The Republic of the Union of Myanmar

Ministry of Health

National Health Plan

(2011-2016)

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Table of Contents

Table of Contents

Table of Contents

Table of Contents

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Myanmar

1. Introduction

The State has laid down four social objectives along with 12 national objectives and one of the social objectives is to “uplifting health, fitness and education standard of the entire nation”. In order to realize this social objective and to implement the National Health Policy, Ministry of Health has set two objectives-“to enable every citizen to attain full life expectancy and enjoy longevity” and “to ensure that every citizen is free from diseases”. Three strategies have been identified to fulfill these objectives and they are: widespread dissemination of health information and education to reach rural areas, enhancing disease prevention activities and providing effective treatment of prevailing diseases.

2. Background

Promoting health, preventing diseases, providing effective treatment and rehabilitating are the comprehensive health services required for health development of a country. Health plans had been formulated and implemented systematically both at the national and regional levels to see that available human, financial and material resources are most effectively and efficiently utilized to implement these services.

Starting from 1954 health plans had been included as part of *Pyi Daw Thar* (State Welfare) Plan for the period 1954 to 1960. From 1960 onwards, health activities were mostly in the form of campaigns for controlling and eliminating communicable diseases, and promoting maternal and children’s health. With the dawn of Health for All movements four yearly health plans using country health programming and primary health care approach were developed. They were called Peoples’ Health Plans and spanning the periods 1978-1990. These plans were formulated within the framework of overall National Development Plans for the corresponding periods.

With the change in the regime and political and economic system health plans formulated were termed National Health Plans, although these plans more or less followed the same methodology and approaches as the previous plans. Initial two cycles of National Health Plan covered the periods (1991-1992) and (1993-1996). Following these periods and in line with short term five yearly National Development Plans, National Health Plans had been formulated for the periods (1996-2001), (2001-2006) and (2006-2011).

3. Implementation status of National Health Plan (2006-2011)

National Health Plan (2006-2011) had been formulated and implemented within the frame work of third short term National Development Plan. This health plan was composed of 11 programmes and 67 projects. An evaluation meeting was held in June 2010 to assess the status of implementation and realization of the objectives and targets and to identify strengths, weaknesses and measures needed to remedy these. This meeting was followed by another in September 2010 when His Excellency Deputy Minister for Health inaugurated and chaired the meeting, which was attended by the Directors General, Deputy Directors General, Programme Directors, Project Managers and responsible officials. The meeting identified strengths and weaknesses encountered during the course of implementing the Plan and the followings are the brief description for each of the 11 programmes:

Sr	Programme	Strength	Weakness
1.	Community Health Care	(a) More support from the government in implementing maternal and child health services (b) Improving coverage in maternal and child health services because of willingness of the community to participate and improving procedures of work (c) Ability to conduct quality trainings nationwide (d) Increasing involvement of local and international NGOs existing in the whole country in provision of health services for the people	(a) Production and deployment of human resources for health are not supportive of implementation of the projects (b) Poor monitoring and evaluation (c) Collaboration with related sectors and organizations
2.	Disease Control	(a) Improving collaboration with related sectors and organizations (b) Use of information technologies is effective and key factor in implementation of project activities	(a) Unable to record occurrence of TB and HIV/AIDS timely (b) Unable to train skilled health staff (c) Need to train and retain public health staff with good basic knowledge (d) Need to develop means to extend health services to rural areas

Sr	Programme	Strength	Weakness
3.	Hospital Care	(a) Able to expand and upgrade hospitals and opening new station hospitals as planned (b) Able to give treatment guidelines and conduct workshops and trainings for basic health staff for provide improved quality care	(a) Weak administration and management in township and district levels (b) Unable to deploy skilled staff due to budget constraints (c)Lack of intra-departmental collaboration
4.	Environmental Health	(a) Able to collaborate with related departments to protect health of people from environmental hazards (b) Promoting health by monitoring and preventive services (c) Reducing incidence of water borne diseases (d) Improving collaboration for upgrading to healthy cities	(a) Inadequate budget, human resources (b) Poor transportation to reach rural areas

Sr	Programme	Strength	Weakness
5.	Health System Development	(a) Able to provide health system research trainings for health managers to improve their ability to make sound decision in strengthening health systems (b) Collaboration with WHO in strengthening health financing system (c) Compiling and distributing National Health Accounts biannually (d) Conducting health financing studies in states and divisions (e) Strengthening health financing systems in GAVI-HSS pilot townships	(a) Lack of utilizing concepts of health systems research methods systematically (b) Lack of valid and complete data for policy related projects like alternative health financing and partnership (c) Need of organizational activities for enhancing partnership for health development
6.	Health Promotion	(a) Able to provide behavioral change communication among the communities (b)Able to Distribute health education pamphlets to rural health centres (c) Conducting health education workshops and trainings for government and private sectors successfully	(a) Limitations in availability of skilled human resources for health

Sr	Programme	Strength	Weakness
7.	Health Management Information System	(a) Ability to collect hospital data timely (b) Able to provide computers to state and divisional health departments and setting up computerized data storage (c) Networking information on human resources for health (d) Calculating and evaluating improved and quality health indicators for central as well as regional levels	(a) Limited utilization of computerized health information systems (b) Lack of maintenance of computer networking parts due to limited skills (c) Inconsistent data from private sector and traditional medicine (d) Limitations in facilities, budget and human resources for health
8.	Health research	(a) Could identify national health problems (b) Better collaboration between project managers (c) Could Utilize research findings (d) Could strengthen capacity of health staff through trainings local and abroad	(a) Limited human resources (b) Need to produce capable, skilled and qualified human resources for health more (c) Need more modern equipment
9.	Laboratory and Blood safety	(a) Could set up type A and type B laboratories as planned (b) Could provide trainings for laboratory technicians grade (2), and skill trainings for laboratory technicians grades (3) and (4)	(a) Could not finish setting up type B and type C laboratories (b) Could not produce AHG and Coomb's sera (c)Limited human resources and need trainings for upgraded skills

Sr	Programme	Strength	Weakness
10.	Food and drug control	(a) Could carry out quality control measures for food according to National Food Law (1997) and ASEAN norms (b) Could carry out quality control measures for drugs (c) Could provide study tour and trainings (d) Could provide trainings related to drug control for heads of township health departments, health assistants and pharmacists from states/divisions, districts and townships as targeted (e) Could provide trainings for those importing drugs and undertaking laboratory analysis of drugs as targeted (f) Could perform field inspections and education activities as targeted (g) Could carry out inspection and education activities for consumer protection, close to target	(a) Could not provide monitoring and inspections for food and drugs at ports yet (b) Could not appoint medical officers, nurses and staff as targeted

Sr	Programme	Strength	Weakness
11.	Traditional Medicine Development	(a) Could produce Traditional Medical graduates, provide refresher trainings and hands on trainings (b) Could test traditional medicine in the market for quality assurance and upgrade herbal gardens (c) could strengthen capacity of drug inspectors and upgrade laboratory equipment	(a) Inadequate working space (b) Need of technicians and equipment (c) Need to train more qualified professionals for strengthening traditional medical research (d) Facing constraints in appointing professionals

To sum up the most commonly encountered drawbacks were related to lack of human and material resources. There need to be a more collaboration between those responsible for planning, training and deployment of human resources in the Ministry of Health. On the other hand, the Ministry of Health had also faced some constraints in filling vacant posts because of some inconsistencies in directives and instructions issued and practiced by other sectors concerned with organizational set up and budgets.

4. Plan formulation process

For providing policy guidance and coordinating measures a central committee for formulating the National Health Plan (2011-2016) was formed on 31 August 2010. The committee was chaired by His Excellency Minister for Health and composed of Directors General from the related ministerial departments and chairs of related social organization. The Director General of the Department of Health Planning was assigned the secretary of the committee. At the same time a working committee for plan formulation was formed. This committee was chaired by the Director General of the Department of Health Planning. Members of the committee were Deputy Directors General and Directors from Departments of the Ministry of Health and other related

ministries. Director (Planning) from the Department of Health Planning was assigned the secretary.

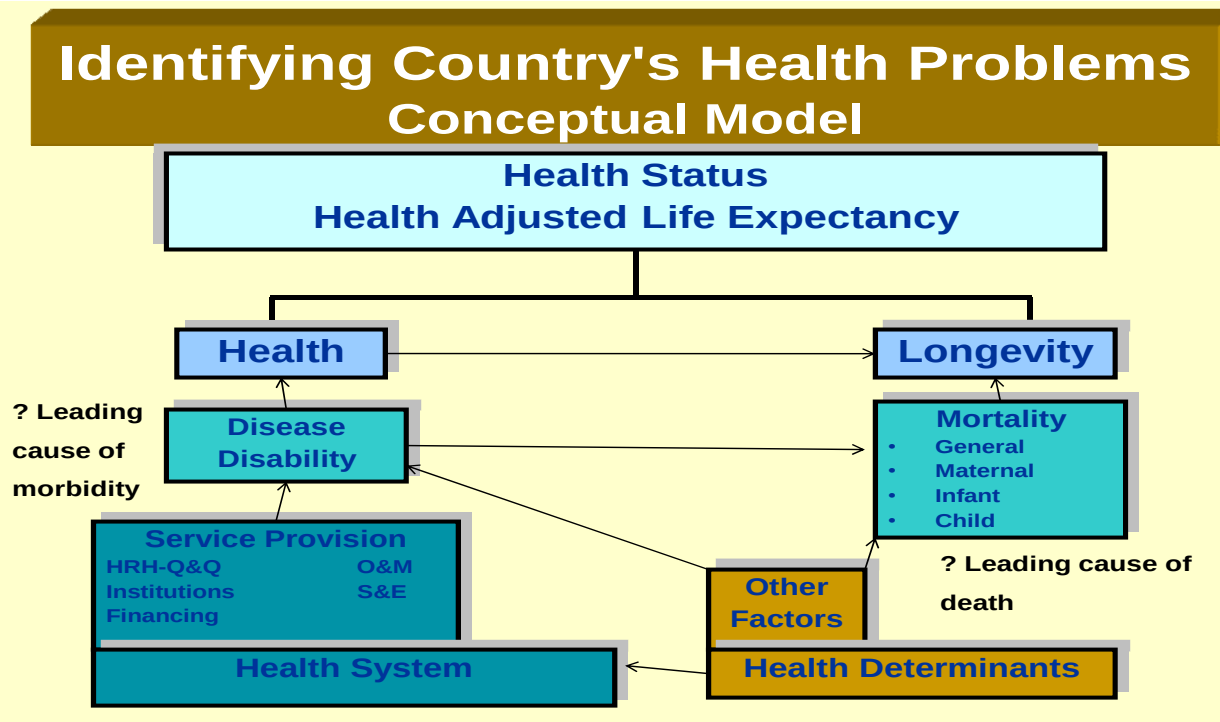
His Excellency Deputy Minister for Health provided policy guidance for formulating the plan at a meeting held on 21 and 22 December 2010. The meeting was attended by Directors General, Deputy Directors- General, Programme Directors and responsible officials. Successive meetings and workshops were held following the formation of the steering and working committees. The followings are the milestones of events that took place along the process of formulating the plan.

Sr.	Event	Date	Output
1.	Working committee meeting	9-11-2010	Agreement reached on policy objectives and detailed process for plan formulation
2.	Plan formulation workshop I	27-11-2010 and 28-11-2010	(a) Country health problems identified (b) Health problems prioritized (c) Vision and objectives developed
3.	Plan formulation workshop II	22-2-2011 and 23-2-2011	(a) Programme areas and programmes identified (b) Agreed on format for writing up (c) Focal for each programme area and programme identified
4.	Plan formulation workshop III	12-7-2011 and 13-7-2011	Draft write ups of individual programme area reviewed and revised

Identification and prioritization of country health problems was based on objective and scientific evidence available from the country Health Management Information System and the WHO World Health Statistics. Following the conceptual framework provided (Figure-1); individual participant identified and scored each problem based on each expertise and opinion. Health system factors and determinants were also taken into consideration. This was followed by building consensus in the plenary. The conceptual framework was

constructed according to key constraints identified in the course of evaluating the previous cycle of National Health Plan (2006-2011).

Figure-1 Conceptual Frame work for Problem Identification



HRH= Human Resources for Health O&M= Organization and Management

Q&Q= Quantity and Quality S&E= Supply and Equipment

Communicable diseases; non-communicable diseases; maternal, neonatal and child health conditions; injury; nutrition and geriatric health were identified as priority country health problems. System factors, health determinant and environmental factors were also included as problems or situations that need to be solved to realize national health objectives. They were health care financing, human resources for health, health information, health policy, private sector, health promotion, natural disasters and environmental health.

The priority health problems and key contributing factors are as shown in the following table:

Sr.	Priority Health Problems	Key Contributing Factors	
		Health System	Health Determinant
1.	Communicable Diseases	Finance	Socio-economic
2.	Non-communicable Diseases	Health Information	Behavoiur
3.	Maternal, Neonatal and Child Health Conditions	Health workforce and service	Social, education and economic
4.	Injury	Service	Social and work environment
5.	Nutrition	Health financing, information and service	Behavoiur and education
6.	Geriatric health	Service, health finance and governance	Social and economic

Accordingly and taking into account the direction and objectives identified and agreed upon, the following were identified as Programme Areas to be addressed in the National Health Plan (2011-2016).

- Controlling Communicable Diseases
- Preventing, Controlling and Care of Non-Communicable Diseases and Conditions
- Improving Health for Mothers, Neonates, Children, Adolescent and Elderly as a Life Cycle Approach
- Improving Hospital Care
- Traditional Medicine
- Human Resources for Health
- Promoting Health Research
- Determinants of Health
- Nutrition Promotion
- Strengthening Health System
- Expanding Health Care Coverage in Rural, Peri-Urban and Border Areas

5 Policy, objectives and strategies

National Health Plan (2011-2016) is to be formulated in relation to the current short term (five year) National Development Plan. It is also developed within the objective frame of the short term third five year period of the Myanmar Health Vision 2030, a 30 year long term health development plan.

5.1 Policy basis

One of the social objectives of the State, "uplifting health, fitness and education standard of the entire nation" and the National Health Policy (1993) formed the policy basis for this plan.

a. Directions

The National Health Plan will be directed towards;

i. Solving priority health problems of the country
ii. Rural health development
iii. Realizing Millennium Development Goals
iv. Strengthening health system
v. Improving determinants of health

b. **Objectives**

With the ultimate aim of ensuring health and longevity for the citizens the following objectives have been adopted for developing programs for the health sector in ensuing five years covering the fiscal year 2011-2012 to 2015-2016.

i. To ensure quality and comprehensive health services are accessible equitably to all citizens and to enable the people to be aware and follow behaviors conducive to health
ii. To prevent and alleviate public health problems through measures encompassing preparedness and control activities
iii. To ensure availability in sufficient quantity of basic and essential medicine, vaccines and traditional medicine, and to enable the citizens to consume safe food and drugs
iv. To plan and train human resources for health as required according to types of health care services, in such a way to ensure balance and harmony between production and utilization

v. To strengthen health information system and to promote in balance and harmoniously, basic research, applied research and health policy and health systems research and in order to provide valid and complete evidence for developing and implementing health policies and plans
vi. To continuously review, assess and provide advice with a view; to see existing health laws are practical, to making them relevant to changing situations and to developing new laws as required
vii. To promote collaboration with local and international partners including health related organizations and private sector in accordance with policy, law and rules existing in the country for raising the health status of the people
viii. To develop a health system that is in conformity with country context and international health agenda

5.2 Strategies

Consequently, to achieve these objectives current National Health Plan (2011-2016) is developed around the following 11 program areas, taken into account prevailing health problems in the country, the need to realize the health related goals articulated in the UN Millennium Declaration, significance of strengthening the health systems and the growing importance of social, economic and environmental determinants of health. For each program area, objective and priority actions to be undertaken have also been identified as follows:

5.2.1 Controlling Communicable Diseases

Objective

To reduce morbidity and mortality from communicable diseases so as to eliminate them from arising as public health problems and to mitigate subsequent social and economic problems

Priority Actions

Controlling diseases of national concern

HIV/AIDS

Tuberculosis

Malaria

Preventing and controlling emerging and re-emerging diseases

Controlling Vector Borne Diseases (Malaria not included)

Controlling Vaccine Preventable Diseases

Controlling Zoonotic Diseases

Sustaining achievement made for the diseases under consolidation

Leprosy

Trachoma

Managing public health emergencies

5.2.2 Preventing, Controlling and Care of Non-Communicable Diseases and Conditions

Objective

To prevent and reduce disease, disability and premature deaths from chronic non-communicable diseases and conditions

