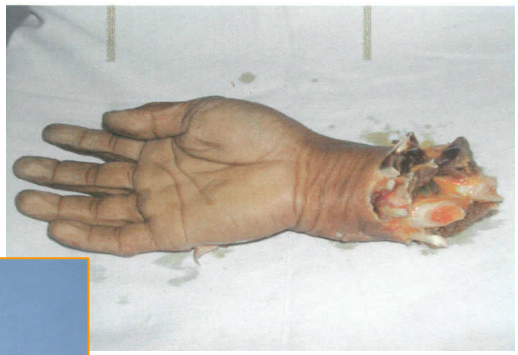
Station Hospitals and Sub-township Hospitals, 16 bedded in strength are basic medical units with essential curative elements including general medical and surgical services and obstetric facilities. The population residing in rural area are mostly access to such Station Hospitals. Township Hospitals, strength of 16, 25 or 50 are situated around 10 to 20 kilometers away from the station hospitals are providing health care services including laboratory ,dental and also major surgical procedures and acting as the first referral health institutions for those who required better care. Specialist services are available at District and some 50 bedded Township Hospitals where intensive care units with life saving facilities are established. More advanced secondary and tertiary health care services are provided at the State/Division Level hospitals, Central and Teaching hospitals.

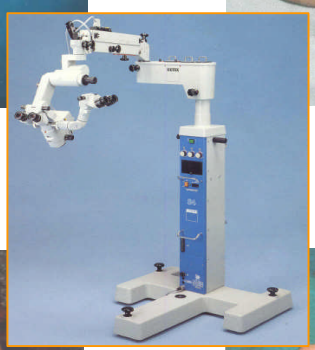
To ensure adequate coverage of hospital services in every State and Division, hospital upgrading project was developed and implemented. The project includes establishment of new hospitals in remote area and increasing hospital beds for those area with high population density especially the districts with rapid socioeconomic development .By the end of December 2007, total number of government hospitals is 839, increasing 25 % from that of 1988. Total hospital beds sanctioned in 2008 are 36121. Institution based health care quality has been improving during last few years. Modern diagnostic and therapeutic facilities have been equipped in most of the central, teaching and state/ divisional hospitals. Majority of referral cases have access to quality medical care services at district hospitals and above.

As a result of strengthening the hospitals with provision of both competent human resources and materials, various sophisticated procedures of surgical and medical interventions like renal transplant, open heart surgery, cardiac catheterization, angiogram and plastic surgery of traumatically amputee limbs could be performed.

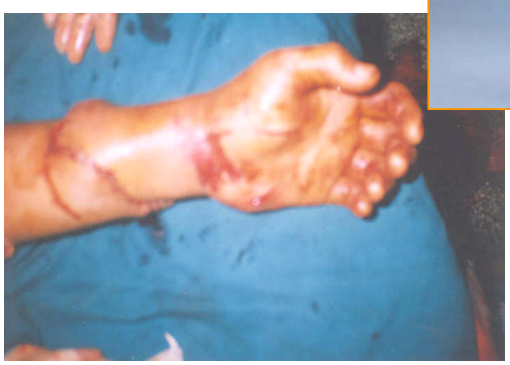


Before Surgery

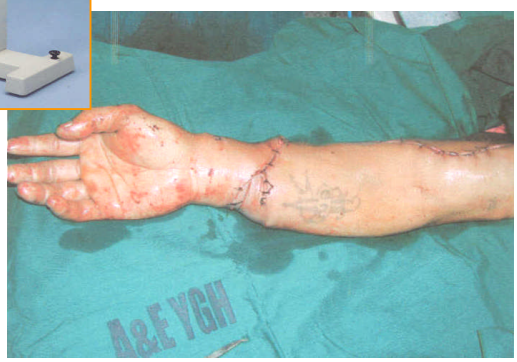


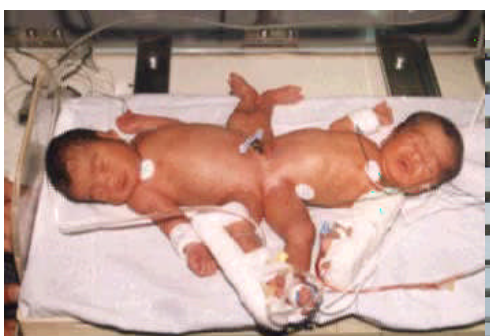


Microscope for Hand Surgery



After Surgery





Successful Operation of Conjoint Twin Sisters

The health development and medical care services for border area have been implemented since 1989 and up to 2008, 80 hospitals, 102 dispensaries, 62 rural health centres and 139 sub-rural health centres have been established in co-operation with other related departments and ministries, particularly the Ministry for Progress of Border Areas and National Races and Development Affairs and are now well functioning.

As a public-private partnership, private donors are also providing hospital equipment and supplies, complementing the efforts of government in improving quality of care in hospitals. Local community and private donors have contributed in cash or in kinds to meet the needs of hospitals including medical equipment to provide quality care.

The Hospital Management Committees led by local administrative authority with membership of officials from related departments, are organized for making coordinated efforts to give support to each and every health institution according to functional requirements. Hospital trust funds and community cost sharing system are effectively implemented to protect low income patients from financial burden and social support is provided by Medical Social Workers.

Outreach health services are provided throughout the country and financial support is provided by NGOs and other individual donors. The outreach services include cataract surgery, reconstructive surgery and general medical and surgical services provided by teams of physicians and surgeons from central, state and divisional hospitals and Eye and ENT hospitals.

Along with curative services, patient centered nursing care has been focused and upgraded in both the managerial and clinical aspects. The Nursing Division under the Department of Health could provide training on nursing leadership and management development to strengthen nursing services in collaboration with WHO and International Council of Nurses.

Hospitals under the Ministry of Health

Oral Health

Through the activities of Primary Oral Health Care Project, jointly sponsored by the Ministry of Health and World Health Organization, fluoridated tooth pastes and tooth brushes were distributed to primary schools to initiate school-based toothbrushing programmes.

Realizing the fact that appropriate and consistent fluoride exposure is the utmost important in promoting oral health and to prevent dental caries in population groups, an advocacy process to promote availability and affordability of fluoride toothpastes has commenced since 2000.

Myanmar has 25 different brands of fluoride toothpastes produced by 7 local industries and 67% of the produce was tested to be efficacious to prevent dental caries. The Oral Health Unit had already developed the criteria for labeling requirements and user-instruction in Myanmar language, and has been conducting meetings with manufacturers to be in effect in the near future.

While promotive and preventive measures are being emphasized to promote the oral health status of Myanmar, curative services were not being left, neglected. Newly graduated dentists have been posted in hospitals, school health teams, and urban health centres countrywide. By 1st January 2008, 545 dental professionals were in the public sector to provide dental care for Myanmar. Research and surveys to develop fluoride map of Myanmar, dental fluorosis mapping for Myanmar and scientific documentation of advocacy process are also in progress with the Oral Health Unit.

2 Services for the Target Population Group

Maternal and Child Health

Mothers and children constitute over 60 percent of the total population in the country and are accorded special priority by the health care system. Maternal and child health care services are provided both in urban and rural settings and it is also a crucial component of National Health Plan. In order to reduce the country's burden of maternal and perinatal morbidity and mortality, essential reproductive health care including maternal and child health care, essential obstetric care, prevention and management of post-abortion complication, management of Reproductive Tract Infections/ Sexually Transmitted Infections (RTIs/STIs) and adolescent reproductive health has been implemented as one of the activities of the National Health Plan. Promotion of community awareness on the knowledge about pregnancy and childbirth, danger signs, role of family and community in preparation and transportation in case of emergency was the major gainful achievement to the safe motherhood activity at community level. Despite these advances, the progress has been uneven in some areas and there are much more rooms to be improved in reduction of maternal and neonatal morbidity and mortality. In response to this challenge, at country level, national plan of actions and strategic plans were set out, together with national as well as the global partners. Continuum of quality care for maternal and newborn health has then been focused as a priority in preventing maternal and newborn deaths and morbidities.

Based upon the survey findings, the Maternal Mortality Ratio was 1.78 in urban and 2.81 in rural per 1,000 live births *(National Mortality Survey, CSO-1999)*. Proportion of births attended by skilled health personnel as reported by HMIS are 40.1% in 2001 and 63.59% in 2006. As of 2007, 18,098 midwives and 29,691 AMWs are providing maternal care throughout the nation. At present, the ratio of midwifery skilled providers (including AMWs) to village is 1 : 2 while the national target is at least one midwifery skilled person to every village. Deployment of health manpower has been focused especially to rural and remote areas.

Efforts to improve maternal, child and newborn health

The main strength of the current activities is based primarily upon expansion of the skilled birth attendants by building the capacity of AMW in their midwifery skills while attempting to recruit more midwives in the health system. For provision of skilled care at every childbirth including postpartum and neonatal care, the Ministry of Health has been striving for provision of a continuum of care starting from the pregnant mother and her family, followed by the first level of health care at health post at which it involves

the provision of good-quality midwifery care. Emphasis is on improving obstetric practices and reducing the occurrence of harmful traditional practices, while acknowledging that other traditional practices may have their place in a society. Promoting the adoption of safe practices such as clean hands, a clean delivery area and clean instruments for cutting the umbilical cord, is one way of eliminating harmful traditional practices. The activities to ensure quality care at every child birth covering post-partum and neonatal care include: development of national standardized guidelines for accreditation of midwifery skilled personnel, refresher training and standardized protocol of AMWs on pregnancy, childbirth, postnatal and newborn care (PCPNC) for the accreditation of their midwifery skill, procurement and distribution of training equipment and materials for Essential Obstetrics and Newborn Care by AMWs, recruitment of new AMWs to expand manpower force for providing skilled care at birth, and expansion and monitoring of the utilization of home-based maternal records as well as the referral system for EOC and newborn care.

There is an urgent need to update the curriculum for training of midwives, auxiliary midwives, and traditional birth attendants to develop competency in the provision of routine maternity care, as well as the recognition of complications and need for referral. Appropriate decision-making by primary maternal health care providers is the foundation of essential and comprehensive obstetrical care. This curriculum will be used in a coordinated effort to train and periodically retrain basic health staff. Training of township-level trainers will be given the highest priority in implementation of this training. The development of a competency-based curriculum will serve to set a national standard for high quality maternal health care. Ensuring that this standard is met throughout the maternal health delivery system in Myanmar requires diligent efforts in regard to management and supervision. In line with the revised maternal health care curriculum, a set of technical guidelines are to be prepared which describe this standard of care. These guidelines are periodically updated as new scientific data become available. These technical guidelines are used by supervisory and management personnel throughout the health delivery system to guarantee an appropriate level of quality in maternal health services.

Some of the maternal morbidities and mortalities appear to be due to delayed referral from primary maternal health providers. A critical element of the maternal health training curriculum will focus on prompt identification of conditions requiring immediate referral to a medical facility. A clear set of referral guidelines adapted to the local transport, resource, and facility setting will be clearly articulated by township-level supervisors.

Promotion of Community Awareness on Safe Motherhood

Future Plan and Five Year Strategic Plans for Reproductive Health and Child Health Development

Myanmar has decided to achieve the MDGs in the area of maternal, newborn and child health and plan and implement the strategies and interventions to reduce the U5MR to 38.5/1000 LB in 2015. Therefore "*Five-year Strategic Plan for Reproductive Health*" (2004-2008) and "*Five-year Strategic Plan for Child Health Development*" (2005-2009) were developed by the Department of Health, Ministry of Health, with inputs from key stakeholders. It is in response to the felt need to have a comprehensive document that embodies the national aspirations on reproductive health and child health development in the country, and the way to achieve it. It is a road map for maternal, newborn and child health as well as for other essential components of reproductive health and adolescent health strategic plan (under development), as well as to the existing disease specific strategic plans in the country. The strategic plans have the common programme approaches namely:

1) Improving skills of health care providers
2) Strengthening the health system to deliver child health services
3) Improving family and community practices
4) Improving the enabling environment
5) Improving the evidence base for decision making

Although improvements on the health status of mothers and children were noted, much more need to be done to sustain the gains and to contribute to the achievement of Millennium Development Goals by 2015. Under the leadership of the Department of Health, the development of this plan takes into account the National Health Policy, National Population Policy, National Health Plan, Health Development Plan, and Myanmar Vision 2030. It considers the disease burdens of mothers, newborn and children in the country and the available evidence-based interventions. General objective is to improve quality of health care in order to reduce morbidity and mortality of mothers, neonates, infant and children under five, and to achieve normal growth and development of children in Myanmar.

Women and Child Health Development Project (WCHD)

Women and Child Health Development Project of The Department of Health is the one of the project implementing maternal, newborn, adolescent and child health care. It has been implemented since 2001 with the goal of achieving Millennium Development Goals and the following objective, in general to provide quality health care services for women, children and adolescent in order to reduce under-five mortality rate and maternal mortality rate and to promote health development of the women, children and adolescent. Specifically the project aims to reduce the under-five mortality rate to achieve Millennium Development Goal, to reduce the maternal mortality to achieve Millennium Development Goal and to ensure quality health services for children, adolescent and women. WCHD project has been implemented 125 townships in all States and Divisions from 2001 to at the end of 2007.