Priority Actions

Priority actions are developed with the aim to preventing, controlling and providing care for the following categories of diseases/conditions

(a) Chronic non-communicable diseases/conditions with shared modifiable risk factors-tobacco use, unhealthy diet, physical inactivity, harmful use of alcohol

Cardiovascular disease

Diabetes Mellitus

Cancer

Chronic respiratory disorders

(b) Non-communicable diseases/conditions of public health importance

Accidents and injuries

Disabling conditions

Blindness

Deafness

Community based rehabilitation
Mental Health
Substance abuse
Snake bite

5.2.3 Improving Health of Mothers, Neonates, Children, Adolescent and Elderly as a Life Cycle Approach

Objective

To improve health through reducing disease, disability and death among population including mothers, neonates and children using life cycle approach

Priority Actions

Priority actions are to be taken with the view to providing comprehensive health services as relevant for each age group covering the followings:

Reproductive health
Neonates and Under-five health development
Adolescent health development
School health development
Elderly health care

5.2.4 Improving Hospital Care

Objective

To improve the quality and coverage of diagnostic, curative and rehabilitative service

Priority Actions

Promoting quality of hospital services
Ensuring safety in service provision
Provision of essential medicine
Regulating and promoting private health care services
Promoting quality nursing and midwifery services
Promoting laboratory and blood services
Managing logistic (medicine/equipment) information system

5.2.5 Traditional Medicine Development

Objective

To promote provision of quality health services for the people with traditional medical science

Priority actions

Training and production of qualified traditional medical practitioners
Improving quality and coverage of traditional medical care
Promoting availability of safe and efficacious traditional medicine
Promoting traditional medical research
Development of herbal gardens and sufficiency of raw materials for manufacturing traditional medicine

5.2.6 Human Resources for Health Development

Objective

To raise the health status of the people and to ensure sustained development of comprehensive health services through production of quality human resources for health according to the needs of the country and planning for effective utilization

Priority Actions

Training of human resources for health
Upgrading training institutes, facilities and faculties
Continuing medical education and development of ICT network
Strategic plan for development of human resources for health

5.2.7 Promoting Health Research

Objective

To conduct health researches that will contribute to health sector development and realizing objectives of the Ministry of Health

Priority Actions

Priority actions are developed with the view to conducting research covering the following areas:

Health policy and health system
Communicable diseases
Non-communicable diseases
Environmental health
Traditional medicine
Academic and technology development
Capacity strengthening

5.2.8 Addressing Determinants of Health

Objective

To prevent and control emergence of health problems and diseases consequent to unhealthy life styles and behavior of people and environmental conditions

Priority Actions

Environmental health risk assessment and control
Occupational health and safety
Control of air and water pollution
Community water supply and sanitation
Health city and urban health
Hospital waste management
Tobacco control

Gender

5.2.9 Nutrition Promotion

Objective

To enable every citizen to have nutritional status supporting health and prolonging live

Priority Actions

Nutrition development

Nutrition monitoring

Preventing and controlling micro-nutrient deficiency

Capacity strengthening

Laboratory support

5.2.10 Strengthening Health System

Objective

To support development of a health system that will be in conformity with changing political, economic, social, and environmental situations and technology development and ensure health services provided are effective, efficient and equitable

Priority Actions

Priority actions are developed for improving the following health system building blocks

Financing health

Health information

International health cooperation

Leadership and governance

5.2.11 Expanding Health Care Coverage in Rural, Peri-Urban and Border Areas using Primary Health Care Approach

Objective

To improve health in rural, peri-urban and border areas through primary health care approach

Priority Actions

Priority actions are developed within the context of primary health care with the view to improving access and coverage for the poor and marginalized.

Rural health development

Peri-urban health care

Border area health development

Based on these strategies and priority actions current National Health Plan is structured as follows:

Sr.	Programme Area	Projects
1.	Controlling communicable diseases	1. Epidemiological Surveillance and Response 2. Disaster Management and Public health Emergency 3. Expanded Programme of Immunization 4. Zoonotic Diseases Control 5. National Tuberculosis Control 6. Leprosy Control 7. National AIDS and Sexually Transmitted Diseases Control 8. Vector Borne Diseases Control 9. Trachoma Control and Prevention of Blindness
2.	Preventing, Controlling and Care of Non-Communicable Diseases and Conditions	1. Control of chronic diseases - Cardiovascular diseases - Diabetes mellitus - Cancer - Chronic respiratory diseases 2. Accident and injuries 3. Mental health and substance abuse 4 Snake bite control 5. Community based rehabilitation
3.	Improving Health of Mothers, Neonates, Children, Adolescent and Elderly as a Life Cycle Approach	1. Reproductive health 2. Neonatal and Under-five child health development 3. Adolescent health (school and out of school) 4. Primary dental and oral health 5. Elderly health care
4.	Improving Hospital Care	1. Quality of Health Care Service in Hospitals 2. Patient safety and medical security 3. Myanmar essential drug 4. Nursing care and improving nursing quality 5. Laboratory and blood safety 6. Logistic information 7. Regulation of private health care

Sr.	Programme Area	Projects
5.	Traditional health development	1. Human resources for health development (TM) 2. Promoting quality of traditional medical care 3. Production of quality traditional medicine 4. Promoting traditional medical research and development 5. Herbal garden development
6.	Human resources for health development	1. Training of human resources for health 2. Upgrading training institutes, facilities and faculties 3. Continuing medical education and development of ICT network 4. Strategic plan for development of human resources for health
7.	Promoting Health Research	1. Research on Health Policy & Health System 2.Research on Communicable Diseases 3.Research on Non-communicable Diseases 4.Research on Environmental Health 5.Research on Traditional Medicine 6.Research on Academic & Technology Development 7.Research on Capacity Strengthening 8. Research on Dissemination & Knowledge Management
8.	Addressing Determinants of Health	1. Environmental Health Risk Assessment and Control 2. Occupational Health and Safety 3. Air and Water Pollution Control 4. Water and Sanitation 5. Healthy City and Urban Health 6. Hospital Waste Management 7.Consumer Protection 8. Food Control 9. Pharmaceuticals and Medical Devices Quality and Safety

Sr.	Programme Area	Projects
		10. Consumer Protection (cosmetics) 11.Health Promotion 12. Gender and Women Health 13. Tobacco Control
9.	Nutrition Promotion	1. Protein Energy Malnutrition Control 2. Iodine Deficiency Disorders Elimination 3. Vitamin A Deficiency Elimination 4. Iron Deficiency Anaemia Control 5. Beri Beri Control 6. Over-nutrition and Obesity Control 7. Household Food Security
10.	Strengthening Health System	1. Promoting Leadership and Governance 2. Health Care Financing 3. Health Information Management System 4. International Health 5. Township Health System Development
11.	Rural, Peri-urban and Border Health	1. Rural Health development 2. Border Area Health Development 3. Peri-urban Health 4. Public Health Nursing

6. National Health Plan (2011-2016) – 11 Programme Areas

6.1 Communicable Disease Control Programme

6.1.1 Situation Analysis

Disease control activities had been undertaken since the country regained independence and campaigns had been established to fight against major infectious diseases in collaboration with the World Health Organization and the United Nations Children Fund. Since 1978 integration of health services was carried out and disease control activities were implemented in integrated approach with involvement of basic health staff.

6.1.1.1 Epidemiological Surveillance and Response:

A constant epidemiological surveillance of disease outbreaks and control of communicable diseases is being undertaken nationwide. Activities for controlling diseases of national concern like HIV/AIDS, malaria and tuberculosis are included in this programme while other communicable diseases, emerging communicable diseases and other communicable diseases that have regional importance are also to be tackled through activities encompassing surveillance and control. 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 epidemic prone disease that needs to be reported immediately. Seventeen Diseases and conditions are put under national surveillance. Diarrhoeal diseases such as diarrhoea, 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) surveillance as well as outbreak investigation, rapid response and control activities for all epidemic prone communicable diseases. Related to disease surveillance some of the major challenges are sporadic disease outbreaks are occurring in some areas including highly pathogenic Avian

Influenza Infection, probably causing human infection, outbreak among poultry farms. The skill of basic health staff in early detection, reporting and response activities for control of communicable diseases need further strengthened, including public awareness programmes for communities.

6.1.1.2 Disaster Management and Public Health Emergency:

In December 2004 Myanmar has a bitter experience where a Tsunami developed perishing many human lives and properties in South East Asia. After an earthquake of severe intensity with its Epicentre about (1000) miles Northwest of Jakarta, Indonesia, Tsunami was recorded at (7:32:4) am on 26 December 2004. Nine Earthquake of intensity about (6) on the Richter scale were felt in the Andaman Sea. Some coastal region in Myanmar, Ayeyarwaddy, Tanintharyi, Yangon Division and Rakhine State suffered loss of lives and property owing to the aftershocks in the earthquakes. Various forms of disaster such as fire, cyclones, storms, floods, etc also occur from time to time in Myanmar. The country needs to improve preparedness and response to any disaster that could strike at anytime and in any place of the country.

To undertake disaster management effectively, the Committee on National Disaster Preparedness and Response was formed with the chairmanship of Prime Minister of the Government of the Union of Myanmar, with Ministers from respective Ministries and NGOs as members. Ten sub committees were formed under the National Disaster preparedness & Response committee. State/Division level, district level and township level working committees were also formed and these working committees conducted disaster management tasks in their respective area. Under the Ministry of Health, Emergency Management and Response Team were formed at central and State/ Division Levels. Central Team includes Director General, Deputy Director General and All Directors from Department of Health.

Ministry of Health had drawn up a contingency plan for Disaster Management of Myanmar which covers all type of disaster such as Fire, Flood, Strom and Earthquake. Ministry of Health had already prepared the Mass Casualty Plan (Hospital

Emergency Management Plan) in all major Hospitals and Disaster Preparedness Plan in all Township health departments. Ministry of Health has conducted Disaster Management Training courses for Medical officer and Paramedics. Ministry of Health made coordination with Department of Meteorology and Hydrology, Department of Relief and Resettlement, Department of Irrigation, Myanmar Police Force and Myanmar Red Cross Society for effective lecturing of their experiences and international knowledge about Disaster Management. Department of Relief and Resettlement and Myanmar Red Cross Society also conducted Disaster Management Training Course in all States/Divisions.

As a preparedness measure, the stock dumping centers of relief goods have been established in major towns of the states and divisions by Relief and Resettlement Department. There are 18 stocks piling warehouses all over the country where relief good such as clothing blankets, cooking pots enough for (1000) families to (2500). In Yangon central warehouse stored relief good, enough for (10000) households and materials for supporting relief goods can be speedily dispatched to disaster stricken area from nearest warehouse and central store. Myanmar Red Cross Society also had ware house and Ministry of Health has Medical sub depot in all State/Division for Emergency Management. The general objective is to implement of disaster prevention activities effectively and to accelerate emergency preparedness activities and to strengthen surveillance activities for early warning and effective response in disaster prone area and to strengthen national and local capacities for disaster preparedness and response.

6.1.1.3 Expanded Programme on Immunization:

In respect of Expanded Programme on Immunization programme, it has been implementing the reduction of morbidity and mortality due to vaccine preventable diseases among the children aged 1 to 5 years with the aim of reduction of under- five mortality by the year 2015, to the two-third of 1990, thereby achieving the MDG 4. As one of the unit under Department of Health, Central Expanded Programme on Immunization is taking the responsible for setting policy and multi-year planning for National Immunization Progrmme, management of vaccine and cold chain, distribution of logistics, monitoring the immunization activities of

Regions and States, Surveillance of Vaccine Preventable Diseases and Response to Vaccine Preventable Diseases outbreaks including Supplementary Immunization Activities (SIA). The main partners of the Programme are WHO, UNICEF, Global Alliance for Vaccine (GAVI) and national and international Non-governmental Organizations and Civil Service Organizations like Myanmar Maternal and Child Welfare Association (MMCWA), Myanmar Women Affairs' Federation (MWAF) and Myanmar Medical Association (MMA).

The objective of the Expanded Programme on Immunization is to reduce and eliminate the morbidity and mortality of vaccine preventable diseases. According to Global Immunization Vision and Strategy-GIVS, EPI has set the following specific objectives: to achieve the coverage at least 80% in all townships and 95% nationally; to sustain the country status of elimination and eradication of vaccine preventable diseases from the public health problem; to achieve polio eradication by the year 2013 and measles elimination by the year 2015 to be in line with regional goal; to introduce new appropriate vaccine/ vaccines by the year 2013 thereby reducing the morbidity and mortality among under 5 children. Ministry of Health has been formulated the plan for strengthening routine immunization in country as soon as the immunity gaps have been identified through the evaluation of the programme and surveillance system of vaccine preventable diseases. The following prioritized activities are being determined in the identified areas in specified timeline: advocacy to the new State and Regional governments; increasing EPI workforce by assigning the Public Health Supervisors Grade II as vaccinators; modified immunization policy focusing in quantity of service; strengthening the cold chain management (stock and vaccine); capacity building of mid level managers for EPI (Township Medical Officers); health promotion by awareness raising and demand generation through mass media and IEC with ethnic Languages; more participation of local NGOs and INGOs in each step of immunization activities. As on the accomplishment of filling the gaps of immunization coverage with the increased political commitment and investment, Myanmar will keep its honor for the commitments in 2012 as a year of intensification of routine immunization with the modification of existing country's policy for 2012 to be in line with the regional policy.

6.1.1.4 Zoonotic Diseases Control:

The project will primarily tackle Plague and Rabies but any re-emerging, resurging and emerging zoonotic diseases will be put under surveillance, and containment of them will be executed whenever necessary. Anthrax is usually seen in the country as cutaneous form commonly contracted by handling of cattle, goats etc. But in modern era the threat of bioterrorism have to be anticipated. The National Task Force for Control and Management of Anthrax has already formed for anthrax of bioterroristic in nature. In case of such attack of anthrax, the project will co-operate with the Central Epidemiology Unit (CEU) in control of the disease in line with the directives of the National Task Force. Avian influenza is one currently worldwide important zoonotic disease. Control activities in Myanmar are being in progress with the formulation of National Strategic Plan on Prevention and Control of Avian and Influenza Pandemic Preparedness and Response.

Since 1995 there has been no human plague case. The enzootic condition is naturally noticed through vigilant surveillance and put under prompt response. The data source is Diseases Under National Surveillance of Health Management and Information System of Department of Health Planning. There is still under reporting of rabies and it is expected that the magnitude of problem is greater than the present figures. The trend is seen as gradually increasing in nature. According to hospital based surveillance of leptospirosis in medical ward of Insein General Hospital (2005), clinical leptospirosis was seen as 1.4% of total admissions (i.e. 31 out of 2243 admissions). Leptospirosis along with anthrax and dog bite are also put up in HMIS system starting this year for national surveillance. The objective of the project is to strengthen surveillance of plague, rabies, anthrax and leptospirosis and to raise awareness of new emerging or remerging zoonotic diseases.

6.1.1.5 National AIDS and Sexually Transmitted Disease:

The majority of HIV infections in Myanmar have been in men, with the male to female ratio declining from 8 to 1 in 1993 to 1.9 to 1 in 2009. By 2015, it is projected that the

male to female ratio will be 1.6:1. These women are largely the sexual partners of current and former FSW clients and MSM. It is estimated that the number of pregnant women living with HIV was about 4,300 in 2009.

HIV/AIDS prevention and care activities had been implemented since 1989 and National Health Committee has laid down clear guidelines to fight AIDS and prevention and control activities are being carried out as a national concern. The National AIDS Committee, founded since 1989 is an active multisectoral body for formation of National Strategic Plan to prevent and control HIV/AIDS in Myanmar. National AIDS Programme comprising of headquarter, 45 AIDS/STD teams at District level is implementing HIV/AIDS prevention and care activities all over the country in coordination with related Departments, UN Agencies, NGOs both national and international as well as Community based organizations.

Successive National Strategic Plan on HIV/AIDS is being in progress through coordinated efforts of NAP with direct involvement of all sectors involved in the national response to the HIV epidemic which includes, Health related Ministries, UN agencies, National and International NGOs, etc. National Strategic Plan, NSP has a vision of achieving the HIV related MDG targets by 2015. It aims to cut the new infections by half of the estimated level of 2010. NSP II aims to reduce HIV transmission and HIV-related morbidity, mortality, disability and social economic impact. There are three strategic priorities: prevention of the transmission of HIV through unsafe sexual contacts and use of contaminated injecting equipment; comprehensive continuum of care for people living with HIV; and mitigation of the impact of HIV on people living with HIV and their families. NSP II recognizes the link between prevention, treatment and care, particularly for PMCT, VCCT, and for the sexual partners of people living with HIV. There are three cross-cutting interventions: health systems strengthening – including the private sector, structural interventions and community systems strengthening; a favourable environment for reducing stigma and discrimination; and strategic information, M&E and research.

In Myanmar, ART is provided by the National AIDS Programme (NAP), international and local NGOs. As of the end of 2009, approximately 21,000 adults and children are on

treatment. Estimates of the number of people needing ART in a given year are based on the NAP ART guideline recommendations from 2006. According to the national ART guidelines, patients with CD4 counts of less than 200 should receive ART and those with CD4 200-350 can be considered for treatment. Using a threshold of CD4 <200, approximately 74,000 adults needed ART in 2009. However, as more people needing treatment start to receive it, the need for ART will increase as more people will survive longer. When the national guidelines are revised to reflect the recommended change to start treatment at CD4 <350, then adult ART needs will increase accordingly.

6.1.1.6 National Tuberculosis Control:

Myanmar is one of the 22 Tuberculosis (TB) high burden countries in the world. Tuberculosis remains one of the major public health problems and a priority disease in Myanmar. National Tuberculosis Programme (NTP) started since 1966. Currently, there are 13 State and Divisional TB centers operating control activities covering 17 States/Divisions. The district/township level vertical tuberculosis teams are operating in 45 districts and 56 townships. With the recommendation of WHO, DOTS strategy has been implemented since 1997 and all 325 townships are covered by DOTS strategy in 2003. TB control activities have been launched in Myanmar since 40 years back. World Health Organization (WHO) estimated ARTI for Myanmar as 1.5%. It is estimated there are about 100,000 new TB patients annually and about half of them are infectious cases. TB mortality rate gradually declines from 34 per 100,000 (WHO report, 2000) to 21 per 100,000 population (WHO report, 2006). However, TB situation could be worsening by HIV co-infection and development of Multi Drug Resistant TB (MDR-TB). Reported HIV prevalence among TB patients was 4.5% (1995-1997) and 70% of AIDS suffer from TB. MDR-TB among new smear positive TB patients and previously treated TB patients were 4% and 15.5% respectively (2003-2004).

TB control activities are considered as national concern and the political commitment is in place through supporting human resources and financial in puts. Cross border collaboration of TB control activities with neighbouring countries such as Thailand, India and Bangladesh are essential to reduce TB morbidity and mortality and to prevent the development of drug resistant TB. From 2009 to 2010, the NTP conducted a

nationwide TB prevalence survey, which showed: the majority of TB sufferers are young males; the prevalence is almost two times higher in urban than in rural areas; TB rates are significantly higher in states than in regions, which suggests that there are issues with access to health care; the majority of TB cases found in the survey remained undetected; the majority of TB cases did not present with classic TB symptoms; pharmacies/drug-sellers and traditional healers are the first line of contact for most TB cases; and the TB control program in Myanmar has been successful in diagnosing and treating symptomatic smear-positive TB patients under DOTS, but the impact on the TB burden is not sufficient with current case-finding and diagnostic methods. The National Strategic Plan stressed that figures shown for TB burden were underestimated and that once the results of the 2009-2010 nationwide TB prevalence survey were finalized, these figures would need to be adjusted.

The NTP is facing critical gaps in ensuring diagnosis, treatment and care for people suffering from MDR-TB and people co-infected with TB and HIV/AIDS. The National Strategic Plan includes the treatment of 4000 MDR-TB patients from 2011 to 2015 and does not mention geographical scale-up beyond 10 MDR-TB pilot project townships. With the annually estimated 9000 MDR-TB cases emerging or 5200 MDR-TB cases estimated in 2010 among notified pulmonary TB cases, this scale-up was felt insufficient by the NTP and partners. Global commitment to accelerated MDR-TB management was reinforced by the time the National Strategic Plan was developed, first at the ministerial meeting of high multi/extensively drug-resistant TB burden countries in Beijing, China, 2009, and then with the subsequent resolution passed by the World Health Assembly in May 2009 (WHA 62.15). Based on this renewed global commitment, the NTP decided to be more ambitious in the scale-up of MDR-TB management. Likewise for TB/HIV, the National Strategic Plan outlines that only 26 out of 325 townships would deliver complete TB/HIV activities by the end of 2015 (by April 2012, 17 townships and one public hospital were implementing activities), while an additional 45 would ensure HIV voluntary counselling and testing for TB patients. The slow pace of TB/HIV scale-up is largely due to the historical and present lack of antiretroviral therapy (ART) and HIV test kits. Based on the 2009-2010 nationwide TB prevalence survey and the increased CRS commitment to care for people suffering from MDR-TB and TB/HIV co-infection, the 2 NTP and partners (including the National AIDS Program for the TB/HIV plan) have developed three strategic plans supplementing the

2011-2015 National Strategic Plan: Strategic plan on active case-finding, 2012-2015; Expansion plan for the programmatic management of drug-resistant tuberculosis 2011-2015; and Nationwide scale-up plan for TB/HIV collaborative activities, 2012-2015.

The development of these strategic plans including budgets as parts of the National Strategic Plan was recommended by the review of the NTP that took place in Myanmar, 7-15 November 2011. All plans have been developed in line with WHO recommendations and with input from partner agencies through the TB TSG. With the plan to intensify TB case-finding it is expected that an additional 33 000 TB cases will be diagnosed and put on treatment from 2012 to 2015. In 2015, the case notification rate (all forms of TB) could therefore be higher than 300 TB cases per 100 000, representing a case detection rate of 80%. Furthermore, the MDR-TB and TB/HIV plans follow the targets set in the Global Plan to Stop TB, 2011-2015.

6.1.1.7 Leprosy Control:

For more than 2000 years, leprosy has been regarded as a slow moving, untreatable and repulsive disease. Myanmar was regarded as a country where leprosy prevalence was very high. The regimen of multi-drug therapy (MDT) recommended by WHO in 1982 for treatment of leprosy has been shown to be highly effective and safe with a short duration of treatment. From 1991, when the MDT service was fully integrated into the Basic Health Service, the program gathered momentum with participation from all sectors at all levels, the local NGOs, with the full support of WHO, generous inputs from members of International Federation of Anti-leprosy Associations, Novartis Foundation and Japan International Co-operation Agency (JICA). The Elimination target of less than one per 10,000 populations was achieved at the national level at the end of January 2003. The achievement was declared during the Third Meeting of Global Alliance for Elimination of Leprosy held in Yangon on 6 to 8 February 2003.

The Global Strategy for further reducing the leprosy burden and sustaining leprosy control activities (2006 – 2010) becomes a new strategy and designed to address the remaining challenges and further reduce the disease burden due to leprosy. In line

with the above strategy, it needs to ensure that the physical and social burden of the disease continues to decline throughout the country. Maintaining quality of leprosy services is another scenario that requires close cooperation with all partners. Prevention and management of deformities and disabilities and rehabilitation in persons affected by leprosy have been items of top most priority in the national leprosy control program.

According to disability survey in 11 townships of four previously hyperendemic divisions, 30 – 35% of persons affected by leprosy (on MDT patients and cured persons) were disabled due to leprosy. It was estimated to be 80,000 persons affected by leprosy have had disability grade 2 due to leprosy throughout the country. Leprosy is unique in its psycho-social aspects faced by persons affected by leprosy and their family members social and economic problems in the daily life may not be uncountable and immeasurable. The programme was fully integrated into basic health services since 1991 and MDT services covered the whole country in 1996 and it is essential to sustain leprosy control activities in an integrated approach. The total number of new cases detected during 2005 was 3499. After conducting special case finding activities for migratory groups, urban and peri-urban areas and pocket areas, more new cases (previously unreported cases) were explored and brought under MDT. Incidence cases were also still coming out for treatment.

New Case Detection Rate (NCDR) by special case finding in pocket areas was 20 per 100,000 populations which are about two times more than the routine NCDR. So timely detection of back-log cases and treatment with MDT are very important to sustain the elimination status. Routine leprosy control activities are: case finding, diagnosis and classification, registration and reporting, proper case holding, management of complications, prevention of disability and self-care, referral and monitoring and supervision at all levels. The general objective of the project is to reduce further the burden of leprosy in Myanmar and to provide access to quality leprosy control services for all affected communities focusing on prevention of disability and rehabilitation in the context of community based approach.

6.1.1.8 Dengue Haemorrhagic Fever (DHF)

DHF was identified in Union of Myanmar since 1965 at Yangon. First epidemic of DHF was in 1970 at Yangon and many cases were detected. After 5 years, other epidemics were detected not only in Yangon, but also in Mandalay (second largest city). Cyclical epidemics become common in Myanmar at 3-5 years interval since then. Due to the circulating serology types of dengue viruses, accumulation of susceptible and prevalence of main vector Aedes aegypti mainly contributed epidemics among the community members. In 2006, there were 11,049 cases with 130 deaths were identified and the mortality rate was 1.18 percent. In 2010 the incidence was 16,345 with the total deaths of 117 cases (0.72 percent). Recently, it is also noted that the morbidity pattern of rural areas are getting similar to that of urban areas. This trend continued in later years since communication to rural areas are better than before. The general objective of the project is to reduce the morbidity and mortality caused by DHF in the country and the specific objective is to reduce 20 percent in morbidity if there is no epidemic and if so, the case fatality will be maintained at below 1 percent.

6.1.1.9 Lymphatic filariasis:

It is one of the public health problems in Myanmar mostly prevalent in central part and coastal regions. Highest Mf rate are seen in Magway Division, Southern part of Sagaing Division, Mandalay Division, and Rakhine State(ie: Mf rate >10%). Lymphatic Filariasis control programme has been started since 1970's by Health Department, conducting case finding by Night mass Blood Survey and treatment of Mf positive patients. Vector control activities were conducted where ever feasible in collaboration with municipal department. With the development of new tools for diagnosis, new treatment regimens for interruption of transmission, rapid epidemiological assessment tools for surveillance and monitoring, Myanmar is trying to launch WHO's Collaborative Global Programme to eliminate LF in 2020. Ministry of Heath of Myanmar had prepared and submitted a plan for ELF to WHO (Programme Review Group) to support a National Programme to Eliminate Lymphatic Filariasis in September 2000, pilot project of ELF by Mass Drug Administration was started in November 2001. Out of

69 districts in the country, filariasis is enrooted in 45 districts. As MDA has been implemented in 22 districts since 2008, there districts has been identified as filarial free districts. The general objective of the project is to eliminate LF from Myanmar health problems by the end of year 2020 and the specific objective is to reduce Mf antigenaemia rate less than 1 per 1000 population by the end of year 2020.

6.1.1.9 Malaria

Malaria has been prioritized as the priority disease and also been a national concern ever since the People Health Plan started in 1978. Like in other countries of South East Asia Region, malaria is one of the major public health problem in Myanmar due to climatic change, migration of non-immune populations into malaria endemic areas in connection with various developmental activities, gem mining, logging, agricultural, plantations and constructions etc; existence and geographical spread of multi-drug resistance P. falciparum malaria, prevalence of faked and substandard antimalarial drugs, bionomic changes of anopheles mosquitoes and limited resources.

In Myanmar, 30% of the total population lived in high-risk area, 24 % in moderate risk area, 16% in low risk area and 30% in malaria risk free area. Total number of reported malaria cases including both confirmed and clinically suspected cases in 2005 is 500,000. Case fatality rate is 3% and 10 % of total out patients and 15% of inpatients are malaria cases. Malaria morbidity rate per 1000 population is 9.32 and malaria mortality rate per 100,000 populations is 3.08 in 2005. Drug resistant problem is mostly prevalent in border areas especially in Myanmar-Thailand border and gold and gem mining areas. Malaria epidemics frequently occurred due to population migration and climatic changes. Emerging of resistance of Plasmodium falciparum to Artemisinin in Mon State, Thanintharyi and Bago Regions is seriously threatening the progress in malaria control. The Myanmar Artemisinin Resistance Containment (MARC) framework was developed through extensive consultation process during mid-2010 – early 2011, which is in line with WHO Global Plan of Artemisinin Resistance Containment (GPARC). MARC framework was endorsed in April 2011 and the National Malaria Control Programme (NMCP) together with implementing partners initiated immediate containment actions in July 2011.

Aims and objectives of the National Malaria Control Programme are reduction of malaria morbidity and mortality by 50% of the level in 2000 by 2010 and to achieve MDG by 2015. The major approaches are: increasing accessibility to quality diagnosis and appropriate treatment according to national treatment guideline; and scaling up the LLIN (Long Lasting Insecticidal Nets) and ITN (Insecticide Treated Net) programme throughout the country. These major approaches are supported by Information, Education and Communication programme and strengthening of health system through capacity building and programme management. The National Malaria Control Strategies include: provide information, education and communication up to the grass root level; prevention and control of malaria by promoting personal protective measures and/or by introducing environmental measures as principle methods and application of 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; promote capacity building and programme management for malaria control programme; strengthen the partnership by means of intrasectoral and intersectoral cooperation and collaboration with public sector, private sector, local and international non-governmental organizations, UN Agencies and neighbouring countries; intensify community participation, involvement and empowerment; and improve basic and applied field research.

6.1.1.10 Trachoma

In Myanmar, trachoma was main cause of blindness in 1960s. Trachoma control project was launched in 1964. With the concerted effort of project and support of Government, WHO, UNICEF and NGOs, active trachoma rate was reduced from 43% (1964) to under 1% (2000). As trachoma blindness was greatly reduced, cataract becomes main cause of blindness in the country. So the project was expanded as Trachoma Control and Prevention of Blindness and dealing with other major causes of blindness as cataract, glaucoma, corneal diseases and trauma. WHO has laid down the strategy “Vision 2020, The Right to Sight: Elimination of avoidable blindness” and Myanmar Prevention of Blindness Project is trying the best to fight against avoidable blindness. Prevention of

blindness project has 16 secondary eye centres in Mandalay, Magway, Sagaing (Lower part) and Bago (east) divisions, headed by ophthalmologists with field staff and the 16 project clusters in 4 divisions are implementing the set activities in 82 townships covering 23.5 million population. According to 1998 Ocular Morbidity survey, blindness rate in Myanmar is 0.6% (600/100,000 population). The general objective of the project is to reduce blindness rate to less than 0.5 % and the specific objectives include: to reduce cataract prevalence rate to less than 0.5%; to reduce glaucoma prevalence rate to less than 0.08%; to reduce trauma prevalence rate to less than 0.25%; and to reduce active trachoma (under 10 year age group) to less than 5 %.

6.1.2 Objectives

6.1.2.1 The General Objective is *t*o minimize prevalence and entrenchment of communicable diseases, and mortality and social and economic sufferings consequent to these and to provide rehabilitation.

6.1.2.2 The Specific Objectives are:

- To control communicable diseases to the utmost extent feasible by undertaking prevention, control and curative activities and providing health education, reaching the rural population;
- To bring down morbidity and mortality from each communicable disease with the intention of removing from public health problem to the extent possible;
- To carry out constant surveillance on and prompt response for occurrence of communicable diseases that have potential to pose public health problems;
- To mitigate public health problems consequent to epidemics and disasters through preparedness and effective response.

6.1.3 Strategies

- Constant surveillance of disease outbreak, constant surveillance through looking for manifestations of diseases and undertaking necessary laboratory investigations; Immunization against vaccine preventable diseases;
- Preventing diseases through personal and environmental hygiene and healthy life style; Passive and active detection of cases;
- Effective treatment by providing institutional care and field services;
- Controlling vectors and animal carrying diseases by community participation, chemical and biological means;
- Providing mental, physical, social and vocational rehabilitation for patients;
- Disseminating health education using various means including mass media, lessons in schools and counselling to the public;
- Providing trainings both in country and abroad to strengthen capacities in providing treatment, disease surveillance, epidemic response and health system development research;
- Conducting health system research, undertaking research in collaboration with related departments and presentation, publication and utilization of research findings;
- Monitoring, supervision and evaluation of activities;
- Undertaking prevention, control and rehabilitation activities with partners down to the grass root levels; and
- Facilitating effective disease control activities by enabling the public to comply with communicable disease law and international health regulations.

6.1.4 Priority Actions

- The major three diseases - HIV/AIDS, TB and malaria will be treated as health problems of national concern and a comprehensive preventive and control measures will be undertaken.
- Efforts will be contributed for Polio elimination.
- Elimination of measles and further reduction as public health burden.
- Control and elimination of maternal and neonatal tetanus.
- Effective surveillance on newly emerging communicable diseases.