WCHD strategies aims at ensuring quality health services are accessible and affordable for women, children and adolescent. It contains 4 components: namely, women health development, child health development, adolescent health development and newborn health development.

Community-based Health Activities Training

Available strategies are inco-operated into the new programme: Integrated Management of Childhood Illness (IMCI) for Child Health, Integrated Management of Pregnancy and Childbirth (IMPAC) for Women Health and Life Skills Education for Health (LSEH) for adolescent health. Coordination between departments, national/international agencies and organizations involved in health of women, children and adolescent has been initiated. WCHD in 12 new townships per year from 2006 to 2010 has been carried out. IMMCI activities are to be reinforced in areas where WCHD activities are yet to be implemented.

Gender and Women's Health

In Myanmar, the issue of gender equity and equality is still new and little research exists on the real situation of women and men in communities. Gender analysis is needed to determine how these differences impact exposure to risk, access to benefits, information, resources, and healthcare.

A research was done during 2004-2006 to assess the role of gender in the rural communities and urban and periurban communities as well as to assess the knowledge, attitude and practice on gender issues of basic health staff. It was found that there was no marked gender discrimination among poor people in rural areas of Myanmar and the situation is similar in periurban communities. This practice of sharing the responsibilities between husbands and wives is very prominent in rural poor as both of them have to work hard to feed the whole family. The study on KAP of BHS could identify rich background information for use in preparing training modules for basic health workers on gender and health.

Training modules were prepared and training were given to basic health staff on concepts and related practices within the health-related framework of gender and equity. At present gender issue was being sensitized to nearly 1400 BHS from 27 townships and out of these, specific gender and health training was given to 500 BHS from 10 townships. Later it will expand to more townships all over the country.

As regards gender mainstreaming issue, modules were also developed for sensitization on gender and health at the health manager level emphasizing on specific diseases using gender analysis tools and gender mainstreaming tools. All these activities will lead to development of strategies for integrating gender equity into programmes, policy, and capacity building in the health sector in future.

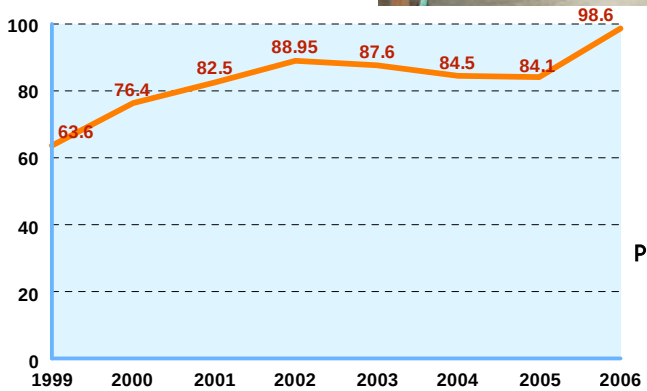
School and Adolescent Health

Myanmar students in basic education schools were estimated to be 7.8 millions according to the report in 2006 of Department of Education Planning and Training. Adolescents (10-24) years of age constitutes approximately 30 percent of total population of Myanmar. The School Health Programme was included in Community Health Care Programme in National Health Plan since 1999. According to the needs and demand due to socio-cultural changes, the Five year Strategic Plan for Adolescent Health and Development was formulated and put into action in conformity with the National Health Plan.

As School Health Programme aims to improve the health of entire students, the programme is in keeping along the track of Health Promoting School up to the community level. The Education sector plays the ownership role and the Health sector is mainly providing the technical support for implementation of the (9) components of Health Promoting Schools: Comprehensive School Health Education, Healthy School Environment, Nutrition Promotion and Food Safety, Prevention of Diseases, School Helath Services, Sports and Physical Activities, School to Community Outreach, Counselling and Social Support, Training and Research. This ongoing process was found to have some progress from year to year.

A very significant activity for school health programme of Myanmar, Global School Based Student Health Survey, was conducted along with School Health Week (2007) among 2806 students in 8th Grade to 11th Grade in selected 50 schools. The survey aimed to assess the adoption of healthy life style among students.The findings of survey results are to be disseminated pending analysis.

Professor Dr. Kyaw Myint, Minister for Health, Inspecting the Demonstration on Impregnation of Curtains in Basic Education High School No. 5, Nay Pyi Taw



Percentage of School Examined (1999-2006)

Adolescent Health

The Ministry of Health is committed to promoting and maintaining the health status of adolescents through Adolescent Health Project in collaboration with related sectors. Improving access of adolescents to information and skills, Improving the physical and social environment of adolescents and improving adolescents' access to and use of services are set as main strategies. National Workshop for early implementation of five year strategic plan for adolesent health and development was organized in 2007 with various related sectors and inputs were obtained through discussions mainly addressed to the problems of adolescent health.

Central Coordinating Meeting for Early Implementation of Five Year Strategic Plan for Adolescent Health and Development in August 2007, Royal Kumudra Hotel, Nay Pyi Taw

Promoting Healthy Ageing

Increasing number of ageing population is one of the emerging issues in the developing countries including Myanmar. To overcome the effect of growing elderly population on health aspect, health care of the elderly project was implemented since 1992-93 in six townships and expanded to 72 townships. Based on the concept of active ageing, the project mainly focused on preventive and promotive aspect.

Doctors and Nurses from the Township hospitals as well as Basic Health Staff were trained for basic elderly health care and were also trained for case management of elderly patients. Local NGOs and volunteers (Community Health Workers and Auxiliary Midwives) were also trained to be aware of and understand the issue of elderly care and the importance of their participation in this activity.

Basic Health staff at the Rural Health Center are trained to be able to detect minor as well as some major illnesses of the elderly. They are encouraged to take care of minor illness and refer the seriously ill to the nearest Township Hospital. They are also trained to understand the underlying causes of the illnesses and factors influencing social, mental and health problems that the aged are facing.

Health education/ counseling, an essential component of the elderly health care, is also included in the training with special emphasis on communication skill for educating the elderly people as well as their care givers.

Elderly Day is usually held all over the country on the 1st of October and on that day elderly are provided with gifts and medical care, eye care and oral care by health personnel and assisted by he local NGOs.

3 Promoting Health, Ensuring Healthy Environment and Protecting Consumers

Environmental Sanitation and Safe Water

Environmental Sanitation Division (ESD) under Department of Health (DOH) is an implementing agency for sanitation in rural as well as sub-urban (peri-urban). In Myanmar, Sanitation programme was initiated in 1982, starting as pilot basis with free distribution of the plastic pans and pipes, implemented in 13 townships with four different geological terrains (i.e., Dry, Hilly, Delta and Coastal) until 1996.

Since 1998, the sanitation programme has been being implemented nation wide through self-reliance approach and social mobilization Strategy. To enhance the momentum of implementation and to increase access to sanitation facility amongst community, National Sanitation Week (NSW) has been launched every year from 1998 and onward. Sanitation coverage by population was increased from 45% in 1997 to 78.2% in 2006.

In the area of Water Quality Activity, ESD initiated the low-cost surface water treatment plant which were constructed for the community in Thanlyin Township and for the Hospital in Kawa Township. Sand Filtration Tanks to treat pond water were constructed in Waw Township. ESD is also a leading agency for Water Quality Surveillance & Monitoring System and Water Safety Plan in Myanmar.

Moreover, in the area of Health institutional water supply and sanitation activities, ESD also implemented the Township Hospital Water Supply and Sanitation activities in 300 bedded Hospital and Leway township of Nay Pyi Taw Region, in Pyawbwe and Taungdwingyi townships.

The coverage of Urban and Rural Water Supply and Sanitation

	Total	Rural	Urban	Source
Population access to safe water	78.8%	74.4%	92.1%	MICS
Population access to sanitary latrine	78.2%	75.4%	87.1%	HMIS

MICS - Multiple Indicator Cluster Survey, 2003, Department of Health Planning
HMIS - Health Management Information System, 2006, Department of Health Planning

Public Health Laboratory service provides the essential backbone for the prevention, control and treatment of diseases. The activity for provision of safe drinking water has been carried out in Myanmar since more than two decades ago. Universal access to safe drinking water is included importantly as one of the main National Health Plan goals of the country. Taking this into account, efforts have been made to develop a rapid, easy and reliable test kit to test for coliform in drinking

water. Lauryl suphate broth was used to detect coliforms and *Escherichia coli* in a water sample. National Health Laboratory (NHL) will provide this locally made lauryl sulphate water testing kits for bacteriological analysis of water in schools of Yangon Division as a pilot project in 2008.

Hydrogen peroxide, the only germicidal agent composed of water and oxygen and kills disease organisms by oxidation is considered the world's safest all natural effective sanitizer. Apart from different uses for hydrogen peroxide, NHL has tested 3% hydrogen peroxide for drinking water treatment, to replace chlorination. Because it does not form chlorinated by-products and as a liquid it is safer and easier to handle than gases or solid. It is available in 50% (wt/wt) concentrations from Ministry of Industry (1) and it effectiveness was tested in National Health Laboratory for safe drinking water applications.

Mitigating Arsenic Problem

During the year 2007, Arsenic Mitigation Project had tested 14765 water samples at (3) townships in Ayeyarwady Division and one township at western part of Yangon Division in collaboration with UNICEF. The activities ranging from testing with field test-kits, re-confirmation of field results by Atomic Absorption Spectrophotometry (AAS), and development of water sources mapping were implemented by OHD.

Healthy Work Places

The role and functions of Occupational Health Division (OHD) are essentially promotion of health of workers in various sectors (including rural agricultural community) and prevention of work-related diseases, injuries, health problems. Depending on the needs and circumstances of the economy, the OHD has been providing the services namely surveillance of the workers and working environment, information, education and training on occupational health principles and practices to employers, workers and basic health staff, including Occupational First Aid Treatment. The OHD is also taking the lead in addressing the prevention of adverse health effects due to such environmental problems as air and water pollution, toxic and hazardous waste and chemical safety.

The Ministry of Health in collaboration with the National Environmental Commission (NCEA) from the Ministry of Forest is working in the (6) Thematic Working Areas namely (i) Air Pollution (ii) Water Supply, hygiene and sanitation, (iii) Solid and hazardous waste, (iv) Toxic chemicals & hazardous substance, (v) Climate change, ozone depletion and ecosystem change, (vi) Contingency planning, preparedness and response in environmental health emergencies.

Trainings

Training on Prevention, Early Recognition and Management of Common Chemical Poisoning for Basic Health Staff were given in Bago, Pathein, Kyaington, Myeik, and Mawlamyaing. Training for Medical Officers, Nurses, Basic Health Staff, Factory Supervisors on Occupational Health and Safety were given for 2 weeks duration at OHD.

Screening Tuberculosis and Noise Hazards

With the aid of National Tuberculosis Programme in December 2006, 1797 Factory Workers from (6) Petro-chemical Industries were screened for TB and necessary treatment were given. Factory workers totaling 4010 in numbers from Hlaing Tharyar Industrial Estates were screened for the presence of Pulmonary TB by taking chest X-ray using the mobile chest X-ray van in February and March 2007 in collaboration with National Tuberculosis Programme. Similarly, 150 Factory workers from PMG Factory were screened for TB. With the collaboration of National Tuberculosis Programme, 4000 factory workers from Mandalay Industrial Estates were also screened for TB with the use of mobile chest X-ray van. Factory workers, 300 in numbers exposed to Noise were screened for the prevalence of Noise Induced Deafness in one Textile Factory and one Jute Factory.

Nutrition Promotion

The ultimate aim of the nutrition promotion activities in Myanmar is "Attainment of nutritional well-being of all citizens" as part of the overall social-economic development by means of health and nutrition promotion activities undertaken together with the cooperative efforts by the food production sector.

With the general objective to ensure that all citizens enjoy the nutritional state conducive to longevity and health, the activities are designed to control/ eliminate all forms of nutritional deficiency; to promote healthy dietary habits and lifestyles among people and to prevent over-nutrition and diet-related chronic diseases.