- Implement the IHR 2005.
- Prevention and control of vector borne diseases.
- Sustain the reduction of disease incidence in Leprosy and Trachoma and prevent disability from those diseases.
- Further increase in momentum of the disease surveillance work.
- Engage in health research on disease prevention.

6.1.5 Partnership

- Cooperation among the Departments and Units within the Ministry of Health and other related Ministries to achieve the targets of the communicable disease control programme;
- Cooperation with private sectors, NGOs and Civic societies;
- Cooperation with UN Agencies, multilateral and bilateral partners and INGOs
- Cooperate closely with ASEAN countries and members of SMGs

6.1.6 Monitoring and Evaluation

The performance and its achievement will be monitored and assessed as follows:

- Percentage of HIV infection among 15-49 years age group.
- Numbers of infected cases treated with ART
- Annual Morbidity rate of TB cases per 100,000 population
- Annual Mortality rate of TB cases per 100,000 population
- Annual Incidence rate of TB per 100,000 population
- Percentage of MDR-TB among new smear positive cases
- Percentage of new smear positive cases detected
- TB Case detection rate
- TB Treatment success rate
- Annual morbidity rate of malaria
- Annual mortality rate of malaria
- No. of LLIN distributed
- No. of bed nets impregnated with insecticides
- No. of patients tested for malaria using rapid diagnostic test kit
- No. of patient tested with blood slides

- Percentage of houses which has at least one insecticide impregnated bed net or LLIN at the rural area
- Percentage of identified malaria positive cases access to treatment within 24 hours
- Percentage of qualified malaria microscopy examiners among the staff evaluated
- Percentage of health centers where there is lack of anti-malaria drugs more than one week in the surveillance area
- No. of townships and no. of MDA conducted
- Mf rate before the third MDA
- Mf rate before the fifth MDA
- AFP rates per 100,000 children under 15 years of age
- No of measles or measles like cases identified in 100,000 population
- No. of suspected measles cases in 100,000 population
- Mortality rate of diphtheria per 100,000 children under 5 years of age
- Mortality rate of whooping cough per 10,000 children under 5 years of age
- Morbidity and mortality rates of rabies per 100,000 population
- Morbidity and mortality rate of Rabies per 100,000 population
- Morbidity and mortality rats of DHF
- Leprosy - new case detection rate in per 100,000 population
- Disability grade 2 proportion among new cases of leprosy
- Cataract surgical rate CSR per 100,000 population

6.1.7 **Projects**

The following 9 projects are included in the Disease Control Programme area:

- Epidemiological Surveillance and Response
- Disaster Management and Public Health Emergency Project
- Expanded Programme on Immunization
- Zoonotic Disease Control Project
- National Tuberculosis Project
- Leprosy Control Project
- National AIDS and Sexually Transmitted Disease Control Project
- Vector Borne Disease Control Project
- Trachoma Control and Prevention of Blindness

Targets

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
Epidemiological Surveillance and Response								
1.	Establishment of Rapid Response Teams at Township level	149	30	30	30	30	30	**150**
2.	Detection of non-polio Acute Flaccid Paralysis Surveillance at least (2) non-polio AFP for every 100,000 under 15 children	418	424	428	432	436	440	**2578**
3.	Detection of Neonatal Tetanus as much as possible (should not be ≥1 per 1000 live births)	<1540	<1551	<1567	<1582	<1598	<1614	**<9452**
4.	Detection of non-Measles fever with rash cases at least 2 per 100,000 populations of all ages.	1215	1227	1239	1252	1264	1277	**7474**
5.	Training of epidemiology training for Basic Health Staff especially for THA, THN, Health Assistants (40 participants /batch x 5 days)	163	80	80	80	80	80	**563**
6	IHR Core Capacity Assessment		1	1	1	1		**4**
7	Training for IHR and POE to Health Staff (30 participantsx3 days)			30	30	30	30	**120**
8	Fellowship for Epidemiology and Surveillance to aboard				2	2	2	**6**
9	Health Informatics application in CEU (Persons Trained)				3	3	3	**9**
10	Research projects on cooperation with partners			2	2	2	2	**8**
Zoonoses Prevention and Control Projects								
1.	Training on Zoonoses to health staff 40 participants/training		40	40	40	40	40	**200**

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
2.	Fellowship on zoonoses aboard				1	1	1	**3**
Disaster Management and Public Health Emergency Project								
1	Training for TMO on Disaster Management (30 participants/ Training) x 2 times			60	60	60	60	**240**
2	Training on Health emergency preparedness plan for Health Staff (30 Participants/Training)x 2 times			60	60	60	60	**240**
3	Disaster Risk Assessment and Mapping with GIS				2	2	6	3
4	Strategic Health Operation Centre upgrading by collaboration with National Emergency Operation Centre				1	1	1	**3**
5	Public Health Emergency Deployment Course in cooperation with WHO/CDC				2	2	2	**6**
6	Vehicles for public health emergency response				2	2	2	**6**

6.1.8 **Targets**

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
Epidemiological Surveillance and Response								
1.	Establishment of Rapid Response Teams at Township level	149	30	30	30	30	30	**150**
2.	Detection of non-polio Acute Flaccid Paralysis Surveillance at least (2) non-polio AFP for every 100,000 under 15 children	418	424	428	432	436	440	**2578**
3.	Detection of Neonatal Tetanus as much as possible (should not be ≥1 per 1000 live births)	<1540	<1551	<1567	<1582	<1598	<1614	**<9452**
4.	Detection of non-Measles fever with rash cases at least 2 per 100,000 populations of all ages.	1215	1227	1239	1252	1264	1277	**7474**
5.	Training of epidemiology training for Basic Health Staff especially for THA, THN, Health Assistants (40 participants /batch x 5 days)	163	80	80	80	80	80	**563**
National AIDS and Sexually Transmitted Diseases Control Project								
Strategic Priority I: Prevention of the transmission of HIV through sexual contacts, injecting drug use and contaminated blood.								
	Female sex workers and their sexual partners; clients of female sex workers and their sexual partners							
1.	% female sex workers who are HIV infected	11.2%	10%	9.5%	9%	8%	7%	
2.	% clients of female sex workers who are HIV infected	3.88%	3.3%	3.0%	2.7%	2.4%	2.0%	
3.	% female sex workers who used condom at last sex	95%		95%				
4.	% female sex workers reached with HIV prevention programmes	76%		BSS				
5.	% female sex workers who received an HIV test in the last 12 months and who know the result	71%		BSS				

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
6.	Number of female sex workers reached with HIV prevention programmes	45489	55000	60000	65000	70000	75000	
7.	Number of clients of female sex workers reached with HIV prevention programmes		88122	110153	132183	154214	176244	
8.	Number of regular sexual partners of sex workers and clients reached with HIV prevention programmes		10000	15000	20000	25000	30000	
Men who have sex with men and their sexual partners								
9.	% men who have sex with men who are HIV infected	22.3%	20.5%	19.5%	18.5%	17.0%	16.0%	
10.	% men who have sex with men who used condom at last sex	81%			85%			
11.	% men who have sex with men reached with HIV prevention programmes	69%			BSS			
12.	% men who have sex with men who received an HIV test in the last 12 months and who know the result	48%			BSS			
13.	Number of men who have sex with men reached with HIV prevention programmes	59985	65000	70000	75000	80000	85000	
14.	Number of female sexual partners of men who have sex with men reached with HIV prevention programmes		2250	3516	4219	4922	4500	
Injecting drug users, drug users and their sexual partners								
15.	% of injecting drug users who are HIV infected	34.6%	31.20 %	28.70 %	26.10 %	23.40 %	21.00 %	
16.	% of injecting drug users who used sterile needles and syringes at last injection	81%		84%				
17.	% injecting drug users who used condom at last sex	77%		80%				
18.	% injecting drug users reached with HIV prevention programmes	52%		BSS				

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
19.	% injecting drug users who received an HIV test in the last 12 months and who know the result	27%		BSS				
20.	Number of injecting drug users/ drug users reached with HIV prevention programmes		10000	12500	15000	17500	20000	
21.	Number of injecting drug users/drug users reached with HIV prevention programmes	21214	25000	28000	31000	35000	38000	
22.	Number of sterile injecting equipment distributed to injecting drug users in the last 12 months	5,335,156	8,000,000	12,000,000	15,000,000	20,000,000	20,000,000	
23.	Number of drug users receiving methadone maintenance therapy	771	2000	3000	4000	5000	8000	
24.	Number of regular sexual partners of IDUs reached with HIV prevention programmes		5138	8438	10625	12813	12330	
	Prison or rehabilitation facility populations							
25.	Number of prisoners reached with HIV prevention programmes	13472	21805	28658	36134	42987	49840	
	Mobile and migrant populations and communities affected by population movement							
26.	Number of mobile and migrant population reached with HIV prevention programmes	105,941	150,000	237,500	325,000	412,500	500,000	
	Uniformed services personnel (military and police)							
27.	Number of uniformed services personnel reached with HIV prevention programmes	15,601	30,000	35,000	40,000	45,000	50,000	
	Young people							
28.	% young people aged 15-24 who are HIV infected	0.91%	0.85%	0.79%	0.72%	0.66%	0.60%	
29.	% young people who used condom at last sex			BSS				
30.	Number of Out-of-school youth	184,191	200,000	212,500	225,000	237,500	250,000	

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	reached with HIV prevention programmes							
	Workplace							
31.	Number of people in work place reached with HIV prevention programmes	49,192	100,000	125,000	150,000	175,000	200,000	
	Cross cutting interventions							
32.	Number of people who received STI treatment in the last 12 months		118,745	133,584	144,948	153,133	157,567	
	FSW		55,000	60,000	65,000	70,000	75,000	
	Clients of FSW		35,249	38,553	39,655	38,553	35,249	
	MSM		13,000	14,000	15,000	16,000	17,000	
	IDU		2,000	2,500	3,000	3,500	4,000	
	Regular partners of MARPs		6,955	9,434	10,453	10,684	9,366	
33.	Number of people who received an HIV test in the last 12 months and who know the result VCT/Number of HIV test		66,974	86,015	109,218	137,421	158,726	
	FSW	10,896	15,000	20,000	30,000	45,000	55,000	
	Clients of FSW		22,031	27,538	33,046	38,553	44,061	
	MSM	4,701	16,250	17,500	18,750	20,000	21,250	
	IDU	3,854	5,000	6,250	7,500	8,750	10,000	
	Regular partners of MARPs		8,694	13,477	17,422	21,367	23,415	
	Mobile and migrant population							
34.	Number of condoms distributed for free (in Millions)	40 m	45 m	50 m	55 m	60 m	65 m	
35.	Number of condoms sold through social marketing							
Strategic Priority II: Provision of a comprehensive Continuum of Care for people living with HIV								
	VCCT, ART, community-based care, hospitals for adults and children							
36.	% adults and children with HIV known to be on treatment 12 months after initiation of antiretroviral therapy	80.0%	81%	82%	83%	84%	85%	
37.	% adults and children with HIV known to be on treatment 24 months after initiation of antiretroviral therapy		81%	82%	83%	84%	85%	

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
38.	Number of adults with advanced HIV infection receiving ART	19,603	30,200	40,050	50,100	60,050	70,000	
39.	Number of children in need provided with ART	1,535	1,800	2,100	2,400	2,700	3,200	
40.	Number of people living with HIV receiving Cotrimoxazole prophylaxis who are not on ART		10,000	12,500	15,000	17,500	20,000	
41.	Number of TB patients who are tested positive for HIV and have started ART during the reporting period		2,127	2,725	3,323	3,921	4,519	
	PMCT and Reproductive Health							
42.	% Infants born to HIV infected mothers who are infected	22	15	13	13	12	11	
43.	% Pregnant women are HIV infected	0.96%	0.90%	0.85%	0.80%	0.75%	0.67%	
44.	Number of pregnant women attending ante-natal care services at PMCT sites who received HIV pre-test counseling	356,641	400,000	425,000	450,000	475,000	500,000	
45.	Number of pregnant women attending ante-natal care services who received HIV testing and test result with post test counseling	170,862	240,000	276,250	315,000	356,250	400,000	
46.	Number of HIV-positive pregnant women who received antiretroviral to reduce the risk of mother-to-child-transmission	2,136	2,520	2,601	2,700	2,779	2,680	
Strategic Priority III: Mitigation of the impact of HIV on people living with HIV and their families								
	Psychological, economic and nutritional support for People Living with HIV and their Families							
47.	Number of people receiving community home based care	31,361	48,430	51,335	52,332	50,927	48,500	
48.	Number of people living with HIV associated with self help groups	15,577						
	Orphans and Vulnerable Children Infected and Affected by HIV							
49.	Number of Orphans and vulnerable children affected by HIV receiving	5,332	8,000	9,750	11,500	13,250	15,000	

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	package of support							
	Cross cutting interventions							
	Health (Including Private Health Sector), Non-Health and Community Systems Strengthening							
	Favorable Legal and Policy Context – Compassion and Understanding							
	Strategic Information, Monitoring And Evaluation, and Research							
Vector Borne Diseases Control Project								
1.	Proportion of health facilities covered by malaria IEC materials	60%	70	75	80	85	90	**390**
2.	Launching World Malaria Day	1	1	1	1	1	1	**5**
3.	No. of LLIN required	0.2	6. 3	6.4	6.5	6.7	6.8	**32.7**
4.	Number of nets to be treated by insecticide tablets	0.5	2.5	2.6	2.7	2.8	2.8	**13.4**
5.	No. of blood smears taken & Exam:	0.38	0.45	0.6	0.5	0.4	0.4	**2.35**
6.	No. of RDT testes & read	0.59	0.6	0.6	0.6	0.6	0.6	**3.0**
7.	Monitoring of TES	1	1	1	1	1	1	**5**
8.	Training on Malaria Microscopy	101	50	125	75	75	75	**400**
9.	Training of BHS on malaria Prev:&Cont:	405	300	300	600	600	500	**2300**
10.	Training of volunteers on prevention of malaria	358	2500	2500	2500	2500	2500	**12500**
11.	Training of volunteers on prevention and cases management of malaria	358	1375	1375	1375	1375	1375	**6875**
12.	Training of MO & Nurses on Malaria case management	150	4500	4500	4500	4500	4500	**22500**
13.	Conduct Annual evaluation meeting at central, S/R level	11	14	14	14	14	14	**70**
Elimination of Lymphatic Filariasis Project								
1.	Mass Drug Administration (No. of districts- Existing + Expansion)	22	22	42	42	42	42	**42**
2.	Advocacy on MDA S/ D Level Township Level	 4 90	 4 228	 12 228	 12 228	 12 228	 12 228	 **52** **1002**
3.	Preparing IEC materials and conduct IEC activities	17.5	17.5	43.9	43.9	43.9	43.9	**43.9**
4.	Training of BHS and volunteers							

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	S/D level	4	4	12	12	12	12	**52**
	Township level	90	90	228	228	228	228	**1002**
5.	Procurement of Drugs for MDA							
	DEC (Diethylcarbamazine citrate)	43.8	43.8	109.7	109.7	109.7	109.7	**482.6**
	Albendazole 400 mg	17.5	24	27	30	32	39	**152**
6.	No. of townships i.e, Drugs to be distributed to townships	90	90	228	228	228	228	**204**
7.	Training on Morbidity control							
	S/D Hospital	4	4	12	12	12	12	**52**
	District/ Township Hosp:	19	19	42	42	42	42	**187**
	Health workers, GP Doctors							
	National Tuberculosis Project							
1.	Number of sputum collection centers	29	120	160	50	60	60	**450**
2.	Number of microscopy laboratories monitored under the external quality control system	415	106	86	80	80	80	**432**
3.	Number of new TB patients (all forms) registered for treatment	134023	152691	156091	159598	163217	166951	**798,548**
4.	Number of treatment units reported no stock out of first line anti-TB drugs (adult and child formulations) at the last day of each quarter	336	346	352	355	358	361	**361**
5.	Number of townships supervised and feedback provided by NTP during each quarter	175	330	330	330	330	330	**330**
6.	Number of basic health staff trained on selected modules of management of TB for health facility staff	3059	3000	3000	3000	3000	3000	**15,000**
7.	Number of TB patients tested for HIV	4174	68026	70036	72060	74098	76149	**360,369**
8.	Number of laboratory confirmed MDR-TB patients enrolled in the MDR-TB treatment programme (DOTS Plus)	64	400	600	800	1000	1200	**4,000**
9.	Number of <15 years new cases of	32540	30411	31596	32828	34110	35443	**164,388**

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	TB in children diagnosed and registered for treatment							
10.	Number of new smear positive TB patients registered in targeted border townships (Baseline was from Myawaddy, Kawthaung, Muse, Tarchileik)	560	650	750	850	900	950	**4,100**
11.	Number of private practitioner involved in DOTS	1500	1500	1500	1000	1500	1250	**6,750**
12.	Number of community health worker trained and actively involved in TB case finding and/or treatment activities at community level	-	1500	2250	3000	3250	3500	13,500
	DF/DHF Prevention and Control Project							
1.	**Dengue Surveillance**							
	- Establishing system for reporting timely and sharing of information		320	320	320	320	320	**320**
	-Training on surveillance system and sharing of information		6	6	2			**14**
	-Integrate dengue into laboratory network in endemic States/Regions		4	4	4	2		**14**
2.	**Dengue Integrated Vector Management**							
	- Develop IVM strategy / guidelines		1					**1**
	- Training of entomology staffs, VBDC staffs and BHS involved in IVM.		50	100	150	200	250	**750**
	- Conduction of vector surveillance		5	5	5	5	5	**25**
	- Conduction of Vector control		1000	1000	1000	1000	1000	**5000**
	- Laval control -- convention method		50	50	50	50	50	**250**
	- Mass larvicide		600	600	600	600	600	**3000**
	- Adult control		1	1	1	1	1	**5**
	-Map / assess vector populations (periodic re-mapping)							

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
3.	**Dengue Case Management**							
	- Training of MO, hospital staffs, and BHS on diagnosis, treatment and referral of cases.		80	80	80	50	40	**330**
4.	**Social Mobilization & Communication for Dengue**							
	-Advocacy meeting on social mobilization at State/Division & township level in identified endemic areas		10	14	14	14	14	**66**
	-Develop work plan on dengue prevention and control plan at local level with the involvement of private sector and other multi-stakeholders		14	14	14	14	14	**70**
5.	**Dengue outbreak response**							
	- Training of VBDC and BHS staffs on outbreak response		15	15	15	15	20	**80**
6.	**Dengue operational Research**							
	- Conduct workshop to develop operational research protocols		1	1	1	1	1	**5**
	- Develop a protocol for evaluation studies (effectiveness of lavicide)		1	1	1	1	1	**5**
	- Conduct study on effectiveness of lavicide		1	1	1	1	1	**5**
	Trachoma Control and Prevention of Blindness Program							
1.	Teams/Secondary Eye Centers expanded	2010	1	1	1	1	1	**5**
2.	Cataract Surgery in Myanmar	80,936	83,927	86,877	89,827	92,777	95,727	**44,9135**
3.	Village eye health exam; and Model	2012	2216	2420	2624	2828	3032	**13120**
4.	School Health	1200	1,200	1,200	1,200	1,200	1,200	**7200**
5.	PEC trainees	500	500	500	500	500	500	**2,500**
6.	Cataract Surgical Rate in million population(CSR)	1372.15	1422.5	1472.5	1522.5	1572.5	1622.5	
7.	Trichiasis surgery rate	3500	5000	5000	5000	5000	5000	**28500**

6.2 Prevention, Control and Care of Non-Communicable Diseases and Conditions

6.2.1 Situation Analysis

Non-communicable diseases, in general may be categorized in to two groups, the first of which include chronic non-communicable diseases/conditions with shared modifiable risk factors-tobacco use, unhealthy diet, physical inactivity, harmful use of alcoholc. Improving and making these individual behaviours conducive to health can lead to reduction in risks of developing cardiovascular diseases, diabetes mellitus, cancer and chronic respiratory diseases.
The other category includes health conditions of public importance are: accidents and injuries, disabling conditions like, physical disability, blindness and deafness. Mental health, substance abuse and snake bite are situations considered under this category. Majority of these conditions will also require rehabilitation.

National STEPS Survey (2009) reported that the prevalence of smoking was 33.6% in males and 6.1% in females, the prevalence of hypertension was 31% in males and 29.3% in females, and prevalence of overweight (BMI ≥ 25 kg/m^2) was 21.85% in males and 23.07% in females and obesity (BMI ≥ 30 kg/m^2) was 4.3% in males and 8.4% in females. Myanmar is now facing double burden of diseases (Communicable Diseases & Non-Communicable Diseases) due to the demographic and socioeconomic transition that occurred in recent decades. Chronic non-communicable diseases/conditions with shared modifiable risk factors are: tobacco use, unhealthy diet, physical inactivity, harmful use of alcohol: cardiovascular disease, diabetes mellitus, cancer and chronic respiratory disorders. Non-communicable diseases/conditions of public health importance are: accidents and injuries, disabling conditions (blindness, deafness, physical disability), mental health, substance abuse and snake bite.

Of the two strategic pathways that are employed for prevention and control of NCDs, the "population approach" rather than the "high risk approach", has been advocated. This particular approach aims at reducing the risk factor levels in the population as a whole through community action, in order to achieve mass benefit across a wide range of risks and cumulative societal benefits. Among 11 countries of the South East Asia Region of the

World Health Organization, 54% of the annual 14.7 million deaths are due to these chronic conditions and they also accounted for almost 50% of the disabilities. As 30% of the premature deaths before the age of 60 are due to these conditions they are also reducing the life expectancy. Deaths due to these conditions are projected to be rising by 21% within a decade ending in 2015. Harmful use of alcohol, consumption of fruits and vegetables inadequately, having no other alternatives apart from consuming food that are cheap but rich in fat and salty, because of economic conditions are increasingly common among disadvantaged, poor and vulnerable populations in the Region. Smoking and tobacco use is common among the poor who tend to use tobacco leaves more than the rich. According to the study titled "NCD Risk Factor Survey in the Myanmar Population" which was conducted by the CVD Project in 2005, the prevalence of CVD risk factors were as follows: Hypertension - 21.27%; Smoking - 21.34%.; Overweight - 10%; Diabetes mellitus (over the age of 40 years) 12.38%. According to a study conducted in Yangon townships in 2003, NCD risk factors were: Hyper-cholesterolaemia - 26.26%; Abnormal ECGs suggestive of ischaemic heart disease - 13%. The prevalence of hypertension has remained relatively stable during the past several years and it is comparable to the figures of neighboring countries. The daily salt intake of an average person in Myanmar, although it has declined within the past few years, is nevertheless still higher than the WHO recommendation of (6) gram or the control of hypertension. Community awareness of this, according to a KAP study conducted in Yangon, is 98% and therefore a further decline in the salt intake in the whole country is expected in the next 5 years.

WHO has estimated the prevalence of diabetes mellitus in Myanmar as 2.4 percent in 1995 and 2.5 percent in 2000. It was projected to be 3.2 percent in the year 2025. Previously data on diabetes epidemiology for the country has been scarce and the magnitude of the problem was not known. Calculations of the size of the problem were based, actually, on hospital reports and returns. The findings were believed to be a vast under-estimate of the real situation, since, hospital reports and returns were based on discharge and death certificates, which rarely mentioned diabetes as the primary cause for admission or death, even though it is the underlying cause of illness for many admission and deaths.

Cancer usually develops gradually over many years, the result of a complex mix of environmental, nutritional, behavioral and hereditary factors. Cancer, together with other

non-communicable diseases are on the rise globally. Most common cancers attending at Radiotherapy Department Yangon General Hospital are: breast cancer, cervix cancer, lung cancer, head and neck cancer, (Ca Larynx and Ca Nasopharynx), stomach cancer, non-Hodgkin's Lymphoma, oesophagus cancer, ovarian cancer, connective tissue and other soft tissue cancers and colon cancer.

As Myanmar moves on the path of socioeconomic development there is a shift in epidemiological transition towards non-communicable diseases, out of which accidents and its squeal are the transport and communication. Road traffic accident becomes one of the major public concerns throughout the country with the better transportation. As industrialization is going on the industrial accident is also rising, the next to road traffic accident, and measures should be undertaken for industrial accident prevention also.

Provision of mental health care had been started in Myanmar since 1948, when Myanmar regain independence. In the early days, mental health care system began in hospital setting in Yangon and then extended to Mandalay. Care for mentally ill patients in big hospitals is not effective because the patients were stigmatized and later became institutionalized with prolonged stay in hospital. Mental illnesses are now becoming one of the emerging health problems. It is important that approaches for mental health care need to be decentralize and institutionalization and stigmatization should be avoided. Mentally ill persons residing in places beyond the road of hospitals are accessible to proper care and attempts have been made to shift mental health care from hospital settings to community settings to ensure effective care.

Drug abuse has become a global problem during the past decade. The problem of Heroin use became acute and widespread during the early 1970, and had started to infiltrate into the mainland cities, especially among the youth. As a result of this changing pattern of involvement, Myanmar economy and Myanmar society is facing a serious threat form it. ATS problem emerged starting from 1999: it is anticipated that ATS would become a major problem in future. The Health sector was assigned to carry out of the following tasks: case detection, treatment and after-care; case follow-up and management; training of health personnel in drug abuse; registration of drug addicts. The Department of Health, has set up a total of (26) major Drug Treatment Centers (40) Subsidiary Centers and (2) Rehabilitation

Centers making a total of (68)treatment centers in the whole country. A new rehabilitation center named "Shwe Pyi Thit" is now preparing to open at Tima area in Muse Township of Shan (North) State.

Snake Bite has been a hazard in rural in Myanmar for centuries. Farmers and forest workers in the 15-45 years age group are particularly affected resulting in great socioeconomic loss. As an agriculture country undergoing great developmental changes in every sector including agriculture and forest increasing demand for their labor exposes their workers to greater risk of snake bite. Snake bite is included in the 17 diseases under national surveillance. The poisonous snakes found in Myanmar are Russell's viper bite contributing 90% of poisonous snake bite in Myanmar. Number of poisonous snake bites is more or less increasing during the period 1999-2002 and morbidity rate is ranging between 7-8. It is obvious that both number of snake bites and morbidity need health reduction.

In Myanmar, there will be between 1.5 and 2.5 million disabled according to the past experiences. The majority of the disabled are residing in the rural villages and are virtually inaccessible to rehabilitation services. The country provides rehabilitation services for people with disability through institutional based rehabilitation since 1959. The institutional based rehabilitation service is provided by National Rehabilitation Hospital. Two Departments of Physical Medicine and Rehabilitation in Yangon and Mandalay and Physiotherapy Units attached to General and Specialist Hospital in the State & Division.

However, about 70% of the country's population are residing at the rural villages and virtually inaccessible to the rehabilitation services. To expand the Rehabilitation facilities to cover the rural population in near future is impossible. Therefore, the community based rehabilitation services was considered in response to global change of strategy concerning rehabilitation. It has covered (588183) population from 218 villages, 88 wards of 27 townships. Identified 9416 disabled of various categories, ie nearly 2%. International evaluation team (External Review) which came to evaluate the program impact and strongly recommended to expand the program to cover the whole country in phase wise manner.In addition, not only the general population but also the many health professional are still not adequately aware of the disability related issue

and how, after proper rehabilitation, the disabled persons can contribute towards socio-economic development of the country. Furthermore, new professionals, occupational therapist and speech therapist, are required for rehabilitation to various disabilities.

These non-communicable chronic conditions usually affect those who are in the most productive period of life causing high premature mortality rates and reducing efficiency and productivity. The World Bank had estimated that these chronic conditions could lead to (4-10)% loss of in GDP in India. Most of the people are not under the protection of social security arrangements and these disease conditions by their nature of requiring life-long treatment and care impose high burden of health care costs for the poor. If the disease process cannot be controlled properly diseases like diabetes mellitus and hypertension can lead to severe complications like blindness and stroke.

Based on hospital statistics these chronic disease and conditions are found to be increasing in numbers and mortalities are also high. According to the statistics released from the South East Asia Region of the World Health Organization these conditions need to be solved as public health problems. Arrangements are also in need for the availability of more complete data and information.

6.2 Objectives

6.2.1 General Objective

- To prevent and reduce disease, disability and premature deaths from chronic non-communicable diseases and conditions

6.2.2 Specific Objectives

- To develop policy, legislative and financial measures to build environment supportive for reduction of risks
- To reduce level of exposures of individuals and populations to the common risk factors

- To strengthen health care delivery for people with non-communicable diseases by developing norms and guidelines for cost-effective interventions with the aim to improving case management
- To Establish Surveillance System for monitoring risks, and chronic disease and conditions .

6.2.3 Strategies

- Developing a national multi-sectoral framework for the prevention and control of non-communicable diseases
- Reducing risk factors for non communicable diseases aiming at providing and encouraging healthy choices for all
- Enabling health system to respond more effectively and equitably to the health-care needs of people with chronic non-communicable diseases and conditions
- Developing a coordinated agenda for research on non communicable diseases in order to generate or strengthen the evidence base for cost effective prevention and control

6.2.4 Priority Actions

- Developing comprehensive national policy and plan for the prevention and control of major NCDs
- Establishing high level national multi-sectoral mechanisms for planning, guiding, and monitoring
- Implementing cost effective approaches for the early detection of major NCDs
- Strengthen capacity of HRH for better case management and to help people to manage their own conditions better

6.2.5 Partnership

- Collaboration with the following programmes of the National Health Plan and related departments and sectors will be undertaken:
- Health promotion
- Tobacco control

- Health system strengthening
- Nutrition promotion
- School health
- Adolescent health
- Maternal, neonatal and child health
- Related ministries and organizations
- Private sector
- Social organizations
- United Nation Agencies

6.2.6 Monitoring and Evaluation

- Monitoring and evaluation will be based on assessing achievement of the following situations
- Policy and strategy for major non-communicable diseases
- Involvement, organization and planning at national level
- Policy research on chronic non-communicable diseases and conditions
- Capacity building on managing chronic non-communicable diseases

6.2.7 Projects to be implemented

- Prevention and control of non-communicable diseases
  - Cardiovascular diseases
  - Diabetes mellitus
  - Cancer
  - Chronic Respiratory diseases
- Prevention and control of accidents
- Mental health and substance abuse
- Snake bite control
- Community based rehabilitation

6.2.8 Targets

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	Epidemiological Surveillance and Response							
1.	Health Education							
	- TV advertisement	10	10	10	10	10	10	**60**
	- TV Talk	2	2	2	2	2	2	**10**
	- Poster	900	900	900	900	900	900	**4500**
	- Pamphlets	3200	6000	6200	6400	6600	6800	**32000**
	- Preventive Cardiology Book	-	500	-	500	-	500	**1500**
	- Manual on Hypertension	500	500	-	500	-	500	**1500**
	- Manual on Updated Cardiopulmonary Resuscitation	700	700	-	700	-	700	**2100**
	- Health education CD	-	50	50	50	50	50	**250**
2.	Training							
	- Cardiac specialty training	2	2- 5	2- 5	2- 5	2- 5	2- 5	**10-25**
	- Annual meeting	1	1	1	1	1	1	**5**
	- Workshop/ Symposium	2	2	2	2	2	2	**10**
3.	Live saving training							
	- Number of trainee	500	500	500	500	500	500	**2500**
	- Number of training doctor	48	48	48	48	48	48	**240**
4.	CVD Clinic in townships	47	+2	+2	+2	+2	+2	10
5.	Research	1	1	1	1	1	1	5
	Cancer Control Project							
1.	Health education of out patient	12	12	12	12	12	12	**60**
2.	Education programme through TV	4	4	4	4	4	4	**20**
3.	Distribution of IEC Posters and Pamphlets to hospitals and MCH centers	1	1	1	1	1	1	**5**

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	Chronic Respiratory Diseases Project							
1.	Surveillance							
	- Population			1		1		**2**
	- Hospital Statistics				1		1	**2**
2.	Health Education							
	- Radio Talk			1	1	1	1	**4**
	- TV Program				1			**1**
	- IEC Posters			100		100		**200**
	- IEC Pamphlets			200	200	200	200	**800**
	- CME program			1	1	1	1	**4**
	- Symposium			1		1		**2**
3.	Training / Workshop							
	- BHW			1	1	1	1	**4**
	- Medical Practitioners			1	1	1	1	**4**
	- Foreign Training				1		1	**2**
4.	Supplies & Equipments							
	- Peak flow meter			50	50	50	50	**200**
	- Spino meter			1	1	1	1	**4**
5.	Health Service							
	- Asthma and COPD Clinic			2	2	2	2	**8**
6.	Evaluation & Monitoring							
	- National Health Plan				1		1	**2**
7.	Research Activities					1	1	**2**
	Prevention of Deafness Project							
1.	Production of IEC materials and manual on deafness		1	1	1	1	1	**5**
2.	Holding workshop on prevention of deafness project for ENT specialists and BHS		1	1	1	1	1	**5**
3.	Holding of Annual Temporal bone Workshop for upgrading of specialists		1	1	1	1	1	**5**

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
4.	Procurement of necessary equipment for diagnosis, treatment and rehabilitation		1	1	1	1	1	**5**
5.	Yearly outreach excursions to various States and Regional for treatment of deafness patients		2	2	2	2	2	**10**
6.	Updating of specialist knowledge by attending region and extra-regional workshops		1	1	1	1	1	**5**
7.	Annual survey on deafness of factory workers		1	1	1	1	1	**5**
Community Based Rehabilitation Program								
1.	CBR program expansion							
	(a) Township	30	1		1		1	**3**
	(b) Village/ Wards	685/ 111	100/10		100/ 10		100/ 10	**300/ 30**
	(c) Population	880464	100000		100000		100000	**300000**
	(d) PWD	13674	2000		2000		2000	**6000**
2.	Number of training conducted for health care provider and community							
	(a) VHW	1129	100		100		100	**300**
	(b) BHS	345	50		50		50	**150**
	(c) PTs	113	10		10		10	**30**
	(d) TMO	31	1		1		1	**3**
3.	Capacity building							
	(a) Manpower training							
	i. Doctors CBR	6						
	ii. Physiotherapist							
	- CBR (local)	-						
	- CBR (abroad)	15	2		2		2	**6**
	iii. Prosthetic/ Orthotic Technician							
	- Local CBR	22	5		5		5	**15**
	- Abroad CBR	1						
	(b) Materials							

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	i. Prosthetic/ Orthotic							
	ii. Physiotherapy Equipment							
	iii. Teaching material (a) IEC material (b) Computer (c) Projector (d) Stationary							

6.3 Improving Health for Mothers, Neonates, Children, Adolescent and Elderly as a Life Cycle Approach

6.3.1 Situation Analysis

Newborn and child health

Country report on 2006 Fertility and Reproductive Health Survey indicated under five mortality fell from 83.7 per thousand live births in 1996 to 76.1 per thousand live births in 2006. Infant mortality rate fell from 70.3 per thousand live births to 68.3 per thousand live births in the same period. Under five mortality and Infant mortality declined obviously between 1990 and 1996.