Major Nutrition Problems
1. Protein Energy Malnutrition (PEM)
2. Iodine Deficiency Disorders(IDD)
3. Iron Deficiency Anemia (IDA)
4. Vitamin A Deficiency (VAD)
5. Vitamin B1 Deficiency (Beri Beri)

Interventions

Problems	Intervention
1. Protein Energy Malnutrition (PEM)	For control of PEM: ▪ Growth Monitoring and Promotion for children under 3 years of age, ▪ Community-based nutrition rehabilitation centres (CNC) for moderately malnourished children in urban areas, ▪ Hospital-based nutrition rehabilitation units (HNU) for severely malnourished children in 30 townships, ▪ Community-based feeding centres (Village food banks) for malnourished children in rural villages in 31 townships.
2. Iodine Deficiency Disorders(IDD)	For IDD elimination: ▪ Universal salt iodization (USI) is the major long-term intervention for elimination of iodine deficiency disorders.
3. Iron Deficiency Anemia (IDA)	For anaemia control programme: ▪ Iron supplementation for pregnant women throughout the country, for adolescent school girls in selected (20) townships and children between 6 months and 3 years in growth monitoring sessions, ▪ Nutrition education to increase consumption of iron rich food, to improve preparation to increase iron absorption, ▪ Mass deworming programme for 2 years to 10 year old children biannually and pregnant women (after 3rd month) once during pregnancy life.
4. Vitamin A Deficiency (VAD)	For Vitamin A control programme: ▪ Biannual supplementation with high-potency vitamin A capsule (Retinol) is the main intervention against vitamin A deficiency among under-5 children, ▪ Lactating women receive one dose of vitamin A (200,000 IU) within one month after childbirth to ensure that the suckling baby gets sufficient vitamin A from the breast milk.
5. Vitamin B1 Deficiency (Beri Beri)	For Beri Beri control programme: ▪ Vitamin B1 tablet is distributed to pregnant women (9th month of pregnancy till 3months post natal period), ▪ Injection B1 ampules distributed to the hospitals for the treatment of infantile beri beri, ▪ Vitamin B1 deficiency Surveillance System was launched in 2005 June. Data are collecting from (14) hospitals and (21) townships.

Nutrition Promotion Week Campaign

During the campaign, various nutrition promotion activities are carried out. Vitamin A capsules are distributed to children between 6 months and 5 years of age; iodine content of salt is tested in the markets; and iron tablets are distributed to the pregnant women. Various nutrition education programmes are broadcast and telecast. Testing of iodine in salt is demonstrated for the schoolchildren and essay competitions for schoolchildren and cooking competitions for mothers are held. In the campaign Myanmar Salt Enterprise of the Ministry of Mines, Department of Basic Education, Ministry of Information, and Department of General Administration are major partners of the Ministry of Health (MOH).

Observation of Food Pyramid in Nutrition Promotion Week 2007

The National Plan of Action on Food and Nutrition (NPAFN)

In accord with the commitment made at the International Conference on Nutrition 1992, Myanmar formulated the National Plan of Action for Food and Nutrition in 1994 and the Ministry of Health collaborated with relevant ministries involved in food production, food distribution, education, information and developmental affairs to update existing NPAFN. To continue the inter-sectoral approach to improve food and nutrition situation in Myanmar, the Workshop for Updating the National Plan of Action on Food and Nutrition (NPAFN) has held on 8-9th March 2005. In the Workshop mid-level officials from various ministries, representatives from NGOs, INGOs and UN agencies critically reviewed the implementation status of the NPAFN 2005, and set a framework for the NPAFN beyond 2005. Emerging issues such as over- nutrition, obesity and diet-related chronic non-communicable diseases, adoption of new strategies including Infant and Young Child Feeding (IYCF), Diet, Physical Activity and Health, and Promotion of Optimal Fetal Growth are discussed. NPAFN for next five years (2006-2010) was updated and distributed to related ministries during 2007.

Further Nutrition Promotion Activities (2008-2009)

- To strengthen emergency nutrition response and therapeutic feeding, training on therapeutic feeding for pediatricians and nurses will be conducted.
- National prevalence study on Low birth weight and Beriberi will be conducted.
- Optimal fetal growth and development and improving infant and young child feeding will be conducted in 2008.
- Collaborating with UNICEF, trial of Multiple micronutrient sprinkles with and without protein supplementation will be initiated in first quarter. The aims of the project are to investigate the effectiveness, acceptability and feasibility of multiple micronutrient sprinkles and TopNutri as an intervention strategy to reduce anemia and improve growth among children in Myanmar and to reduce the prevalence of anemia among children between 6 months and 3 years by 25% amongst those included in the trial.

Supplementary Feeding in
Para-Hita School by
Public Health Section

Training Workshop on
Community-based Nutrition Programme

Smoke-Free Environments

The National Programme on Tobacco Control was officially launched in January 2000 with the drafting and approval of the National Policy on Tobacco Control and Plan of Action. The Ministry of Information prohibited advertisement of tobacco on television and radio and from all electronic media in the year 2000. Tobacco advertising billboards were banned from the vicinity of schools, hospitals, health facilities, sports stadiums and maternity homes in May 2002 and from other places in April 2003. Tobacco advertisement were also been banned from the newspapers, journals and magazines in early 2003. Smoking was prohibited at all hospitals and health departments, at all basic education schools, all sports stadiums and sports fields and at some workplaces since 2002.

Myanmar became a signatory to the FCTC on the 23rd of October 2003 and became a Party to the Convention on the 20th of April, 2004. For the significant achievements in tobacco control in Myanmar, Minister for Health, Professor Dr. Kyaw Myint, received the "World No-Tobacco Day 2004" award of the World Health Organization.

The Control of Smoking and Consumption of Tobacco Products Law was adopted on 4th May, 2006 as the State Peace and Development Council Law 5/2006. The adoption of the law was a very significant milestone in the history of public health of Myanmar and was highly appreciated by the World health Organization and anti-tobacco advocates.

A Tobacco-Free Rural Health Center

A Tobacco-Free School

A Smoke-Free Playground

Food and Drug Safety

Food and Drug Administration (FDA) formed under Department of Health since 1995, administered control activities not only in food and drug but also in cosmetic, medical device and household products. Law enforcement is undertaken under the guidance of Ministry of Health and Myanmar Food and Drug Board of Authority and supervised by Central Food and Drug Supervisory Committees. Control programmes are implemented by State / Division, District and Township Food and Drug Supervisory Committees within their respective jurisdictions. FDA offers laboratory service for controlling quality and safety of food, drug, cosmetic, medical device and household products. Mandalay FDA branch established in 2000 assists FDA's control work for upper Myanmar.

Local manufacturing facilities of food, drug, cosmetic, medical device and household products are inspected and certified on the basis of compliance with the required Good Manufacturing Practice and assisted in applying Hazard Analysis Critical Control Point methodology so as the final products meet the quality standard appropriate to their intended use and ensure consumer's health and benefit.

FDA takes necessary measures to ensure that only drugs that are registered are imported, the cosmetic product that are notified are placed in the market and to implement ASEAN Cosmetic Derivative by 1st January, 2008.

Importation and exportation of food, medical device and household products inspection and certification system is in place and protect the health of consumers and facilitate fair practices in trade. The sale of drug, food, cosmetic, medical device and household product s are regulated by Township Food and Drug Supervisory Committee, which consists of personnel from Department of Health, Department of General Administration, Myanmar Police Force, City Development Committees/ Developmental Affairs Department and Livestock Breeding and Veterinary Department.

FDA Laboratories

FDA is also taking in required activities relating to food and drug safety. The 23rd Meeting of ASEAN Working Group on Technical Cooperation in Pharmaceuticals (AWGTCP) was held in Yangon in October, 2007.

Minister of Health, Professor Dr. Kyaw Myint attending "China-ASEAN Ministerial Conference on Quality Supervision, Inspection and Quarantine" in Nanning, China

Minister for Health, Professor Dr. Kyaw Myint attended "China-ASEAN Ministerial Conference on Quality Supervision, Inspection and Quarantine", held on October 28-29, 2007 in Nanning, China. The theme of the conference is "Strengthening Cooperation on Food Safety Management and Protecting Consumer's Right".

4 Controlling Communicable Diseases

Myanmar, after gaining independence, established campaigns to fight against major infectious diseases. Since 1978, integration of health services was carried out where the campaign or vertical programmes were all integrated into Basic Health Services using Primary Health Care approach.

Since then the basic health staff have been reoriented and trained to provide services for Malaria Control, implement Multi Drug Therapy Programme in controlling leprosy, case finding and treatment of TB cases, immunization of children against 6 major childhood diseases, control of diarrhoeal diseases and surveillance activities etc. Under the Disease Control Division and with the support of Central Epidemiological Unit, supervision, monitoring and technical support are provided by disease control teams at central level and state and division levels.

Diseases of National Concern

HIV/AIDS

AIDS is a disease of national concern and is one of the priority diseases included in the National Health Plan of Myanmar. Although a short term plan had started as early as in 1989, currently Myanmar is responding to HIV and AIDS with National Strategic Plan and its operation Plan covering 2005-2010.

The National Health Committee has laid down clear guidelines to prevent and control HIV and AIDS. Established in 1989 under the National Health Committee, the National AIDS Committee serves as an active multi- sectoral body for formulation of National Strategic Plan to prevent and control HIV and AIDS in Myanmar. The working committee, as well as state/division/district and township level committees were also formed in the same year. Currently, the forty five AIDS/STD Prevention and Control teams strategically located in all states and divisions of Myanmar form the core of the National AIDS Control Programme. The action plan for AIDS and STD prevention and control activities is subsumed under the National Health Plan.

The active surveillance of HIV and AIDS began in Myanmar since 1985. The first comprehensive surveillance system was developed in 1992 including surveillance amongst blood donors and AIDS reporting by health facilities. The first person with HIV infection was diagnosed in 1988, and the first person with AIDS was reported in 1991, an injecting drug user. Biennial HIV sentinel surveillance began in 1992. Since 2000 it has been conducted once a year and has now covered 34 townships across all States and Divisions.

**Lt. General Thiha Thura Tin Aung Myint Oo,
Secretary (1) of the State Peace and Development Council and
Chairman of the National Health Committee delivered an inaugural speech at
2007 World AIDS Day commemoration ceremony**

In collaboration with National Tuberculosis Programme the TB patients from TB clinics were included in HIV sentinel surveillance since 2004. Sentinel Surveillance System is integrated by Behavioral Sentinel Surveillance System, STD (syphilis) Sentinel Surveillance.

Populations sampled for HIV sentinel surveillance

- injecting drug users,
- male STD patients,
- commercial sex workers,
- pregnant women attending antenatal clinics,
- TB patients and military recruits.

Based on AIDS case reporting, it has been estimated that (68%) of cases were attributable to sexual transmission, and (30%) to injecting drug use. (2%) of cases may be attributed to other causes.

HIV sentinel surveillance data for 2006 indicated that HIV prevalence among male clients of STI clinics was (4.86%), sex workers seeking treatment for STIs was (33.5%) and injecting drug users attending drug treatment centers was (42.46%). A decreasing trend of HIV prevalence were reported among donated blood (0.38%) and new military recruits (1%), pregnant women attending antenatal clinics (1.54%) and TB/HIV (11.23%) during 2003 and 2006 sentinel rounds.

To determine the extent of HIV and AIDS problem in the country, an estimation Workshop was conducted in 2007 in Bangkok followed by in country workshop in Mandalay. Output of these workshops had indicated that there are approximately 242,000 adults and children living with HIV in Myanmar at the end of 2007, representing an estimated prevalence with 0.67% in a decreasing epidemic curve that had reached its peak in 2000 with the prevalence level of 0.94%.

Professor Dr. Kyaw Myint, Minister for Health, visiting Specialist Hospital, Mingaladon

Deputy Minister Professor Dr. Mya Oo and delegation attending the 8th International Congress on AIDS in Asia and the Pacific, Colombo, Sri Lanka

Deputy Minister Professor Dr. Paing Soe and delegation attending the Programme Coordination Board Meeting, Geneva, Switzerland

One of the positive achievements in response to HIV and AIDS in Myanmar is that the magnitude of HIV problem and its impacts are well recognized by the decision makers with strong commitments. Besides partners both local and international, have also indicated strong commitments in focused interventions in the areas of prevention, care and support among the most vulnerable populations. Government, international and national non-government and private entities had contributed to the national response. The National AIDS Programme had well coordinated the inputs of national and international partners and tools and technical guidelines

had been developed for a broad range of programme components. Coordination and cooperation has been made with 19 International NGOs, (17) Local NGOs and other line ministries with accountable relationship based on the openness, respects and unity principles.

Tremendous increase in prevention efforts, especially those focusing on condom promotion for sex workers and partners resulted in:

- 100% Targeted Condom Promotion Program have expanded from four sites in 2001 to (170) sites in 2006,
- Various elements of a harm reduction strategy were implemented in pilot areas such as Yangon, Mandalay, Myitkyina and Lashio since February 2006 and expanded up to (21) townships in 2007. Some effective interventions were in place for mobile populations,
- Blood safety program had made progress covering most of the public hospitals, and HIV education was provided for youth in schools,
- Care, support and treatment were gradually made available, (23) ART centers for adult and (11) for pediatrics have been providing in (14) State/Divisional General hospitals and Waibagi specialist hospitals,
- Prevention of mother to child transmission program has been expanded to (106) townships and (37) State/Divisional and district level hospitals,
- Community and home-based care has been expanded to (40) townships over the country in 2005,
- TB/HIV joint program is started since 2005 and now implemented in (5) townships and integrated health care program in (2) townships in 2007,
- The syndromic management of sexually transmitted infection was readily implemented in (316) townships.

Awareness Raising Activities among Targeted Population (Women, Migrants)

The HIV/AIDS and STD Prevention and Control Activities of the National AIDS Programme are:

1. Advocacy
2. Health Education (awareness raising)
3. Prevention of sexual transmission of HIV and STD
4. Prevention of HIV transmission through injecting drug use
5. Prevention of mother to child transmission of HIV
6. Provision of safe blood supply
7. Provision of care and support
8. Enhancing the multi sectoral collaboration and cooperation
9. Special intervention program
   - Cross border program
   - TB/HIV joint program
10. Supervision, monitoring and evaluation

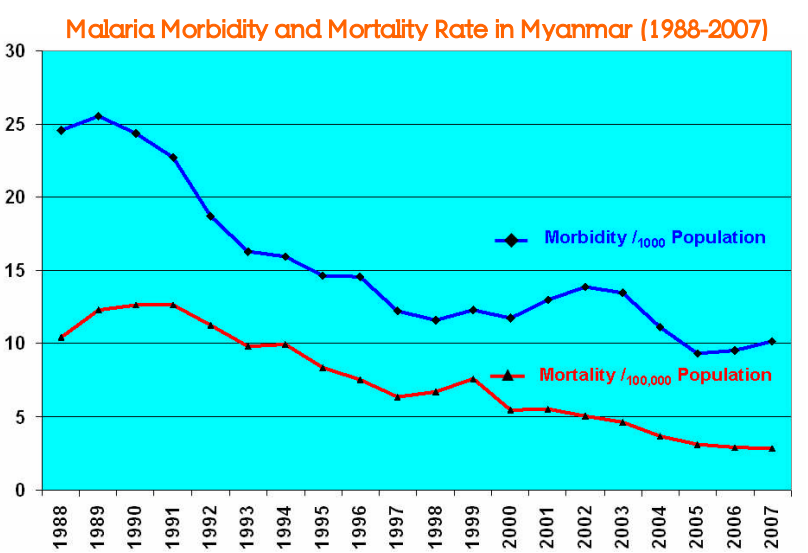
Malaria

Malaria is one of the priority diseases in Myanmar. It is a re-emerging public health problem.

Factors underlying re-emergence

- climatic change,
- uncontrolled population migration,
- ecological changes,
- multi-drug resistant P.falciparum parasite,
- insecticide resistant vector and change in behavior of vector.

Long-term trend shows decreasing malaria morbidity and mortality in Myanmar.



The main responsible vectors are An. minimus and An. dirus. In Rakhine State, apart from these vectors, An. annularis is responsible for local transmission and is resistant to DDT. An. sundaicus is responsible vector in coastal regions. Drug resistant malaria is seen along the border areas and some pocket areas especially gem mining areas.

Objective of the programme is to reduce malaria morbidity and mortality mainly through increasing accessibility to quality diagnosis and appropriate treatment according to national treatment guideline and scaling up the use of insecticide treated mosquito nets and increasing coverage of indoor residual spray.

The main strategies of National Malaria Control Programme:

- Prevention and control of malaria by providing information, education and communication up to the grass root level
- Prevention and control of malaria by promoting personal protective measures and by introducing environmental measures as a principle method and chemical and biological methods in selected areas depending on local epidemiological condition and available resources
- Prevention, early detection and containment of epidemics
- Provision of early diagnosis and appropriate treatment
- Promoting capacity building of malaria control program (human, financial and technical)
- Strengthening the partnership by means of intrasectoral and intersectoral cooperation and collaboration and with public sectors, private sectors, local and international nongovernmental organizations, UN agencies and with neighboring countries for resource generation
- Intensifying community participation, involvement and empowerment
- Promoting basic and applied field research.

Activities of National Malaria Control Programme

1. Information, Education and Communication

Dissemination of messages on malaria is carried out through various media channels with the emphasis on regular use of bed nets and early seeking of appropriate treatment (if possible within 24 hours after onset of fever). Production of IEC materials is also carried out in different local languages for various ethnic groups and different target groups such as forest related travelers, pregnant women and general population. Advocacy activities are conducted for health related and non-health public and private sectors, NGOs, religious organizations and local authorities at different levels.

2. Preventive activities

Stratification of Areas for Malaria Control

In 2007, risk area stratification, one of the key activities of malaria prevention and control, was carried out in (80) endemic townships of Myanmar. Package of malaria control activity was given according to the result of risk area stratification that ensures the effective resource allocation.

Insecticide Treated Mosquito Nets

Selective and sustainable preventive measures are carried out emphasizing on personal protection and environmental management. With limited resources, areas were prioritized for ITN Programme either distribution of Long Lasting Insecticidal Nets (LLIN) or impregnation of existing nets. In 2007, 145,100 number of LLINs were distributed in 2857 villages of 40 endemic townships particularly in hard to reach areas. 130,315 existing nets were impregnated mainly in development project sites. Total number of house-holds covered was 275,415 and total population covered was 826,245 in those programme areas.

Epidemic preparedness

Number of epidemic became reduced during last five years. No malaria epidemic has been reported in 2007. Ecological surveillance and community based surveillance were emphasized together with case detection, management and preventive measures mainly indoor residual spray in development projects and impregnation of existing bed nets. Field visits in 563 villages of 154 townships were done by VBDC field staff for implementation of activities for prevention of epidemics.

3. Early diagnosis and appropriate treatment

For malaria diagnosis, 700 microscopes were distributed up to rural health center level and Rapid Diagnostic Test (RDT) were also distributed up to sub-center level. Assessment and quality control of malaria microscopic centers were done by laboratory technicians from Central and State/Divisional VBDC team in 2007. Different categories of health staff were trained on malaria diagnosis and case management. In 2007, according to the new anti-malarial treatment policy, case management with ACT (Artemisinine based combination therapy) was practiced in all 325 townships. RDT (423,625 tests) and 257,371 doses of ACT (Coartem) were distributed to Basic Health Staff (BHS) of these townships. Malaria mobile teams reached up to rural areas and hard-to reach border areas for improving access to quality diagnosis and effective treatment. Monitoring therapeutic efficacy of antimalarial drugs particularly ACTs was also done in collaboration with Departments of Medical Research. In year 2007, Community based Malaria Control Programme has been introduced in 3 township of Eastern Shan State.

Diagnosis and Treatment in Rural Areas

4. Capacity building

Different categories of health staffs were trained on different technical areas. Different categories of BHS (42 BHS) were trained on malaria microscopy. Refresher training on malaria microscopy was conducted for 20 trained microscopists. Different categories of 58 VBDC staff working at district level were trained on Basic Malariology and Field Operation. Basic Health Staff from (80) townships of high risk areas were trained on micro-stratification of malaria and Malaria Health Information System. Quality assurance of antimalarial drugs is an important issue in reducing malaria mortality and morbidity. Samples of different types of antimalarial drugs from each and every State/ Division were tested for detection of faked drug. Quality assurance of Rapid Diagnostic Test (RDT) was done in collaboration with Department of Medical Research (Lower Myanmar).

Tuberculosis

Tuberculosis (TB) is one of the major public health problems in Myanmar and considered as the priority disease in the National Health Plan (2006-2011). Recent estimates suggest that 1.5% of the population become infected with tuberculosis every year, out of which about 120,000 people progress to develop tuberculosis. Half of those cases are infectious with positive sputum smears, spreading the disease in the community.

TB mainly affects the most productive age group of (15-54) years and 7.1% of TB cases were HIV positive and 60-80% of AIDS patients had TB. Multi Drug Resistant (MDR-TB) among new smear positive TB cases and previously treated TB cases were 4% and 15.5% respectively (Nationwide drug resistant survey 2002-2003).

The overall goal of the National Tuberculosis Programme (NTP) is to reduce morbidity, mortality and transmission of TB until it is no longer a public health problem and to prevent the development of drug resistant TB.

Specific Objectives are set towards achieving the Millennium Development Goals (MDGs) for 2015.

- To reach and thereafter sustain the targets – achieving at least 70% case detection and
- successfully treat at least 85% of detected TB cases under DOTS (MDGs: Goal 6, Target 8, Indicator 24)
- To reach the interim targets of halving TB deaths and prevalence by 2015 from the 1990 situation. (MDGs: Goal 6, Target 8, Indicator 23)

NTP is implementing "Directly Observed Treatment, Short Course" (DOTS) strategy since 1997. The DOTS strategy was extended to "STOP TB STRATEGY" which was introduced by WHO in 2005 aiming to achieve MDGs. STOP TB STRATEGY covers the following six principal components:

- Pursue high quality DOTS expansion and enhancement
- Address TB/HIV and MDR-TB and other special challenges
- Contribute to health system strengthening
- Engage all care providers
- Empower people with TB and communities
- Enable and promote research

The National Tuberculosis Control Programme activities are:

1. Intensification of health education activities using multi-media to increase community awareness about TB
2. BCG immunization to all under one year children
3. Implementating Directly Observed Treatment (DOT) down to the grass root level.
4. Early case detection through direct sputum microscopy of chest symptomatic patients attending health services and contact tracing
5. Regular supervision and monitoring of NTP activities at all levels
6. Strengthening partnership
7. Capacity building
8. Promotion of operation research

Myanmar is one of the 22 high burden countries in the world and was ranked 19th position in 2005. To control tuberculosis, Directly Observed Treatment Short Course (DOTS) strategy was introduced in 1997 and gradually expended during (1997-2003). In 2003, it covered all 325 townships. NTP introduced Fixed Dose Combination (FDC) tablets for daily regimen in 2004 and pre packed patient kit is using in some pilot townships in 2007.

Myanmar has been able to provide DOTS to cover all townships (100%) with technical and financial support from the Government, WHO, Global Drug Facility (GDF), Japan Anti-TB Association (JATA), Japan International Co-operation Agency (JICA) and International Union against Tuberculosis and Lung Disease (Union). Global Fund to fight AIDS, TB and Malaria (GFATM) GDF extended the second 3-year grant in April 2005 till 2008.

The basic health staff in the rural areas, voluntary health workers and national NGOs, Myanmar Women Affairs Federation (MWAF), Myanmar Maternal and Child Welfare Association (MMCWA) and Myanmar Red Cross Society (MRCS) whose membership extends down to the grass root level, have been mobilized to deliver DOT to tuberculosis patients.

TB, HIV/AIDS prevention and control activities have been coordinated especially in the areas of mutual concern. In Mandalay, the Integrated HIV Care project (IHC project) started in collaboration with National AIDS Programme and Union in 2005. IHC project could able to provide voluntary confidential HIV counseling and testing service at TB clinic and TB hospital (Mandalay) and put 450 TB/HIV co-infected patients on anti-retro viral therapy (ART) by end of 2007.

TB/HIV Training for TB and STD Team Leaders, Nay Pyi Taw

In addition to Ministry of Health, TB control activities are also funded by other international funding sources:

- World Health Organization (WHO),
- Global Fund to fight AIDS, TB and Malaria (GFATM),
- Japan International Cooperation Agency (JICA),
- International Union Against Tuberculosis and Lung Disease (IUATLD),
- Japan Anti-TB Association (JATA) and
- Three Diseases Fund (3DF).

Global Drug Facility (GDF) supported anti-TB drugs since 2002 till 2008. Paediatric formulation (3-year grant) will be supported by GDF after development of Childhood TB guideline in 2007.

Decentralization of sputum microscopy and establishment of sputum collection points in some hard to reach area have been attempted to improve case finding.

Although the 70% of population are residing in rural area, NTP could treat 60% of registered TB patients as rural residential. NTP conducted Yangon Divisional TB Prevalence Survey and targets are reset in 2006. The nation wide TB prevalence survey will be conducted in 2008 to evaluate the effectiveness of TB control activities after implementation of DOTS strategy.

Public-Private Mix DOTS strategy initiated in 2002 is now expanding to cover the main cities of Myanmar. Population Services International (PSI) is one of the implementing partners of NTP. PSI trained 413 general practitioners on TB control strategies and implementing in 99 townships (2007). Myanmar Medical Association is also coordinating with NTP for improvement of TB suspect referral, case finding and case management.

Public-Private Mix DOTS strategy has started in 2007 in 4 teaching hospitals in Yangon (New Yangon General Hospital, East Yangon General Hospital, West Yangon General Hospital and Thingungyun Sanpya Hospital).

NTP developed the Five-year National Strategic Plan (2006-2010) in June 2005. 3DF bridging fund covered the transitional period from GFATM termination and initiation of 3DF funded activities in 2007. 3DF funded activities will start in February, 2008. Management of multi-drug resistant TB is one of the activities under 3DF.

FIDELIS, a project with the technical support of IUATLD and WHO was implemented in Sagaing Division aiming to improve case finding and accessibility of hard to reach areas (reaching to un-reach). The case finding was improved double although it could not reach the target.