Mortalities were substantially higher in rural than in urban and also among those with low socioeconomic status. A 2003-2004 nation-wide study by MoH and UNICEF found that about 73 per cent of all under-five deaths occurred in infancy and 27 per cent in the 1-4 years age group. During infancy, 34 per cent of deaths occurred in the neonatal period. Among the neonatal deaths more than two thirds occurred during the first seven days after birth, most within three to four days of the onset of the first signs of illness. Failure to recognize the seriousness of illness led to delay in seeking care. In rural areas, 89.9 per cent of the neonatal deaths occurred in home delivered babies, while in urban areas, 75.8 per cent of neonatal deaths were among babies delivered at home. Neonatal deaths were twice as common if the baby was delivered by non-skilled birth attendants as compared to a midwife or doctor. The main direct causes of deaths among children under five are pneumonia/ acute respiratory infections (27.6%), continued to be diarrhea (17.6%), Brain infection (17.1%),and malaria (7.6%), exacerbated by underlying malnutrition. The main direct causes of deaths among neonates are Preterm birth (30.9%), Birth Asphyxia (24.5%) and Infection (25.5%).

According to Hospital statistics, the main causes of under five deaths are diarrhoea (16.9%), Acute Respiratory Infection (10.1%), Pneumonia (9.1%), neonatal jaundice (8.9%), DHF(6.3%)and viral infection (5.5%).

For the newborn and under five health care coverage, breast feeding rate one hour after delivery was 35% before the breast feeding program and it was increased to 65% after the program. In order to have clean delivery, 2.7 millions of clean delivery kits were provided from 2001 to 2007. According to the post training evaluation in 2007 conducted in 5 townships, 51.7% of deliveries used clean delivery kits. Tube and Masks were provided for neonatal resuscitation by Women and Child Health Development Program.

To reduce the under five mortality rate up to 70/1000 live births, Myanmar has started implementation for IMMCI strategy since 1998. Based upon the fact that 15% of under five deaths are due to maternal nutrition and complication during pregnancy and child birth, maternal portion was included. IMMCI has transformed into WCHD since 2001, which covered 322 townships in Myanmar. In WCHD project comprised of newborn health, child health, adolescent health and women's health which has covered 184 townships in 2010.

Maternal and reproductive health

According to UN estimates by WHO, UNFPA, UNICEF and World Bank (2010), the maternal mortality ratio (MMR) in 1990 was 520 maternal deaths per 100,000 live births and in 2010 was 200 maternal deaths per 100,000 live births. The 2004-2005 Nationwide Cause Specific Maternal Mortality Survey estimated the MMR to be 316 per 100,000 live births and 89% of all maternal deaths were from rural area. Based on this trend, achieving the national MDG 5 MMR target of 130 per 100,000 live births by 2015, remains a challenge.

The 2004-2005 Nationwide Cause Specific Maternal Mortality Survey also reported significant variations in MMR based on age, type of delivery, urban-rural locality and region. MMR was highest in the 45-49 age groups, but younger women aged 15-19 years also showed the higher risks compared with other age groups. The majority of maternal deaths (88 percent) took place at home, but also in public hospitals (10 per cent) or on the way to a health care facility (2 percent). The same study showed that MMR was 140 per 100,000 live births in urban populations but 363 per 100,000 live births in rural populations.

Severe post-partum haemorrhage was the main direct obstetric cause of maternal deaths (31 per cent), followed by hypertensive disorders of pregnancy including eclampsia (11.3 per cent) and abortion related causes (9.9 per cent).

Since the research findings from Department of Medical Research which was carried out in 1994 showed that 58 % of the pregnant women were anemic and by Nutrition Section of the Department of Health indicated that it has shown as 71% of anemic pregnant mothers in 2004, the special interventions to prevent and correct anemia during pregnancy needed to be strengthened. According to 2003 Health Statistics, the number of facilities with functioning basic essential obstetric care is 8/500,000 population and that of comprehensive essential obstetric care is 4/500,000 population.

Table-1: Maternal Health Service Coverage (2009-2011)

Indicator	Year 2009	Year 2010	Year 2011
Antenatal care coverage, one visits (%)	70.6	73	74
Proportion of birth assisted by skilled birth attendant (%)	64.4	64.8	67.1
Frequency of post natal visits,	6	6.5	6.7
Referral rate	7.1	9.2	10.1

Source: HMIS, Department of Health Planning.

According to the Fertility and Reproductive Health Survey, the total fertility rate (TFR) in Myanmar dropped from 3.4 in 1990 to 2.4 in 2000-2001, 2.1 in 2006 , and 2.0 in 2007 The decline in fertility levels could be attributed to delays in age of marriage and first birth, increase in proportion of never-married, declined fertility preferences and increased use of modern methods of contraception among women.

Myanmar demonstrated a marked increase in its contraceptive prevalence rate (CPR) reaching 37% in 2001 (32.8% using modern methods and 4.2% - traditional methods) and 41% in 2007 (38% using modern methods and 3% traditional methods.)

However, nationally, the unmet need for contraception is still high and is estimated at 19.1% in 1997, 17.8 in 2001 and 17.7 in 2007 of all currently married women of reproductive age (4.9 % - unmet need for spacing and 12.8% - for limiting). The most widely used methods of contraception are three-monthly injectable (14.9%), followed by daily combined oral pills (8.6%). Birth spacing services in Myanmar are provided through the public and private sectors.

While abortion is legally restricted and permitted only to save woman's life, according to the 2004-2005 NCSMM Survey, abortion related causes were responsible for 9.86% of all maternal deaths, while earlier studies reported higher proportion of maternal deaths due to septic abortions. According to hospital statistics septic abortion contributed to 53% of all maternal deaths. According to the 2004 Family and Youth Survey, the traditional birth attendant's home was the most often sited place for inducing abortion. Predominantly unsafe abortion practices by an unqualified practitioner are responsible for the development

of complications and deaths of young mothers. Lack of access to birth spacing services, unawareness about dangers of induced abortion in unsafe conditions and delays in seeking a qualified care often leads to the tragedy.

Sexually transmitted infections do not spread evenly through populations. Infections spread to lower risk populations largely through male bridge groups that have contact with both high-risk (sex-workers, intravenous drug users, men having sex with men) and lower-risk populations (spouses, girlfriends). While information on epidemiological pattern of STIs/RTIs is scarce, antenatal screening data can be a marker for sexual transmission trends. The antenatal syphilis rates were 2.0% in 2007 and 2.1% in 2008 according to the HIV Sentinel Sero-surveillance Surveys.

In accordance with the changing social and economic policies, it calls for provision of special attention to 'young people' segment of the community, focusing on reproductive health within the present demographic and socio-economic context. According Central Statistical Organization (2002), young people from age 10 to 24 years constituted about 29 percent of the total population. Besides, 20 to 30 percent of maternal deaths were found to be among women below 25 years old. Studies also showed that adolescent pregnancy were more prone to face maternal and neonatal complications such as premature births, low birth weight and neonatal mortality.

According to the 2004 Family and Youth Survey (FAYS), the mean number of youth per household is one. More than 20% of rural female youth and 13% of rural male were ever married compared to urban. About 3-5% of youth are only children and no sibling while about 40% of youth have 2-3 siblings. The youth who have no education is about 5% with the proportion higher in rural. Contraceptive awareness among youth is very common (85%).Mean age at first pregnancy for ever married youth are 19.3 years while it is 19.9 years for age at first birth.

Myanmar 5 years Reproductive Health Strategic Plan (2009-2013) has been developed in order to solve the priority problems.

Adolescent and Youth health care

The number of (10-24) year age group in Myanmar is estimated at 15.5 million, 30 per cent of the total population. By nature people of this age group tend to look for new experiences and have high potential for encountering risk and hazards, leading to un-planned pregnancy and child birth, unsafe abortion and contracting HIV/AIDS. These situations could culminate in facing social and health problems throughout their lives. Priority health problems of the adolescent, identified in the National Strategic Plan for Adolescent Health Development include; reproductive health issues and HIV/AIDS, nutrition development, substance abuse, use of tobacco and alcohol and accidents. The investment for AYH is not only for health but also for Nation's development. To conduct quality Adolescent and youth health care services need to collaborate and coordinate effectively among all related Ministries/ Sectors and all stakeholders. (Multi-sectoral approach). For comprehensive AYH program, need to improve coordination among of all stakeholders including parents, teachers, health care providers, community members and adolescent her/his self. Also need to develop enabling environment for AYH services at all health facilities by establishing youth friendly health centre and providing quality care for young people.

School health

A global school based health survey was conducted among (13-15) age group children in 2007 to assess behaviours of school youth related to food, personal hygiene, mental health, physical exercise, tobacco use, violence and accidents. The study found risk behaviour and practices are not high among the students. The main findings are; possessing healthy behaviours like tooth brushing and washing hands before taking food and after toilet, low use of alcohol and tobacco compared with neighbouring countries, proportion of students with potential to become obese was 3.1 per cent although obesity is not prevalent, accidents more likely among male students and high proportion of students with knowledge on HIV/AIDS. Physical exercise was not common and 24.3 per cent of students stated that majority of students were not considerate and not willing to help others.

Elderly health

Proportion of people older than 60 years was over 8.8% percent of the total population in 2011-2012. With the objectives to promote health of older people and increase the accessibility of health care services for them, the elderly health care programme was launched in (1992-1993), starting in six townships. The programme now covers 88 townships in 2011-2012. Assessment in programme townships found only one in ten elderly could performs activities of daily living well and joint diseases, chronic airway diseases, hypertension, heart disease, cataract and dental health problems were identified as the most commonly encountered health problems. In addition memory defect, mental illness and loneliness were also found and effective measures were still not in place. Elderly health problems cannot be solved by health sector alone and comprehensive care for elderly will require collaboration of related departments and organizations, non-governmental organizations, families and communities.

6.3.2 Objectives

6.3.2.1 General Objective

- To reduce morbidity, disability and mortality through the life span including those of mothers, neonates and children and improvement in overall health status.

6.3.2.2 Specific Objectives

- To achieve Millennium Development Goals through reducing maternal, neonatal and child deaths
- To improve reproductive health care and to ensure quality reproductive health services are accessible to target groups
- To ensure healthy behaviors among adolescent including school youth and to improve their health status
- To improve health status of elderly through promoting accessibility to elderly health care

6.3.3 Strategies

- Providing health services through life span approach targeting mothers, children, adolescent and elderly
- Improving coverage and accessibility of care and services to mothers, new born and children
- Integrating services at every level of implementation
- Emphasizing continuation of care and services among households and community and ensuring their collaboration
- Collaborating coordinating with health system strengthening programme and other related programmes of the National Health Plan to ensure availability of human and financial resources in full and quality services

6.3.4 Priority Actions

- Strengthening reproductive health services and quality
- Providing health services for new born and under five children
- Adolescent health development
- School health
- Expanding primary oral care services
- Promoting elderly health providing *aged friendly primary* health care services

6.3.5 Partnership

The prgramme will collaborate closely with the followings:

- Disease control programme and expanded programme for immunization
- Nutrition promotion programme
- Health system strengthening programme
- Human resources for health development programme
- Health research programme
- Environmental health programme
- Prevention and control of non-communicable diseases programme
- Rehabilitation programme

- Traditional medicine development programme
- World Health Organization
- UNICEF
- UNFPA
- Local and international non-governmental organizations

6.3.6 Monitoring and Evaluation

The following indicators will be monitored and evaluated

- AN care coverage
- Skilled birth attendance rate
- Maternal mortality rate
- Under five mortality rate
- Infant mortality rate
- Neonatal mortality rate
- Contraceptive prevalence
- Unmet need for contraception
- STD rate among AN cases of (15-24) years age
- HIV rate among AN cases of 915-24) years age
- Syndromic treatment rate for STDs in clinics
- Teen age pregnancy rate
- Teen age friendly health service provision
- School health examination coverage
- Student examination coverage
- Sanitary latrines in school
- Supply of dental equipment and medicines
- Oral health care coverage for rural population
- Elderly heath care provision

6.3.7 Projects to be implemented

- Reproductive health project
- New born and under five children health development project
- Adolescent health project (School and out of school)
- Primary oral health care project
- Elderly health care project

6.3.8 Targets

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	Reproductive health project							
	Creating Supportive and Enabling environment for Adolescents							
1.	Township level Advocacy	132 town-ships	Ï	Ï	Ï	Ï	Ï	Ï
2.	Intersectoral cooperation (RH Committee Meeting)	3 times per year	3 times per year	3	3	3	3	**15**
Improving access of adolescents to information and skills								
1.	MMR Survey	330 townships	Ï	Ï	Ï	Ï	Ï	Ï
2.	Monitoring and Evaluation	330 townships	Ï	Ï	Ï	Ï	Ï	Ï
3.	Research		Ï	Ï	Ï	Ï	Ï	Ï
	Health system development							
1.	Development of reproductive health partnerships on BHS and TBAs by CME	30 town-ships	10 town-ship	10	10	10	10	**80**
2.	Training on care of antenatal, delivery, post natal and neonate	132 town -ships	10 town-ship	10	10	10	10	**182**
3.	Training on quality reproductive health care	132 town-ships	10 town-ship	10	10	10	10	**182**
4.	- Training on Basic Emergency Obstetric Care	4 townships	10	10	10	10	10	**54**
	- Training on Complete Emergency Obstetric Care	132 townships	Ï	Ï	Ï	Ï	Ï	Ï
5.	IUD insertion training	Magway, Mandalay	Sagaing, Ayeyarwad dy	Yangon, Bago €	Bago(W), Rakhaing	Shan	Others	**14**

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
6.	Quality ANC training	85 townships	27 township	10	10	10	10	**152**
7.	Training on prevalence of deliveries by skilled birth attendants	83 townships	29 township	10	10	10	10	**152**
8.	Post abortion care training	84 townships	28 township	10	10	10	10	**152**
9.	Neonatal care training	30 townships	10 township	10	10	10	10	**80**
10.	Review and revision of technical training materials, guidelines and standards	10	2	2	2	2	2	**20**
11.	Pre-service training	1	1	1	1	1	1	**6**
12.	Refresher training of PCPNC	46 persons	2 x 46 persons	Ï	Ï	Ï	Ï	
13.	Adolescent reproductive health counseling training	15 townships	5 township	5	5	5	5	**40**
14.	Male involvement training	6 townships	5 township	2	2	2	2	**19**
15.	Strengthening health information system on MCH	3 townships	10 township	10	10	10	10	**53**
16.	Investigate cause on maternal and neonatal death	32 town-ships	10 town-ship	10	10	10	10	**82**
17.	Workshop on township microplan projects	-	10 township	10	10	10	10	**50**
18.	Cervical cancer screening and early treatment	-	-	Ï	Ï	Ï	Ï	
Adolescent Reproductive Health and Strengthening of Male Involvement								
1.	Distribution of drugs and supplies	330 townships	Ï	Ï	Ï	Ï	Ï	
2.	Supervision	162 townships	40 township	40	40	40	40	
3.	Implementation of Referral system	3 townships	2 township	2	2	2	2	**13**