Conducting of TB Prevalence Survey

NTP, Myanmar reached the global TB control targets in 2006 however sustainability of the current achievement mainly rely on the uninterrupted quality first line anti-TB drugs and the feasibility to tackle TB/HIV and MDR-TB.

Professor Dr. Kyaw Myint, Minister for Health delivered an opening speech at 2007 World TB Day Commemoration Ceremony, Nay Pyi Taw

Progress of National Tuberculosis Control Programme (Myanmar)

Indicators	1994	1999	2000	2001	2002	2003	2004	2005
DOTS Covered Population (%)	8	65	85	90	95	95	95	95
DOTS Covered Township (%)	6	52	71	80	95	100	100	100
Case Detection Rate (%)	32	43	56	61	70	73	81	95
Cure Rate (%)	61	74	70	73	74	72	75	78
Treatment Success Rate (%)	78	82	81	82	82	81	84	85

Surveillance and Emerging Diseases

Central Epidemiology Unit (CEU) is responsible for the surveillance and control of communicable diseases classified in two broad categories viz principal epidemic diseases such as severe diarrhoea (Cholera), dengue haemorrhagic fever, plague, HIV/AIDS. Meningococcal disease is designated as an epidemic prone disease that needs to be reported immediately. Seventeen diseases and conditions are put under national surveillance. Diarrhoeal diseases such as diarrhea and dysentery, food poisoning, typhoid and paratyphoid and vaccine preventable diseases such as measles, neonatal tetanus, other tetanus, diphtheria, and whooping cough are included in the list. CEU is also responsible for surveillance of new emerging diseases like avian influenza, acute flaccid paralysis (AFP) and Adverse Events Following Immunization (AEFI) as well as for outbreak investigation, rapid response and control activities for all epidemic prone communicable diseases. The Central Epidemiological Unit has employed several mechanisms to function as early warning reporting systems. These have been incorporated within ongoing surveillance programme and these included monitoring of incidence of epidemic prone disease (inbuilt alert is generated when the data are entered /analyzed), sentinel surveillance, entomological surveillance, news reports and rumor reports and Web postings and e-mail alerts.

Prevention and Control of Human Avian Influenza Outbreak in Myanmar

Following the Global Alert issued by WHO on 15th March 2003, Ministry of Health formulated a National Preparedness Plan for Prevention and Control of SARS in Myanmar. Based on this preparedness plans, which had been put into place during the worldwide SARS outbreak, Myanmar had formulated a pandemic preparedness plan jointly with the Ministry of Livestock and Fisheries since January 2004.

To be on the stage of preparedness for preventing and controlling Avian Influenza, plans have been developed and steering committee, work committee and sub-committees comprising responsible persons from the Ministry of Health, Ministry of Livestock and Fisheries and other related ministries, have been formed and tasks delegated since January, 2004. National Health Laboratory has been designated as National Influenza Center by the Ministry of Health in November 2007 and recognized by WHO as member of Global Influenza Surveillance Network in December 2007. From early March to mid April, 2006, outbreaks of bird influenza occurred in 13 townships in Sagaing and Mandalay Divisions. The outbreak situation was immediately notified by the government to the OIE, FAO, WHO and the international community.

During 2007 Ministry of Livestock and Fisheries reported H5N1 poultry outbreaks in Yangon, Bago (East) and Bago (West) divisions, Mon and Shan (E) states and a total of (119507) birds were culled. The outbreak situation was immediately notified by the government to the OIE, FAO, WHO and the international community. Rapid Response Teams (RRT) were dispatched to the affected areas within 24 hours after the in-country tests confirmed H5N1 positive. Daily surveillance, monitoring, information gathering and reporting of suspected human cases was carried out including severe

pneumonia and influenza like illnesses in poultry workers and contacts. Laboratory investigations were performed on suspected cases with necessary management and treatment. One suspected case was observed by active case search and the laboratory results shows negative for H5N1 (by rapid diagnostic tests and PCR). Samples were also sent to the WHO Reference laboratory in Japan for confirmation. Hospitals and wards for isolation and quarantine of contacts and suspected patients have been designated. Public awareness and risk communications has been given to the community living in the affected areas. All the other State and Division were also alerted for enhance surveillance activity.

Prevention and Control Activities for Human Avian infection

Human infection of bird flu under control in Kyaingtone

Acting on information that some domestic fowls were found to be dead unusual in Naungngin Village, Kyaingtone Township, Shan State (East) in November 2007, responsible personnel of Livestock Breeding and Veterinary Department conducted thorough examinations and laboratory tests on the dead chickens and found H5N1 virus. State level Rapid Response Team (RRT) conducted outbreak investigation and surveillance & response within 24 hours of receiving the information of poultry outbreak and Central level Rapid Response Team was also dispatched to the affected areas within 3 days after the in-country tests confirmed H5N1 positive in poultry. RRT conducted fever surveillance among the close contact people and there was four suspected human avian influenza cases detected by RRT and specimens of these suspected cases were sent to the public health laboratory in Yangon which confirmed on 26 November that among the four, 7 years old female patient was infected with avian virus. The patient had been kept in quarantine and given a treatment with tamiflu pills at the People's Hospital in Kengtung.

Laboratory samples of those four persons were also sent to a laboratory in Bangkok, Thailand, and a laboratory of WHO in Tokyo, Japan, and the laboratory tests from those reference laboratories also confirmed on 13 December that the patient was infected with the H5N1 virus. The girl infected with bird flu virus was discharged from a local hospital in Shan State on 12 December as she was in good condition after receiving treatment. After the outbreak, Ministry of Health

monitored 689 close contact persons who involved in culling chickens and live near the farms and found four persons who were suspected of being infected with the bird flu virus. The ministry monitored close contact persons for 10 days and confirmed that other persons were not infected with the virus. The outbreak was put under control in a short time, thanks to the control measures of the local authorities, LBVD staff, related departments and social organizations.

International Health Regulations (IHR 2005)

As a member country of the WHO and to implement the International Health Regulations 2005 (IHR-2005) strategies have been adopted for development of tools to assess core capacities and for collaboration with WHO and donor agencies to build capacity for disease surveillance and response.

Recognizing the link between the globalization of trade and travel and the spread of infectious diseases, Ministry of Health has already planned to implement the activities to control public health emergencies of international concern as included in the International Health Regulations (2005), which seek to "prevent, protect against, control and provide a public health response to the international spread of disease, that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade."

Myanmar has developed, strengthened and maintained capacity to detect, report and respond to public health emergencies of international concern and provide routine inspection and control activities at international airports, ports and ground crossings.

All the core capacities required to implement the international health regulation had already been assessed. Communicable disease law has already been reviewed and revised within the context of the international health regulation.

In order to implement the IHR-2005 effectively at all points of entry, Myanmar emphasized cross border issue and as a first step Ministry of Health facilitated the Myanmar-Thailand cross border workshop on 30th - 31st October, 2007 in Tarchileik District with the objectives of designating major ground crossing points at which core capacity for implementation of IHR-2005 will be developed, assessing existing core capacity for implementation of IHR-2005 at ground crossing point on the Myanmar-Thai Border and strengthening capacity at designated ground crossing points based on the assessment findings.

Immunization Programme

The Expanded Programme for Immunization (EPI) in Myanmar was launched in 1978, when BCG, DPT and TT vaccines were introduced in a phased manner across the country. Measles and polio vaccines were introduced into routine EPI programme for infants in 1987. School immunization was initiated in 1978 with 2 doses of DT vaccines at kindergarten and 2 doses of BCG at kindergarten and 4th grade as booster doses. School immunization was stopped following the introduction of Universal Child Immunization (UCI) in 1990 to accelerate immunization activities for infants. A concerted effort to improve the coverage in border and remote areas had been made since 1993. Hepatitis B vaccine was introduced in Myanmar with the support of GAVI in phases from 2003 and it is covering the whole country in 2005. A combination of fixed, outreach and crash immunization delivery approaches were used to achieve the nation wide coverage.

Maternal and neonatal tetanus elimination programme was started in 1999 in Myanmar. High risk townships were identified using a set of indicators and childbearing age women were given 3 doses of TT through campaign approach.

Three years of measles campaigns took place in 2002-2004 in phases, covering one third of the country each year.

The central EPI (CEPI) and Central Epidemiology Unit of the Department of Health are responsible for planning and management of vaccine and cold chain, supplies and logistics, surveillance and outbreak management of vaccine preventable diseases, training, supervision, monitoring and evaluation.

CEPI and CEU of the Department of Health, WHO and UNICEF collaborate closely in implementing priority vaccine preventable diseases control activities. Completing a child's immunization series in a timely manner requires that the child and most often, the mother be seen by a health care provider usually midwife at least 4-5 times during the first year of life. This repeated contact with the health care system provides opportunities for general health screening and provision of timely health information and advice. For this reason, EPI programme is considered to be a "Cutting Edge" for improving child and maternal health care.

The EPI is administered by central level staff assigned for EPI programme and working through state/divisional counterparts, Township Medical Officers (TMOs) and other public health staff at township, RHC and Sub-RHC levels.

Routine immunizations are delivered in fixed sites at Maternal and Child Heath Center (MCH) and Urban Health Centers in towns and at RHCs in country sides. Majority of immunization services are provided through outreach activities in wards and villages. In some townships, a special programme called crash programme is implemented where 3-4 times of immunization services are provided to less than 3 years children within a year during "open" or in other words "favourable" season in some part of the township or in entire township where the accessibility is an issue.

Immunization Schedule

Age	Antigen	Comments
Birth dose	BCG, Hep B1	
At 6 weeks	BCG, DPT1, OPV1, HepB1	If BCG & Hep B birth dose not given
At 10 weeks	DPT2, OPV2, Hep B2	
At 14 Weeks	DPT3, OPV3, Hep B3	
At 9 months	Measles 1	
At 18 months	Measles 2	

Immunization Schedule for Pregnant Women - 1st dose of TT at first AN check up and 2nd dose TT at 4 weeks interval.

With the vision of to contribute towards MDG 4 through reduction of under 5 morbidity and mortality caused by vaccine preventable diseases, the overall objective of the immunization programme is to reach the routine immunization coverage of 90% nationally in children under one with 7 antigens and with TT in pregnant women, and at least 80% coverage in all townships by 2011.

Polio Eradication Measures

Myanmar is conducting four strategies for Polio Eradication with strong political commitment and tremendous community involvement. These are:

- Routine OPV Immunization to achieve high coverage throughout the country.
- Conducting National Immunization Days (NIDs) and Sub National Immunization Days (SNIDs). Myanmar has conducted 8 times of National Immunization Days and 5 times of Sub- National Immunization Days (SNIDs).
- Conducting Mopping up Immunization to wild polio virus transmitted areas and high risk areas.
- High quality Acute Flaccid Paralysis (AFP) surveillance.

The last case of wild poliovirus was found on 13th February, 2000. Due to polio eradication activities of Myanmar, WHO certified Polio Eradication of Myanmar on 13th February, 2003.

The country's 6 year long polio free status has been interrupted by the recent report of an outbreak of 11 cases of wild- polio virus in Maungdaw and Buthidaung townships of Rakhine State in the months of March, April and May, 2007.

The country conducted 3 rounds of poilo mop-up and Sub National Immunization Days in 87 townships covering the outbreak area and adjacent areas to rapidly stop the wild poilo virus

transmission. Furthermore, two rounds of National Immunization Days for poilo eradication campaign was conducted all over the country in November and December 2007 with the coverage of 98% and 97% targeting 7.2 million children of 0-5 years of age.

Lt. General Thiha Thura Tin Aung Myint Oo, Secretary (1) of the State Peace and Development Council giving Oral Polio Vaccine and presents to a child at the National Launching Ceremony of NIDs, November 2007

Measles Control Programme

Routine measles immunization for 9-month old children in EPI has been started since 1987. Currently, EPI of Myanmar is immunizing 1.3 million of children under1 year of age with measles vaccine every year. At the present moment, it is planned to conduct follow-up measles immuni-zation for under 5-year-old children in periodic manner i.e; every 3 to 4 years and the simultaneous introduction of two-dose strategy for measles immunization in routine EPI. In the months of January, March and May 2007, Comprehensive Strategies Package for Measles Control (CSPMC) including measles catch-up campaign targeting 6 million children was conducted through-out the country and 5.7 million of the children of the age of 9 months to 5 years could be immunized against measles.

The Commander of Nay Pyi Taw command and Minister for Health opening the Launching Ceremony of the Comprehensive Strategies Package for Measles Control in Nay Pyi Taw Pyinmana, January 2007.

Sustaining Achievements

Leprosy

Leprosy was one of the major public health problems in Myanmar for many years. However, Myanmar has achieved Leprosy Elimination Goal at the end of January 2003 with the guidance of National Health Committee and Ministry of Health, partnership of WHO, International and Local Non-governmental Organizations, active participation of community and all health staff involved in leprosy elimination activities.

Further reducing the Leprosy burden

Based on the Global Strategy for Further Reducing the Leprosy Burden and Sustaining Leprosy Control Activities (2006 - 2010), National Leprosy Control Programme has developed National Guide-line for leprosy control. According to the national guide-line leprosy control activities were implemented emphasizing quality care. Throughout the country 3637 new cases were detected and treated with MDT during 2007. Most of the new cases were detected by voluntary reporting.

Activities implemented in 2007

- Case-finding and MDT services throughout the country
- Convention of Fourth Leprosy Elimination Commemorative Day
- Meeting of National Task force for Leprosy Control
- Annual evaluation meeting on leprosy control
- Capacity building of newly appointed Team Leaders (Medical Officers)
- Refresher training on leprosy control for all junior leprosy workers
- Expansion of prevention of disability programme in 20 townships of 2 States and 5 Divisions.
- Training on prevention of disability and self-care for all BHS of POD expanded townships
- Research activities mainly focused on sustaining of leprosy control activities and prevention of disability (POD) and rehabilitation

Prevention of Disabilities and Rehabilitation Activities

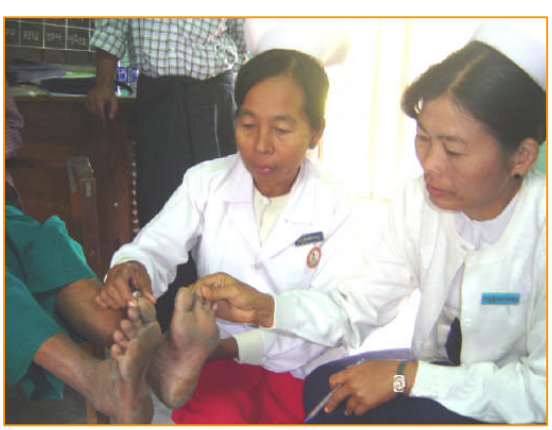
The National Leprosy Control Programme has more emphasized on prevention of disabilities and rehabilitation activities. During 2007 POD programme were expanded in (20) townships of Mon and Shan (S) State, Mandalay, Magway, Sagaing, Yangon and Ayeyawaddy Divisions. Regular

case assessment of leprosy affected persons with disability grade 1 and 2 was done in 9 townships of previous JICA area and all townships of Bago Division where POD activities are being implemented.

Achievement and Current Situation

Indicators	2005	2006	2007
Registered Cases	2679	2763	2892
Prevalence Rate/ 10,000 Population	0.48	0.47	0.50
New Cases	3571	3573	3637
Cases of release from treatment (during the year)	3694	3621	3441
Cases of release from treatment (cumulative)	263,657	267,278	270,719

Exhibition on
5th Leprosy Elimination Commemorative Day



POD Activities by Basic Health Staff

Trachoma Control and Prevention of Blindness

Trachoma Control and Prevention of Blindness project was launched in 1964. At that time trachoma was main cause of blindness in Myanmar and active trachoma rate was 43% in trachoma endemic areas (central Myanmar). With the concerted effort of the project with support of Government, WHO, UNICEF and NGOs, active trachoma rate was reduced to under 1% in 2000. As trachoma blindness is greatly reduced, cataract becomes main cause of blindness in the country.

According to 1998 ocular morbidity survey, blindness rate is 0.6% and main causes of blindness are:

Main Causes	Percent (%)
Cataract	63
Glaucoma	16
Posterior segment diseases	7
Trachoma	4
Corneal opacity	3
Trauma	1
Others	6

WHO has laid down the strategy "Vision 2020, the Right to Sight: Elimination of avoidable blindness" and Myanmar Prevention of Blindness project is trying best to fight against avoidable blindness.

Prevention of Blindness project has 16 secondary eye centers in Mandalay, Magway, Sagaing (lower part) and Bago (east) divisions headed by ophthalmologists with field staff. The project is covering 18.1 million people in 79 townships of those 4 divisions.

National Objective

- To reduce blindness rate to less than 0.5%.

Strategies

- Improving cataract surgical rate and quality of surgery
- Making Primary Eye Care available to all BHS and eliminating the avoidable blindness.
- Promotion of community participation.
- Provision of cataract surgical services at affordable price and free services to poor patients (20447 cataract operations and 5250 free of charge operations in 2007).
- Conducting outreach services (5184 outreach cataract operations in 2007)

Services Provided by the Project

Type	Activities
Promotive (Government)	▪ Greening of Central Myanmar ▪ Improving water supply
Preventive (for Trachoma)	▪ Village and school eye health services by field staff and ophthalmologist ▪ Tetracycline eye ointments for trachoma patients ▪ Trichiasis surgery (field) ▪ Referral of other eye diseases
Curative	▪ Medical and surgical services at secondary eye centres and fields ▪ Outreach cataract surgery
Training	▪ Primary Eye Care Training to basic and voluntary health workers and NGOs (400 BHS were trained in 2007)
National Eye banks (Yangon and Mandalay)	▪ Procurement, ▪ Quality control & ▪ Distribution of corneal tissue
Operational Research	▪ Rapid assessments of trachoma were done in three districts (Mandalay, Pakokku and Pyinmana) to identify pocket area for elimination of trachoma
Low cost Eye drop Production	▪ Done at Prevention of Blindness programme Region (3) Meiktila, supported by Christoffel- Blinden Mission

School Eye Health Examination

Accomplishments in 2007

Cataract surgery	20447
Glaucoma surgery	2596
Other major surgery	873
Other minor surgery	14094
Trichiasis surgery	4897
No. of eye drop bottles produced	37000
Free of Charge Cataract Surgery	5250
No. of villages examined	1782
No. of population examined	1068257
No. of schools examined	948
No. of students examined	155470

Provision of Outreach Services for Eye Health

MANAGING HEALTH WORK FORCE

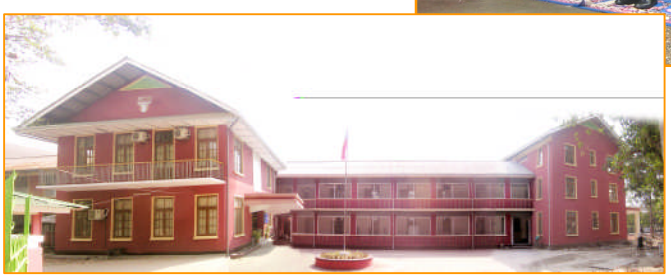
The Department of Medical Science strives for production of efficient and motivated human resources for health for deployment in curative as well as in academic institutes of Myanmar health system. For that purpose, there are 4 medical universities, 2 dental universities, 2 universities of pharmacy, 2 universities of medical technology, 2 nursing universities and 1 university of community health. The Universities confer bachelor degree and also conduct postgraduate courses in respective disciplines. There are 46 nursing & midwifery and related training schools country-wide conferring diploma and certificate in respective areas.

Since the public health sector is at the top of the scheme for health promotion and development process, a post-graduate level University of Public Health was opened in 2007 in collaboration with and support of WHO.

The University had Nine Departments viz., (1) Health Policy and Management (2) Epidemiology (3) Biostatistics (4) Health Behaviour and Communication (5) Occupational and Environmental Health (6) Population and Family Health (7) Nutrition and Food Safety (8) Public Health Laboratory and (9) Medical Education Science & Information Technology.

The University will conduct Doctorate, Master, Diploma, Specialty courses, Certificate courses and Training courses. It is the academic institute where medical as well as non-medical personnel will be doing public health studies.

Opening Ceremony of University of Public Health (Yangon) (16-7-2007)



There is increased intake into Universities and training courses alike so that sufficient human resource for health can be produced each year. The annual intake of new recruits into different academic institution is as follows:-

University/ Training School	No. of Intake each Year
University of Medicine	2400
University of Dental Medicine	300
University of Pharmacy	300
University of Medical technology	300
University of Nursing	300
University of Community Health	180
Nursing Training Schools	1200
Midwifery Training Schools	1050

Universities under the Department of Medical Science

These academic institutions had up till now trained and awarded baccalaureate degree to 26591 doctors, 2305 dental surgeons, 1118 pharmacists, 1282 medical technologists, 2384 nurses, 729 health assistants. Diploma courses had trained 19397 nurses and midwifery certificates were awarded to 28286 trainees altogether. There are also career ladder programmes for advancement of service personnel.

Midwifes, lady health visitors, public health supervisor I and II are basic health front line workers in the essence of primary health care system practiced in Myanmar. These workers are the corner stone for successful implementation of rural health development programme. Regionally administered workshops and training sessions are regularly given to these workers for updating their technical know-how and work process such as report and returns in electronic form, procedure about prevention of avian flu infection etc.

Township health assistants, health assistant grade (1) and health assistants from different regions have been yearly trained on improving managerial as well as technical skill.

Basic health staffs and voluntary health workers, who performed their duties outstandingly from different regions of the country, were selected yearly in recognition of their efforts in providing health services. Study tours are arranged for outstanding staffs so that they can share their experiences with fellow workers and have the opportunities to learn the progress taking place in different regions.

Study Tour for Outstanding Basic Health Staffs and Voluntary Health Workers

Following orientation and introduction to concepts of Management Effectiveness Programme (MEP), sequential training on modules covering training of trainers for facilitation, continuous personal and professional development and team building and leadership are provided to basic health staff of the project townships.

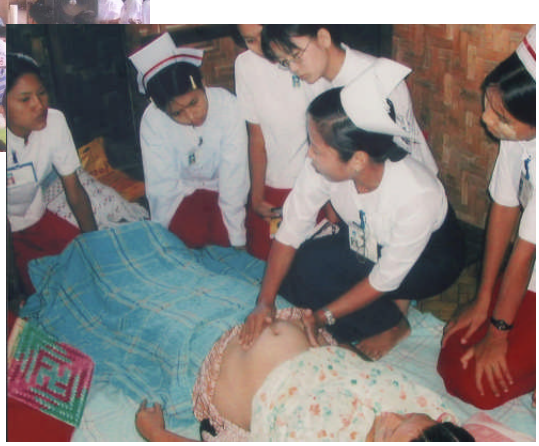
As a result of training basic health staff together with the community will be able to identify their health problems and find out the solutions through MEP approach in their work places.

In addition to training and production of basic health workers, the Department of Medical Science had postgraduate training courses viz., 6 diploma courses, 29 master courses, 30 Doctorate courses and 7 PhD courses. The number of trainees who had done successfully in each course so far was 1736 diplomas, 3356 masters, 186 doctorates and 56 PhDs. These postgraduates serve in tertiary hospitals or academic and research institutions.

Moreover, screened candidates had been sent for studies abroad in clinical as well as basic science studies. In collaboration with respective examination boards of Royal College of UK, locally held examinations had given benefits to the trainees here. Abroad, in 2007, three candidates attained MRCP, three candidates attained MRCOG, one surgeon attained MRCS, seven candidates attained Master degrees in various fields of study and one achieved Doctorate degree.

The University of Dental Medicine (Yangon) is a teaching Institution where a 50-bedded dental hospital accepting in-patients and doing major operations, is located. The team in that hospital had done operations such as cleft lip repair, cleft palate repair, hemi-mandibulectomy and hemi-maxilectomy. This is an example of a unit developing into a hospital whereby teaching and curative aspects lead to achievement hand in hand.

Field Training for
Medical Students



Practical Training for
Nursing Students

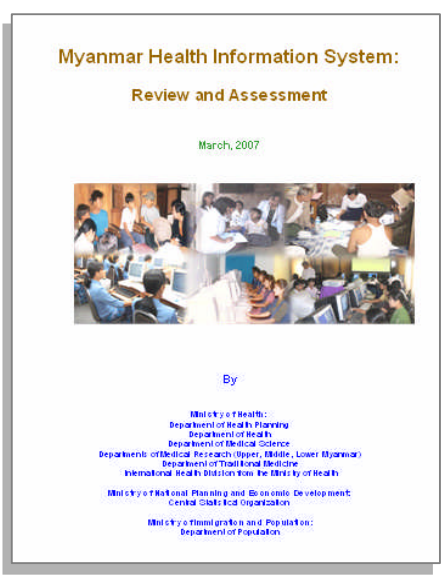
EVIDENCE FOR DECISION

Health Information Services

To fulfill the need of integrated national health information system ensuring timely, reliable and accurate information based on minimal essential data set, the Health Management Information System (HMIS) was established in 1995. The new HMIS could replace the existing practice of data collection based on the information needs of the fragmented vertical health programmes. The main objectives are to ensure minimum essential information of prioritized health projects are integrated in the national health information system, to generate and report health information in the course of implementation of the National Health Plans for timely and effective monitoring and evaluation and to reduce the data collection burden for basic health staff. HMIS includes community based as well as institutional based information as a means to support making evidence based decisions in policy design, planning and management so as to improve overall health system performance. HMIS is now in the process of further development by establishing computer networking (e-Health System) in all states and divisions with support of the WHO.