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
4.	Formation of support group for referral system	94 townships	5 township	5	5	5	5	**119**
5.	Distribution of poster, pamphlets, vinyl, IEC curtain and billboard	25 Items	3	3	3	3	3	**50**
6.	Training of community volunteers (MCH promoter)	94 townships	5 township	5	5	5	5	**119**
7.	AMW training	20 townships	5 township	5	5	5	5	**45**
8.	Production of Health Education video	5 items	1	1	1	1	1	**10**
	Neonate and Under 5 Health Development Programme							
1.	Training on maternal and child health development to BHS	184		16				
2.	Refresher course on maternal and child health development to BHS			25	25			
3.	Training on maternal and child health development to hospital staffs	184		16				
4.	Refresher course on maternal and child health development to hospital staffs			25	25			
5.	Training on treatment of pneumonia and diarrhoea to community volunteer	1		5	5			
6.	Training on home based neonatal care to community volunteer	10		5	5			
7.	Procurement of supplies and equipment	184		200	200			
8.	Trainings on behavioral change to adopt healthy activities	24		5	5			
9.	Training on coordinated treatment of unhealthy neonate and under 5 child on BHS	18		4			4	**26**
10.	Training of trainers on coordinated treatment of unhealthy neonate and under 5 child	18		4			4	**26**
11.	Surveillance after training	18		4			4	**26**
12.	Training on coordinated treatment of unhealthy neonate and under 5 child on hospital staffs	18		4			4	**26**
13.	Supervision	184		200	200			

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	Adolescent health programme (in school/ out school)							
1.	Expansion of project townships	18	10	10	10	10	10	**50**
2.	Establishment of Township Youth Friendly Health Services	18	10	10	10	10	10	**50**
3.	Advocacy meeting at township level	1	10	10	10	10	10	**50**
4.	Training of trainers	1	1	1	1	1	1	**5**
5.	Training of BHS	2	1	1	1	1	1	**5**
1.	Coverage of schools examined (%)	90%	2%	2%	2%	2%	2%	**100%**
2.	Coverage of students examined (%)	90%	2%	2%	2%	2%	2%	**100%**
3.	Schools with sanitary latrine coverage (%)	80%	4%	4%	4%	4%	4%	**100%**
4.	Coverage of schools with in-school nutritional activities (%)	50%	6%	6%	6%	6%	6%	**80%**
5.	Formation of township school Health committee (%)	75%	5%	5%	5%	5%	5%	**100%**
6.	Formation of township school Health team at district level	47%	-	-	9%	-	9%	**65%**
	Primary Oral Health Care Project							
1.	Dental Unit	114	25	25	25	25	25	**125**
2.	Instruments and Materials		10		10		10	**10**
3.	Providing basic and emergency oral health care services to rural community of 103 project townships	72	72	72	72	72	72	360
4.	Township refresher training on Primary Oral Health Care	30	15	15	15	15	15	**75**
5.	Giving award to model RHC concerned with Primary Oral Health	2	2	2	2	2	2	**10**
6.	Conducting follow up research activities of two pilot oral health researches (%)	50	25	25				**50**
7.	2 Oral Health Research done by Department of Health (%)			50		50		**100**
8.	New research activities		25%	25%		25%	25%	**100**
Elderly Health Care Project								
1.	Advocacy meeting at State/Regional level	2	3	3	3	3	3	**15**

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
2.	Conducting Elderly Health Care Training at townships	88	10	10	10	10	10	**50**
3.	Open Elderly Clinic up to RHC level	88	10	10	10	10	10	**50**
4.	Base line survey on situation of Older people	88	10	10	10	10	10	**50**
5.	Annual Evaluation of Elderly Health Care Programme at Central		1	1	1	1	1	**5**

6.4 Hospital Care Programme

6.4.1 Situation Analysis

The National Health Plan forms an integral part of the National Development Plan and is in tandem with the national economic plan. The plan will ensure effective implementation of the National Health Policy. Hospital Care Programme is one of the main components of the National Health Plan. It consists mainly of curative services. Curative services are provided by various categories of health institutions, under the Ministry of Health ranging from teaching hospitals, specialist hospitals, state/ division hospitals, district hospitals and township hospitals situated in urban areas down to station hospitals, rural health centres and sub-centres in rural areas. During the plan period of 2006-2011, the country has 897 hospitals with 42,634 hospital beds under the Ministry of Health. Hospital bed per 100,000 population is 71.06, and doctor nurse ratio is 1:1 in current situation.

The Quality of Health Care Services in Hospitals Project addresses not only to the population in urban area but also to the people living in rural area by providing effective medical care and modern health facilities. Hospitals provide comprehensive health care as first referral, secondary and last referral (tertiary) level curative care facility; they also provide emergency care for the casualties due to the natural and unnatural disasters or the critically ill. Medical care encompasses the general and specialist hospitals at the central and divisional/state level as well as the hospitals at the district, township and rural levels. The need for the maintenance and strengthening of referral facilities at the first referral level is becoming increasingly apparent. So it is the need for maintenance of medical supplies and equipment at all levels of care while trying to upgrade the hospitals in terms of the number of beds, extension of specialist services up to the level of the district hospital, according to the requirements of different specialties.

The average hospital admission rate is 17 per 1000 population and bed occupancy rate based on sanctioned bed is 51.8% and bed occupancy rate based on available bed is 41.6%. The average duration of stay in hospitals is 7days. Despite innovative approaches in the health care delivery system, there are still many shortcomings, such as insufficient drugs and equipment in addition to the shortage of manpower and technology. Although it can be claimed that the large teaching hospital should have the most complex kind of hospital

services, especially the peri-urban poor and a large share of the rural population have little access to the high level technology and manpower in these hospitals, which raises the issue of equity in access to hospitals and health care services. The following weaknesses could be observed in providing health care services in hospitals: inefficient hospital administration and health management at different levels; insufficient drugs and equipment; shortage of manpower and technology; improper referral system; improper hospital waste management system; improper medical recording and information system; ineffective supply system management. The general objective of the project is to improve the quality of health care services in hospitals and its specific objectives are to increase the ratio of bed to population from 62.07 per 100,000 population to 75 per 100,000 population by 201; to increase the hospital performance indicators from existing figures by 2011; and to reduce the mortality rates in hospitals.

Essential drugs are those that satisfy or most needed for the health care of the majority of the population; they should therefore be available at all times in adequate amounts and in the appropriate dosage forms, and at a price that individuals and the community can afford. National Drug Law was promulgated in 1992 to ensure drugs (medicines) consumed by the community to be safe and efficacious and of good quality. The Myanmar Essential Drug Project (MEDP) has replicated its activities phase by phase and now, all townships in primary health care level have been covered with essential drugs concept, rational use of drugs, estimation of drugs requirement, systematic management of drugs supply system and drugs counseling, Information, Education and Communication relating to use of drugs to community for compliance to essential drugs.

During replication of project activities, it has adopted Community Cost Sharing (C.C.S) system for the drugs in all townships in the primary health care area. And then, the project has incorporated with Revolving Drug Funds system in which some township and district hospitals are now being implemented. The respective township (or) district medical officer have to establish the drug shop with revolving drug funds and replenish the required essential drugs with the approval and agreement by the Township Health Supervisory Committee, and they are proceeding with the system of Community Cost Sharing for the drugs only by the user. Revolving Drug Funds will serve as mean of establishing drug financing for the townships in primary health care area so that the Ministry of Health will be

relieved of the drug budget for the primary health care area and may use the budget in other activities of health care in the country.
MEDP has been replicating its activities in the health care facilities under other Ministries by giving training to the health workers concerned. Some of the health care facilities under this respective ministry may adopt the charging for the drugs only as Community Cost Sharing based on the MEDP activities.

MEDP has also extended its activities to the General Practitioners of the country through the good offices of the Myanmar Medical Association and advocated them to select their essential drugs lists according to their area organization and services on the principles of essential drugs programme of WHO. After covering the primary health care area under the first referral level of the country, MEDP has planned to extend its activities to the secondary referral level and then to the tertiary referral level for identification of their Intermediate List of Essential Drugs together with development of their Hospital Formularies and Standard Treatment Guides under the guidance and supervision of the Hospital Therapeutic Committees. The general objective of the project is to ensure that every citizen have regular access to safe, quality, efficacious, low-cost and available essential medicines in every health care facility and its specific objectives are: to increase the number of trainers for multiplier course of concept of essential drugs, rational use of drugs, estimation of drugs requirements and systematic management of drug supply system; to disseminate the knowledge of revolving drug funds among District and Township Medical Officers; and to increase the number of health related institutes for integration of concept of essential drugs, rational use of drugs into their undergraduate and post- graduate curriculum.

In providing comprehensive health care to the community, new hospitals and clinics are being built and put into service as well as recruiting and training of manpower to meet the quantity and quality standards. The Division of Nursing (DON) is responsible for improvement of the quality of nursing services. DON carries out project activities that focus on quality of nursing and midwifery services, on enabling to equip nurses and midwives with requisite knowledge and skills in order to improve contribution of nursing and midwifery services under their own local health care settings. It has been recognized that strengthening of nursing and midwifery services is highly essential to reduce mortality, morbidity, and disability and for promoting of healthy lifestyles. Improvement of the nursing

and midwifery service programme is based on on-going improvement of the quality, efficiency, effectiveness of their services to achieve customer's satisfactions.

Under the broad programme for strengthening of nursing and midwifery services in Myanmar, one of the projects is to develop guidelines for implementing a system of total quality management in nursing and midwifery services; this project aims to improve infection control practices in selected health care facilities as part of the total quality management. The infection control practices in health care facilities will be developed according to the WHO'S practical guidelines for infection control in health care facilities manual and will be adapted based on the needs assessment in selected hospitals. The newly adapted guidelines will be reviewed and applied for nursing and midwifery daily practices that would help to prevent spread of cross infection and further to reduce hospital infection rate so as to deal effectively with newly emerging and re-emerging infectious diseases like SARS, HIV/AIDs, Tuberculosis, Hepatitis as well as other hospital-associated infection. For provision of essential supplies and equipment, practical guidelines for infection control practices will be developed. This practical guideline will be translated into local language (Myanmar) as user friendly initiative down to the grass root level health care providers.

Infection in health facilities is a major health problem; nurses and midwives are exposed to infectious micro-organisms in their everyday life. Infection control programme puts together various practices which, when used appropriately, restrict the spread of infection. It is important for all health care workers, patients, their family members, friends and close contacts to adhere to the infection control guidelines strictly.

Nowadays emergence of life-threatening infections such as AIDS, SARs, H_5 N_1 infection and re-emerging infectious diseases like plague and tuberculosis have highlighted the need for efficient infection control programme in all health care settings. It is needed to provide adequate resources for effective functioning of the infection control such as aseptic techniques, using of single use devices, reprocessing of instruments and equipment, antibiotics usage and management of medical waste. Incorrect sterilization technique, poor practice as well as insufficient instruction about infection control may lead to increase infection rate, sepsis rate and delay wound healing. Control of infection is an important part of every action that a nurse performs. Although surgical asepsis is commonly practiced in

the operation room, labour and delivery area and major diagnostics areas, the nurse must also apply surgical aseptic technique at the clients 'bedside. This would include, for example, inserting intravenous or urinary catheters, suctioning the tracheo-bronchial airway secretions, and making surgical dressing. The main objective of the project is to provide administrator and health care workers with the tools to enable them to implement the infection control programme effectively in order to protect themselves and others from transmissions of infections.

In line with the provision of Private Medical Facilities act promulgated in 2007, several private medical settings have been started in the country. As of March 1st, 2011, private hospital clinics licensing have be provided to 151 private hospitals and 521 specialist clinics. It is essential that the private medical sector should be conscious and put more effort not only in establishing more number of hospitals but also to impart the quality of health care services, avoiding from depriving of the patient socio-economic situation due to high health care expenditure. As far as sustaining the quality of health care, standardization of accreditation, formation of provider and customer association, establishing an appropriate health insurance scheme and cooperation with international health care organization are some critical measures need to explore further.

The Health Care System aims primarily at improving the quality of life of every citizen through activities designed to enable citizens to have lives which are as free from disease as possible and to increase their life span. Health Laboratory Services, an integral part of the National Health Services, provide the essential backbone support for Primary Health Care by: assisting in early and reliable diagnosis and treatment; investigating outbreaks of disease; collecting reliable surveillance data for effective disease control; collecting and providing data for disease prevention; monitoring the quality of water and food; providing appropriate support for related health care programmes such as rehabilitation; and if possible, monitoring the various vertical national health programmes. In order to fulfill these essential functions, the country has established and sustained a nationwide health laboratory services network extending from the rural (peripheral) to urban (intermediate and central) levels so as to provide: effective diagnosis and monitoring of disease; proper and prompt communications enforced by smooth functional coordination, cooperation and timely referrals; timely, adequate and effective logistics support at all times, especially in

emergency situations. In the near future, laboratories performing simple microscopy alone will be centred at rural health centers and categorized as type D. The general objective is to establish new Clinical Pathology and Public Health Laboratories in township, station hospital and remote border area locations phase-by-phase and to upgrade the respective intermediate and central level referral laboratories in order to enhance the effectiveness and success of the National Health Care Delivery System.

Following World War II, transfusion medicine has evolved, together with other diagnostic, curative, preventive and rehabilitative aspects of the Health Care Delivery System, to become one of its essential important themes. Transfusion of specific blood and blood products has become an established standard way of treating patients who are deficient in one or more blood components, and has replaced the traditional trend of giving whole blood only. Meanwhile, enhanced knowledge on the inherent dangers of blood transfusion, including not only of reactions from mismatching, but also of transmission of infectious diseases such as HIV, HBV, HCV, malaria, syphilis and many others, have led to the realization that a universal goal of ensuring timely and adequate supply of safe blood and blood products must essentially be set. In order to achieve this ultimate goal, it is of prime importance to successfully establish a system of a 100% voluntary, non-remunerated blood donation and to employ ways and means of operating the National Blood Transfusion Services on a comprehensive cost-recovery basis in addition to promoting and sustaining the rational use of blood and blood products appropriate to the country situation. Blood Transfusion Services (BTS) are operated by hospital-based blood banks which are part of the hospital laboratory.

CMSD is responsible for procurement, storage and distribution of medical supplies for all hospitals, Urban Health Centre, Rural Health Centre, MCH, School Health Teams and Health Centres under Ministry of Health. It is also responsible for clearance, storage and distribution of UNICEF, WHO and other donation supplies. CMSD also take, the responsibility for repair & maintenance of all biomedical & hospital equipment. At present Computerized Inventory Control System & Local Area Network has been set up with the co-operation of Myanmar Computer Company. There are network connections between CMSD Yangon, CMSSD Mandalay and Taunggyi by remote access server. In Yangon there is one main server and 16 stations. Further expansion of networking is in place. At present

inventory control is carried out manually and computerized inventory control system is in trail stage using 16 computers by 27 trained staffs. As for training, basic computer course, computer programming course and refresher courses are being conducted. CMSD received the drug & medical equipment from various sources and supply to the CMSSD (Mandalay, Taunggyi), Transit Camps and to State & Division health department. No difficulty is encountered in distribution from State & Division to district & Transit camps due to information gap. To overcome this difficulties setting up communication Network is mandatory. The communication systems are developing rapidly & easily communicate to the States & Divisions by the Auto telephone systems.

6.4.2. Objectives

6.4.2.1 General Objective

- To improve the quality of health care services given by health care providers

6.4.2.2 Specific Objectives

- To increase the hospital performance indicators from existing figures
- To reduce the mortality rates in hospitals
- To provide comprehensive primary health care for those residing in the border area
- To ensure that every citizen has regular access to safe, quality, efficacious, low-cost and available essential medicines in every health care facility
- To improve the quantity and quality of nurses and midwives in upgrading the primary health care and hospital medical care services to the people.
- To promote the laboratory and safety blood services to international standards.
- To promote the computerized inventory control and networking system.

6.4.3 Strategies

- Developing an equal access to health care services in urban and rural areas by establishing new hospitals in rural areas.
- Enhancing better quality of health care services by providing sufficient health man power and supplies.