Hospital reporting is another facet of health information service well established through monthly collection of hospital morbidity and administrative information from public hospitals. Morbidity information which is individual case summaries with analysis of all discharges and deaths is processed at the central office (Department of Health Planning). The medical record services have been established in most hospitals and training programme exists for medical record officers. By using (ICD 10) for disease coding, data entry, processing and analysis international comparison is facilitated. Computerized medical record system has been established in some major hospitals since 2000 and to be further expanded.

To further strengthen the health information system, ICT Centre has been established in the Ministry of Health. This will enable extension of information network and rapid and smooth flow of information. A web site has also been established in the Ministry of Health providing updated information on health activities and achievements and also the opportunity to search health literatures.



Following the launching of Health Matrix Network (HMN) at the World Health Assembly in 2005, Myanmar joined the international effort for strengthening health information system in the country.

As part of HMN activities, assessment of current health information system has been conducted in the Ministry involving stake holders. Findings of the assessment will be used as inputs for developing comprehensive plan for strengthening National Health Information System.

Health Research

Department of Medical Research (Lower Myanmar) carried out extensive research in malaria, diarrhoea, anaemia, iodine deficiency disorders, snake bite, viral hepatitis and intestinal helthminthiasis. The findings have contributed to the diagnosis, management, prevention and control of these health problems.

Research programmes are mainly focused on six major diseases namely, malaria, tuberculosis, HIV/AIDS, diarrhoea and dysentery, diabetes and hypertension as well as on application of traditional medicines in treatment of several illnesses. Quality control and evaluation of available malaria rapid diagnostic tests, therapeutic efficacy testing of different artemisinin combinations on falciparum malaria, different epidemiological, immunological and molecular studies of drug resistant malaria, drug resistant tuberculosis, leprosy, dengue, HIV/AIDS, avian influenza, hepatitis B and C are the leading projects. The findings and evidences came out from these are being disseminated for the effective utilization in management and control programmes of respective diseases. Acute toxicity testing of various traditional medicinal plants, extracts and formulation; screening of these for Pharmacological activity; screening and identification of unknown Drugs, Chemicals and Biological poisonings, by using hi-tech equipments and methods such as High Performance Liquid Chromatography (HPLC), Gas Chromatography Mass Spectrometry (GCMS) and Gas Chromatography (GC); gender verification by Barr body examination; chromosomal abnormalities of human and animals; studies on thalassaemias, haemoglobinopathies, blood and coagulation disorders and tumour markers (for liver, bladder and cervix) are the research based services that the Department is giving to the public.

To further expand research activities and traditional medicine research, two new medical research departments have been established, one in upper Myanmar (Pyin Oo Lwin) and the other in central Myanmar (Pyinmana).

With the establishment of new departments of medical research in upper and middle parts of the country, more researches, particularly focusing on Traditional Medicine could be done. A herbal garden established in the Department of Medical Research (Upper Myanmar) could nurture over 300 species of herbal and medicinal plants from all over the country. Up to 9000 herbal and medicinal plants are now being grown by the department. The department could also study effects of these plants on treating malaria, diabetes mellitus, hypertension and diarrhoea diseases in collaboration with Department of Traditional Medicine, Department of Phamacology of the Mandalay Medical University and Mandalay University of Pharmacy. Moreover, basic, applied and health systems research are being carried out in collaboration with 200 bedded Hospital (Pyin Oo Lwin), Children Hospital, Central Women's Hospital, University of Medicine, University of Pharmacy, Vector Borne Disease Control Programme, National Tuberculosis Programme, Public Health Laboratory in Mandalay.

Current research activities undertaken in Department of Medical Research (Central Myanmar) cover both basic, applied and health systems research. They include therapeutic efficacy of anti-malarial drugs combination, and traditional anti-malarial drug. Behavioural studies relating to

common communicable diseases like DHF and TB are also in the list. Study on therapeutic efficacy of traditional medicine formulation and plants on non-communicable diseases particularly diabetes mellitus and communicable diseases are also in progress.

Moreover, the Department of Health Planning, the Department of Health, the Department of Medical Science and the Department of Traditional Medicine are also implementing research activities in addition to their principal functions. Two main types of applied research, monitoring and evaluation (M&E) research and health systems research are conducted by the Department of Health Planning.

Health Systems Research Methodology trainings are conducted for post-graduate students in the medical universities in Yangon and Mandalay and for in-service health staff from states and divisions. Goals, functions and concepts of health systems are also disseminated among township health committees. User friendly health systems research tools are also to be developed to conduct health systems research studies.

Consequent to the urgent need for evidence in the health programme management many researchers had commenced to conduct Health Systems Research (HSR) during the last decade. In Myanmar development of HSR has been attempted through capacity building of health workers, increasing their knowledge and experiences through training, workshops and seminars, and encouraging utilization of HSR in health programme management. Collaboration with both international agencies and other related ministries in the country to conduct health research has also been undertaken.

Research unit under the Department of Traditional Medicine is also conducting studies to assess safety, efficacy and quality of Traditional Medicine. In collaboration with Medical Research Departments, research activities to explore new traditional medicine to treat six common diseases namely diarrhoea, dysentery, malaria, tuberculosis, hypertension and diabetes mellitus are also being conducted.

TRADITIONAL MEDICINE

The Myanmar Traditional Medicine is one with profound medical treatises, a variety of potent and effective medicines and a diversity of therapies.

With the aim to extend the scope of health care services for both rural and urban areas, health care by Myanmar Traditional Medicine services is provided through Myanmar Traditional Medicine hospitals and clinics in all states and divisions of Myanmar. There are now, two 50 bedded Myanmar Traditional Medicine hospitals, twelve 16 bedded hospitals and 237 district and township clinics and sub-centers. In addition to these public institutions, private Traditional Medicine Practitioners are also taking part in health care provision in township and hard to reach areas.

In 2007, the Department of Traditional Medicine started to provide emergency traditional medicine kits in 3 townships as a pilot project. The objective of the project is to provide easy access to common traditional medicinal drugs for minor illness especially for rural areas. The kits are handed over to the persons who live in rural area and also who have no access to western medicine. The government and private donors supported the initial provision of kits and the replenishment of the medicines is to be accomplished through user charges. The report by evaluation and monitoring team revealed that users benefited from this project as Traditional medicine is more economical, saves time and relieves minor illnesses.

Teaching of Traditional Medicine

Myanmar Traditional Medicine is truly an inherited profession whose development has interrelations with the natural and climate conditions, thoughts and convictions and the socio-cultural system of Myanmar.

Before 1976, the knowledge of Myanmar Traditional Medicine was handed down from one generation to another. In 1976, with the aim to improve the qualification of traditional medicine practitioners, the Institute of Myanmar Traditional Medicine was established and systematic training programmes were started to train and produce competent Traditional Medicine Practitioners. A two year course together with one year internship was conducted conferring, a Diploma in Myanmar Traditional Medicine to successful candidates. The yearly intake of students is about 100. The Institute had already produced (2187) diploma holders.

The University of Myanmar Traditional Medicine was established in 2001, using modern teaching learning methodologies in accordance with the systematic curricula, developed by the joint efforts of Myanmar traditional practitioners and medical educationists. The curriculum covers all the Traditional Medicine subjects of the four Nayas, basic science and basic concepts of western

medicine. It is a four years course together with one year internship and confers Bachelor of Myanmar Traditional Medicine. The yearly intake is 175 persons.

University of Traditional Medicine (Mandalay)

Basic concept of Myanmar Traditional Medicine has been introduced to the curriculum of 3rd year M.B.,B.S medical students since 2003. A module, comprising 36 hours of teaching and learning sessions of traditional medicine was developed and incorporated together with assessment for completion. A certificate was presented to all successful candidates and the main aim of the course is to familiarize medical students with Myanmar Traditional Medicine. This is the first of its kind where traditional medicine is integrated into western medicine teaching programme in the world. It gives oppotunities for medical students to explore the concepts of traditional medicine and paves a venue for interested student to venture into the realms of Myanmar Traditional Medicine at a deeper level. Among the first batch of medical graduates three has joined the Research and Development section, of the Department of Traditional Medicine to take up further studies and research in the field of Myanmar Traditional Medicine.

Manufacturing of Traditional Medicine

The government is giving impetus to developing Traditional Medicine systematically reach international standards and to manufacturing potent and efficacious Traditional Medicine based on scientific evidences and practices.

Traditional Medicines have been manufactured by both public and private sectors. The Department of Traditional Medicine takes responsibility for the public sector and has two

traditional medicine factories. According to the increasing demand of users, the department produces more traditional medicine drugs. Medicines are produced according to the national formulary and Good Manufacturing Practices (GMP) standards. In addition, these two factories manufacture twenty one varieties of Traditional Medicine in powder form, which are provided free of charge to patients attending public Traditional Medicine facilities, and the factory also produces 12 kinds of drugs in tablet form for commercial purposes.

The private Traditional Medicine industry is also developing and undertaking mass production of potent medicine according to the GMP standards. Some private industries are now exporting traditional medicine which are well accepted.

Due to the encouragement, regulations and assistance of the government, and the manufacturing of standard Traditional Medicine through correct and precise methods which complies with international norms of production processes, storage system and packaging methods using modern machinery, public trust and confidence in indigenous drugs has greatly been enhanced. There is a progressive increase in demand for traditional medicine not only in rural areas but also in urban areas.

Laws

Traditional Medicine Council Law

The Myanmar Indigenous Medicine Act was enacted in 1953. According to the Act, the State Traditional Medicine Council was formed; it was a leading body and responsible for all the matters relating to Traditional Medicine. To keep abreast with the changing circumstances, the department reviewed and updated the Myanmar Indigenous Medicine Act and transformed it into Myanmar Traditional Medicine Council Law, which was enacted in the year 2000. One of the objectives of the law is "to supervise Traditional Medicine Practitioners for causing abidance by the rule of conduct and discipline". At present, there are about six thousand Traditional Medicine practitioners registered under this law. According to the law, the licenses for practicing are issued to the persons who have diploma in Myanmar Traditional Medicine or Bachelor of Myanmar Traditional Medicine.

Traditional Medicine Drug Law

In 1996, the Government promulgated the Traditional Medicine Drug Law in order to control the production and sale of Traditional Medicine drug systematically. This was followed by the series of notifications concerning registration and licensing, labeling and advertising. One of the objectives of the Traditional Medicine Drug Law is "to enable the public to consume genuine quality, safe and efficacious traditional drugs".

According to the Traditional Medicine Drug Law, all the Traditional Medicine drugs produced in the country have to be registered and the manufacturers must have licenses to produce their products. There are all together (8436) registered items of drugs and (1456) manufacturers have already got the licenses for production at the end of 2006. Practices of good manufacturing are considered before issuing the licenses. In addition, the department also takes control of advertisement of these commodities.

Myanmar Traditional Medicine Practitioners Association

Myanmar Traditional Medicine Practitioners Association has been formed since 2002 to promote unity, harmony and adherence to code of conduct of the Traditional Medicine Practitioners. The objectives of the association are to implement programmes through the work of practitioners well-versed in their field, to held seminars in which the physicians themselves can seek means to revive hidden and extinct subjects, therapies and drugs and to unite all the practitioners of the various groups under the banner of Myanmar Traditional Medicine Practitioner Association.

Traditional Medicine Conference

Myanmar Traditional Medicine Practitioners' Conference has been held annually since 2000 in accord with lofty aims for development of Myanmar Traditional Medicine. Every year, Traditional Medicine Practitioners from all over the country assemble at the conference, to exchange knowledge and hold discussions for perpetuation and propagating of Myanmar Traditional Medicine, for the standardized progress of the science and providing more effective and broader health care services through the profession. The practice of convening the annual conference will bring good results not only to the field of Traditional Medicine, but also to the nation and people. The Traditional Medicine Conference was held every year followed by Traditional Medicine Exhibition which is aimed at upgrading the quality of Myanmar Traditional Medicine.

Research and Development

In 1980, Myanmar Traditional Medicine National Formulary has been compiled for 57 numbers of traditional medicine formulations, in each monograph including formulary, therapeutic uses, caution and dosage in Myanmar language. These official Myanmar traditional medicines were standardized botanically and physico-chemically and evaluated toxicologically and pharmacologically in the period of 1984-1989. This project has been conducted with the assistance of UNDP/ WHO. Five volumes of traditional medicine of Myanmar had been published in English and now are being used as references and guidelines where and when necessary such as quality control system, health education and the use of traditional medicine formulation in primary health care.

The monographs of 120 Myanmar medicinal plants had been successfully published in volumes 1 and 2 respectively in 2000 and 2006 will provide basic information relevant to the use of medicinal plants in primary health care.

HEALTH STATISTICS

Vital Statistics

Health Index	1988	1999	2000	2001	2002	2003	2004	2005
Crude Birth Rate (per 1,000 population)								
- Urban	28.6	24.5	24.2	23.9	21.2	19.9	19.1	19.0
- Rural	30.5	27.1	26.4	26.3	24.6	22.4	22.0	21.9
Crude Death Rate (per 1,000 population)								
- Urban	8.9	6.0	6.3	6.2	6.1	5.6	5.5	5.5
- Rural	9.9	7.8	7.3	7.1	7.0	6.5	6.4	6.4
Infant Mortality Rate (per 1,000 live births)								
- Urban	47.0	55.1▲	48.5	48.3	48.4	45.3	45.2	45.1
- Rural	49.8	62.5▲	50.2	50.1	50.7	47.1	47.0	47.0
U5 Mortality Rate (per 1,000 live births)								
- Union	-	77.77▲	-	-	-	66.1▲	-	-
- Urban	72.9	65.12▲	73.5	73.1	72.6	72.2	70.1	70.0
- Rural	-	85.16▲	76.3	73.8	73.5	73.2	71.4	71.2
Maternal Mortality Ratio (per 1,000 live births)								
- Union	-	2.5▲	-	-	-	-	-	3.16▲
- Urban	1.0	1.8▲	1.1	1.0	1.1	0.98	0.98	0.96
- Rural	1.9	2.8▲	1.9	1.8	1.9	1.52	1.45	1.43
Population Growth Rate	1.96	2.02	2.02	2.02	2.02	2.02	2.02	2.02
Average Life Expectancy								
- Urban (Male)	59.0	61.0	61.1	61.5	61.8	62.1	62.4	62.5
(Female)	63.2	65.1	65.1	65.6	66.0	66.2	66.5	66.6
- Rural (Male)	56.2	60.3	60.4	60.8	61.3	61.5	61.8	62.0
(Female)	60.4	62.7	62.8	63.3	63.8	64.0	64.5	64.9

***Source**: Most data unless specifically indicated are from Statistical Year Book 2005 by Central Statistical Organization (CSO) and data for 2005 are quoted from Vital Statistics Report 2005 by CSO and Ministry of Health.*

The data specifically indicated are quoted from nationwide surveys undertaken in the country.

▲ *National Mortality Survey, CSO, 1999*

▲ *Overall and Cause Specific Under Five Mortality Survey, Ministry of Health/ UNICEF, 2002-2003*

▲ *Nationwide Cause Specific Maternal Mortality Survey, Ministry of Health/ Survey, 2004-2005*

Health Manpower Development

Health Manpower	1988-89	2003-04	2004-05	2005-06	2006-07	2007-08*
Total No. of Doctors	12268	17081	17564	18584	20501	21725
- Public	4377	6331	6473	6941	7250	8033
- Co-operative & Private	7891	10750	11091	11643	13251	13692
Dental Surgeon	857	1285	1365	1594	1732	1867
- Public	328	543	580	625	707	793
- Co-operative & Private	529	742	785	969	1025	1074
Nurses	8349	16382	18123	19776	21075	22027
Dental Nurses	96	123	159	162	165	175
Health Assistants	1238	1739	1771	1771	1778	1788
Lady Health Visitors	1557	2679	2796	3025	3137	3259
Midwives	8121	15130	16201	16745	17703	18098
Health Supervisor (1)	487	529	529	529	529	529
Health Supervisor (2)	674	1199	1339	1359	1394	1444
Traditional Medicine Practitioners	290	649	819	819	889	889

* *Provisional actual*

Health Facilities Development

Health Facilities	1988-89	2003-04	2004-05	2005-06	2006-07	2007-08*
Government Hospitals	631	790	824	826	832	839
Total No. of Hospital Beds	25309	33683	34654	34920	35544	36121
No. of Primary and Secondary Health Centers	64	84	86	86	86	86
No. of Maternal and Child Health Centers	348	348	348	348	348	348
No. of Rural Health Centers	1337	1424	1456	1456	1463	1473
No. of School Health Teams	80	80	80	80	80	80
No. of Traditional Medicine Hospitals	2	14	14	14	14	14
No. of Traditional Medicine Clinics	89	237	237	237	237	237

* *Provisional actual*

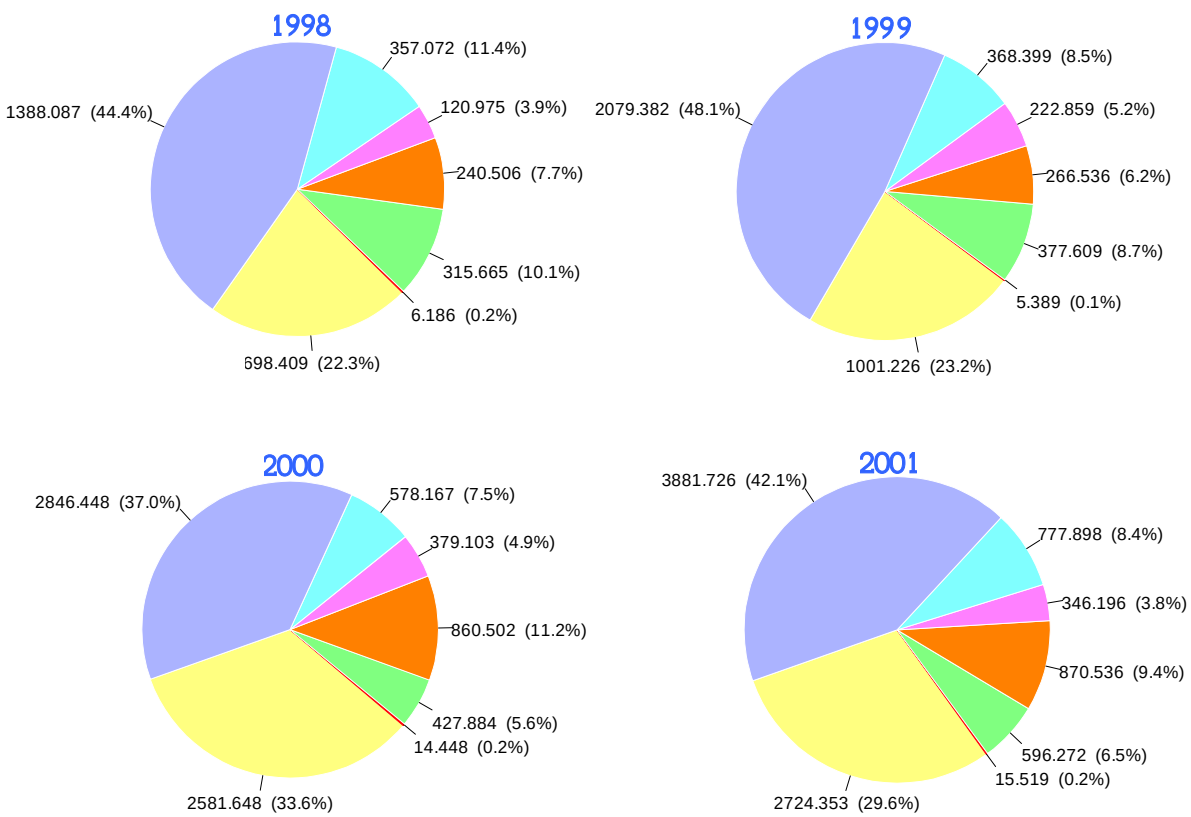
Government Health Expenditure

	1988-1989	2005-2006	2006-2007•
Health Expenditure (Million Kyats)			
- Current	347.1	15407.5	37129.5
- Capital	117.0	8033.9	10887.8
Total	464.1	23441.4	48017.3
Per Capita Health Expenditure (Kyats)	11.8	423.2	849.7

• Provisional actual

Government Health Expenditure by Functions (1998-2001)

(Million Kyats)



Leading Causes of Morbidity (2006)

Sr. No.	Causes	Percent
1.	Other injuries of specified, unspecified and multiple body regions	9.4
2.	Single spontaneous delivery	7.3
3.	Malaria	7.1
4.	Diarrhoea and gastroenteritis of presumed infectious origin	5.6
5.	Other complications of pregnancy and delivery	5.1
6.	Other pregnancies with abortive outcome where classified	3.4
7.	Other diseases of the respiratory system	3.0
8.	Other arthropod-borne viral fevers and viral haemorrhagic fevers	2.3
9.	Toxic effects of substances chiefly non-medicinal as to source	2.1
10.	Gastritis and duodenitis	1.9
11.	Respiratory tuberculosis	1.9
	All other causes	51.0
	Total	100.0

Source: Annual Hospital Statistics Report, Department of Health Planning, 2006

Leading Causes of Mortality (2006)

Sr. No.	Causes	Percent
1.	Malaria	9.0
2.	Other diseases of the respiratory system	4.8
3.	Respiratory tuberculosis	4.6
4.	Other injuries of specified, unspecified and multiple body regions	4.5
5.	Septicaemia	4.2
6.	Other diseases of liver	3.9
7.	Stroke, not specified as haemorrhage or infarction	3.9
8.	Heart failure	3.6
9.	Other heart diseases	2.8
10.	Slow fetal growth, fetal malnutrition and disorders related to short gestation and low birth weight	2.7
	All other causes	56.0
	Total	100.0

Source: Annual Hospital Statistics Report, Department of Health Planning, 2006

Universities and Training Schools under Department of Medical Science

Sr. No.	University/ Training Schools	Degree/ Diploma/ Certificate Conferred
1.	University of Medicine (1), Yangon	M.B., B.S., Dip. Med.Sc., M.Med.Sc., Ph.D, Dr. Med. Sc.
2.	University of Medicine, Mandalay	M.B., B.S., Dip. Med.Sc., M.Med.Sc., Ph.D, Dr. Med.Sc.
3.	University of Medicine (2), Yangon	M.B., B.S., Dip. Med.Sc., M.Med.Sc., Ph.D, Dr. Med.Sc.
4.	University of Medicine, Magway	M.B.,B.S.
5.	University of Public Health, Yangon	Dip. Med.Sc, Dip.Med.Ed, MPH, Ph.D.
6.	University of Dental Medicine, Yangon	B.D.S., Dip.D.Sc., M.D.Sc., Dr. D.Sc., D.DT.(Diploma in Dental Technology)
7.	University of Dental Medicine, Mandalay	B.D.S.
8.	University of Nursing, Yangon	B.N.Sc., M.N.Sc., Diploma Speciality Nursing (Dental, EENT, Mental Health, Paediatrics, Critical Care, Orthopaedics)
9.	University of Nursing, Mandalay	B.N.Sc., M.N.Sc.
10.	University of Medical Technology, Yangon	B.Med.Tech., M.Med.Tech.
11.	University of Medical Technology, Mandalay	B.Med.Tech.
12.	University of Community Health, Magway	B.Comm.H.
13.	University of Pharmacy, Yangon	B.Pharm., M.Pharm.
14.	University of Pharmacy, Mandalay	B.Pharm.
15.	Nursing Training Schools	Diploma
16.	Midwifery Training Schools	Certificate
17.	Lady Health Visitor Training School	Certificate
18.	Nursing Field Training School	-
19.	Domiciliary Midwifery Training School	-

International Non-Governmental Organizations working in Myanmar

1. Action International Contre La Faim (AICF)
2. Adventist Development and Relief Agency (ADRA)
3. Aide Medicale International (AMI)
4. Alliance International HIV/AIDS
5. Artsen Zonder Greenzen (AZG)
6. Asian Harm Reduction Network (AHRN)
7. Asia Regional HIV/AIDS Project (ARHP)
8. Associations Francois Xavier Bagnoud (AFXB)
9. Asian Maternal and Child Welfare Association (AMCWA)
10. Association of Medical Doctors of Asia (AMDA)
11. Burnet Institute (Australia)
12. CARE Myanmar
13. Coorporation and Sviluppoonlus (CESVI)
14. Humanitarian Services International (HSI)
15. International Organization Migration (IOM)
16. International Federation of Anti-Leprosy Association (ILEP)
17. Latter-Day Saint Charities (LDSC)
18. Malteser (Germany)
19. Marie Stopes International (MSI)
20. Medicins du Monde (MDM)
21. Medicins Sans Frontieres - Switzerland (MSF-CH)
22. Merlin
23. PACT Myanmar
24. Partners International Solidarity Organization
25. Population Services International (PSI)
26. Progetto Continent
27. Save the Children (Japan)
28. Save the Children (UK)
29. Save the Children (US)
30. Support Fund Myanmar
31. Terre des homes
32. World Concern
33. World Vision International (WVI)

International Non-Governmental Organizations working in Myanmar

1. Union Solidarity and Development Association (USDA)
2. Myanmar Women's Affairs Federation (MWAF)
3. Myanmar Maternal and Child Welfare Association (MMCWA)
4. Myanmar Red Cross Society
5. Myanmar Medical Association (MMA)
6. Myanmar Dental Association (MDA)
7. Myanmar Nurses Association (MNA)
8. Myanmar Health Assistant Association
9. Myanmar Council of Churches
10. Myanmar Anti-narcotic Association
11. Myanmar Business Coalition on AIDS
12. Pyi Gyi Khin