- Conducting on job training and refresher courses to improve the capability of the health care personnel.
- Improving the quality of private medical care.

6.4.4 Priority Activities

- Upgrading of the health facilities in terms of quality care.
- Ensuring safe medical care services in health facilities.
- Myanmar Essential Drug Programme.
- Upgrading the private medical care services.
- Improving the quality of nursing and midwifery services.
- Maintaining the standards of laboratory services
- Logistics and medical supply and information networking
- Strengthening of drug law and its regulatory mechanism.

6.4.5 Partnership

- Cooperation among Units and Projects within the Ministry of Health
- Cooperation with other relevant Ministries.
- Cooperation with private sectors, NGOs and Civic Societies.
- Cooperation with UN Agencies and International Partners in Health.
- Bilateral cooperation and with that of Regional Countries.

6.4.6 Monitoring and Evaluation

The monitoring and assessment will be carried out based on the following steps and performance indicators of the programme area:

- Setting of a work plan schedule for close monitoring.
- Responsible personnel at different level (township, district, state and division, central) will supervise and solve the problems of concerned hospitals.
- Development of a regular reporting system including accurate and valid data for hospital statistics.

- Monitoring the progress of health care activities in hospitals by means of hospital performance indicators.
- Supervision and monitoring of essential drugs and equipment supply system.
- Hospitals will be examined for accreditation and level of consumers' satisfaction on hospital will be pronounced by a responsible body.
- Monitoring the rational prescribing of drugs by the health workers according to Standard Treatment Guides and Hospital Formularies and its compact on quality of health care.

6.4.7 Projects

Improving Hospital Care Programme area comprised of the following 7 projects:

- Quality of Health Care Service in Hospitals
- Patient safety and medical security
- Myanmar Essential Drug
- Nursing care and improving nursing quality
- Laboratory and blood safety
- Logistic information
- Regulation of private health care

6.4.8 Targets

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
Quality of Health Care Service in Hospitals Project								
Establishment of new hospital								
1.	General Hospitals	-	-	-	-	-	-	-
2.	Specialist Hospitals	1	-	-	1	-	1	**2**
3.	District Hospitals	-	-	-	-	-	-	**-**
4.	Township Hospitals	-	1	1	-	-	-	**2**
5.	Station Hospitals	1	19	17	51	51	51	**189**
6.	Sub-township Hospitals	-	4	-	-	-	-	**4**
7.	Others	-	-	5	-	-	-	**5**
Upgrading of Bed Strength in Hospitals								

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
1.	General Hospitals	1	1	-	1	-	-	**2**
2.	Specialist Hospitals	-	-	-	-	-	-	**-**
3.	District Hospitals	2	-	2	2	2	2	**8**
4.	Township Hospitals	-	4	1	1	1	1	**8**
5.	Station Hospitals	2	4	3	3	3	3	**16**
6.	Sub-township Hospitals	-	-	2	2	2	2	**8**
7.	Others	-	-	-	-	-	-	**-**
Upgrading to Standard Organization Set-up								
1.	General Hospitals	-	19	1	1	-	-	**21**
2.	Specialist Hospitals	-	1	2	-	2	-	**5**
3.	District Hospitals	-	-	-	-	-	-	**-**
4.	Township Hospitals	-	5	2	2	2	2	**13**
5.	Station Hospitals	-	20	2	2	2	2	**28**
6.	Sub-township Hospitals	-	1	-	-	-	-	**1**
7.	Others	-	-	-	-	-	-	**-**
Cross cutting interventions								
1.	Upgrading of isolation rooms, intensive care units and sanitation facilities for infection control	2	5	5	5	5	5	25
2.	Purchasing of Computers and Printers	6	5	5	5	5	5	25
3.	Trainings							
a.	Hospital Waste Management	2	1	-	1	-	1	**3**
b.	Infection Control in hospital	1	1	-	1	-	1	**3**
c.	Baby Friendly Hospital Initiative	1	1	-	1	-	1	**5**
d.	Pre-Hospital Care and Disaster Management	2	1	-	1	-	1	**3**
e.	Hospital administration	1	1	1	1	1	1	**5**
f.	Refresher course for Physiotherapists	1	1	-	-	1	-	**2**
g.	Refresher course for Pharmacists	1	1	-	1	-	1	**3**
h.	Refresher course for Radiographers	1	1	-	1	-	1	**3**
i.	Refresher course for Medical Social Workers	1	1	-	1	-	1	**3**
Patient Safety and Medical Security Project								

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
1.	Training on patient safety solutions	1	1	1	1	1	1	**5**
2.	Training on surgical safety and dissemination of surgical checklists	1	1	1	1	1	1	**5**
3.	Research activities	1	1	1	1	1	1	**5**
4.	Advocacy meeting with hospital administrators	1	1	1	1	1	1	**5**
5.	Production and dissemination of IEC materials	1	1	1	1	1	1	**5**
6.	Providing and supporting of personnel protection equipment	1	1	1	1	1	1	**5**
7.	Formation of committee for security of health care providers	1	1	1	1	1	1	**5**
Nursing and development of nursing quality project								
1.	Pre- service short term training for newly recruited Nurses and Mid-wife	-	100	-	100	-	100	**300**
2.	Refresher training course for nurses, LHVs and Midwife	-	-	100	-	100	-	**200**
3.	Nursing care research activities-	-	-	1	-	1	-	**2**
4.	Training on Assistant Director (Nursing), Nursing Superintendent and Nursing Officer after evaluation on management	-	20	-	20	-	20	**60**
5.	Training on infection control on central and township level nurses and MWs	45	75	-	75	-	75	**225**
6.								
7.	Attending meeting/ conferences on nursing in Region/ Extra Region	-	1	-	1	-	1	**3**
8.	Training course for THN (1)	-	25	-	25	-	25	**75**
9.	Workshop and Training on leadership and management	18	18	-	18	-	18	**54**
Laboratory Services and Blood Safety Project								
1.	Formation of National Laboratory Policy		√					√
2.	Development of Blood Policy/ Guidelines		√					√

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
3.	National Accreditation on laboratory services		√	√	√	√	√	√
4.	Production of Blood Bank License		√	√	√	√	√	√
5.	Involvement of NEQAS		√	√	√	√	√	√
6.	Research activities		√	√	√	√	√	√
Logistic Information System (CMSD)								
1.	Training for computerized inventory control and networking system							
2.	Setting up the computerized inventory control (Web-Based) & network system to Mandalay & Taunggyi							
3.	Renovation and upgrading of prioritized warehouses							
4.	Installation of Data Based computerized inventory control system (CHANNEL) in CMSD(Yangon),CMSD(Mandalay) & Taunggyi							
Private Health Care Project								
Analyzing and issuing of license to Private Health care								
1.	Private Hospital	-	10	10	10	10	10	**50**
2.	Specialist clinics	-	25	25	25	25	25	**125**
3.	Diagnostic services	-	25	25	25	25	25	**125**
4.	Maternity Home	-	5	5	5	5	5	**25**
5.	Nursing Home	-	1	1	1	1	1	**5**
6.	Mobile clinic	-	3	3	3	3	3	**15**
7.	Health care agency	-	5	5	5	5	5	**25**
8.	General Health care services	-	5	5	5	5	5	**25**
Distribution of Private Health care licensing cards								
1.	Private Hospital	-	10	10	10	10	10	**50**
2.	Specialist clinics	-	25	25	25	25	25	**125**
3.	Diagnostic services	-	25	25	25	25	25	**125**
4.	Maternity Home	-	5	5	5	5	5	**25**
5.	Nursing Home	-	1	1	1	1	1	**5**

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
6.	Mobile clinic	-	3	3	3	3	3	**15**
7.	Health care agency	-	5	5	5	5	5	**25**
8.	General Health care services	-	5	5	5	5	5	**25**
Field supervision for Private Health care facilities								
1.	Private Hospital	-	40	50	60	70	80	**300**
2.	Specialist clinics	-	150	200	250	300	350	**1250**
3.	Diagnostic services	-	150	200	250	300	350	**1250**
4.	Maternity Home	-	10	15	20	25	30	**100**
5.	Nursing Home	-	1	2	3	4	5	**15**
6.	Mobile clinic	-	3	6	9	12	15	**45**
7.	Health care agency	-	15	20	25	30	35	**125**
8.	General Health care services	-	15	20	25	30	35	**125**
Cross cutting interventions								
1.	Formulating private Health information system format and review		√		√		√	√
2.	Issuing private Health care information reports formats							
	1.Private Hospital							
	(a)Issued report		250	300	350	400	450	**1750**
	(b) Received report		250	300	350	400	450	**1750**
	2.Private special clinic							
	(a) Issued report		-	-	500	600	700	**1800**
	(b) received report		-	-	500	600	700	**1800**
3.	Meetings, Seminar, workshops for private Health care							
	(a) Accreditation		1	1	1	1	1	**5**
	(b) Quality Health care		1	1	1	1	1	**5**
	(c) Health insurance scheme		1	1	1	1	1	**5**
	(d) Private Health information system		1	1	1	1	1	**5**
4.	Coordination /cooperation							
	(a) Public-private mix		1	1	1	1	1	**5**
	(b) Health committees and associations		1	1	1	1	1	**5**
5.	Evaluation		1	1	1	1	1	**5**

6.5 Development of Myanmar Traditional Medicine Programme

6.5.1 Situation Analysis

Myanmar Traditional Medicine has been existing since time immemorial and providing health care services for Myanmar people and is regarded as invaluable National Heritage. Changes in development of Myanmar Traditional Medicine took place with the passage of time. In 1989, with the aim to develop Myanmar Traditional Medicine, the Department of Traditional Medicine was established under the Ministry of Health as a separate department. Subsequently and up to now, the Department of Traditional Medicine has established three 50 bedded hospitals, ten 16 bedded hospitals and 243 Traditional Medicine clinics and 1757 staffs to provide health care services. Besides, in 2001 December 19, the University of Traditional Medicine was established with the objective “to produce qualified Traditional Medicine Practitioners”. The coverage of medical care by traditional medicine is 60000 per one traditional medicine practitioners. For higher education of traditional medicine, one university of traditional medicine, conferring Bachelor of Myanmar Traditional Medicine was established in 2001. As of 2013, the Universities have produced a total number of 2190 Traditional Medicine Practitioners holding a diploma degree and 1023 holding a bachelor degree.

To nurture and preserve the existing medicinal plant is to support the development of Traditional Medicine. Besides, to find out the efficient medicinal plant which is grown in different geographical area is also to upgrade the quality of Myanmar Traditional Medicine. One of the objectives of the Department of Traditional Medicine is to develop the herbal garden. There are altogether (9) gardens. Every garden is implemented to nurture and preserve medicinal plant. The objective of establishment of herbal garden is not only support to enough domestic raw materials but also preserve medicinal plant.

Development of Myanmar Traditional Medicine System is greatly depended upon the strengthening of capabilities for scientific research works and respective developmental tasks. Both human and material resources development are prime importance for such purposes. Scientific research works on traditional medicine

involve quality, safety and efficacy of herbal drugs. And developmental tasks involved the discovering and preservation of ancient manuscript and literatures regarding Myanmar Traditional Medicine, and family health care education and health system research on traditional medicine. Department of Traditional Medicine has been conducting research and development works. It has Research and Development (R&D) division which is responsible for the scientific research works and developmental tasks. Research section is conducting scientific investigations for traditional and herbal medicines done by basic and applied scientists. Various developmental tasks such as ancient literature surveys and traditional medicine health educations done by traditional medical practitioners are the responsibilities of development section. There is also a research unit with basic laboratory facilities in the University of Traditional Medicine, Mandalay. Scientific research projects were also being conducted as necessary. The general objective is to increase the capabilities of research and development functions of the Department of Traditional Medicine and that of the specific objectives are: to increase human resources of scientific researchers and traditional medicine professionals; to upgrade the abilities and skills of mentioned human resources; and to facilitate the laboratory equipment, chemicals and traditional medicine health education aids.

Myanmar traditional medicine practitioners are producing and marketing effective traditional medicine based on their own experiences so that most people can utilize such affordable drugs for health problems. Department of Traditional Medicine is also producing and distributing standardized traditional medicine drugs in powder and tablet form at a reasonable prices and distribute for departmental traditional medical clinics free. All the traditional medicines from government and private sectors must have registration and manufacturing license according to the traditional medicine law, if they are distributed in the market. Moreover, ensuring potency of medicinal plants, manufacturers and supervisors of intellectual property right and law are necessary for people to get safe and efficacious traditional medicine continuously. However, there still areas to improve in terms of understanding and following GMP practices, uniformity in drug formulation its quality control and its limitation in trained technicians for sufficient production.

6.5.2 Objectives

6.5.2.1 General Objectives

- To upgrade the status of Myanmar Traditional Medicine

6.5.2.2 Specific Objectives

- To produce government traditional medicine practitioners qualified as international.
- To involve in health activities by traditional medicine practitioners according to the National Health Policy.
- To provide quality assured safe and effective traditional drugs for people.
- To support enough raw materials for Traditional Medicine manufacturing factories.
- To find out scarce medicinal plants.
- To increase the capabilities of research and development functions of the Department of Traditional Medicine.

6.5.3 Strategies

- Exploring training programme for both in country and abroad to conduct workshop for development of human resources.
- Conducting development training for Traditional Medicine Practitioners for upgrading quality of care.
- Expanding cultivation of medicinal plant to support sufficient raw material for domestic demand.
- Eliminating counterfeit drugs in the market to enable people to use genuine drugs.
- Expanding activities of Research & Development.
- Training researchers and traditional medicine professionals in their respective disciplines, to promote their working experiences by doing more research projects and developmental tasks.

6.5.4 Priority Activities

- Providing effective training programmes to traditional medicine professionals to promote the quality of care to the people
- Exploring training program for cultivation and preservation of medicinal plant
- Promoting the production of safe and effective traditional medicines
- Strengthening of Institutional Capacity of Traditional Medicine Research and Development
- Expanding the herbal plantation for having sufficient raw material and traditional medicine production.

6.5.5 Partnerships

The programme is working in close collaboration externally with WHO, JICA and Nippon Foundation, and internally with Traditional Medicine Practitioners' Association and Civic Societies.

6.5.6 Monitoring and Evaluation

The programme performance and its achievements will be monitored on the followings:

- No. of graduates in Traditional Medicine
- No. of graduates in Traditional Medicine (Bridge Course)
- No. of postgraduate degree holders in Traditional Medicine.
- Provision of refresher training for all traditional medicine professional.
- No. of Traditional Medicine Hospitals upgraded to 100 bedded hospitals.
- No. of Traditional Medicine Hospitals upgraded to 50 bedded hospitals.
- Expansion programmes of traditional medicine clinics in districts and townships.
- Provision of GMP training programmes.
- Sampling collections from out-lets.
- Provision of training programmes in traditional medicine.
- No of times the traditional medicine research papers reading session could be conducted.
- Support of raw materials of traditional medicine.
- Enabling of collection of rare medicinal plants.

6.5.7 Projects

The programme includes the following (4) projects which will be implemented in 2006-2011:

- Strengthening of Capacity Building for Traditional Medicine Practitioner.
- Upgrading the Quality of Herbal Garden.
- Strengthening of Institutional Capacity of Traditional Medicine Research and Development.
- Production of Quality Assured Traditional Medicine.

6.5.8 Targets

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
Strengthening of Capacity Building for Traditional Medicine Practitioners								
1.	Traditional Medicine Bachelor	130	140	101	100	100	100	**541**
2.	Traditional Medicine Bachelor (Bridge course)	-	-	51	50	50	50	**201**
3.	Master of Traditional Medicine	-	-	6	4	5	5	**20**
4.	Staff who received refresher course	118	50	50	50	50	50	**250**
Upgrading the Quality of Traditional Medical Care								
1.	Upgrading of 100 bedded hospital	-	2	-	-	-	-	**2**
2.	Upgrading of 50 bedded hospital	2	1	2	2	5	4	**14**
3.	Expand 100 bedded hospital	-	-	1	-	-	-	**1**
4	Expansion of 25 bedded hospitals in District level township	-	-	-	-	15	15	**30**
5.	Expand 16 bedded hospital	12	-	1	-	50	60	**111**
6.	Expand district TM department	43	-	-	8	15	15	**38**
6.	Expand village tract level clinic	194	-	-	100	100	100	**300**
7.	Field visit	5000	2000	2000	2000	2000	2000	**10000**
Production of Quality Assured Traditional Medicine								
1.	GMP trainings	-	-	-	2	2	2	**6**
2.	Sample collection and testing	5	2	1	2	2	2	**14**

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	registered traditional drugs from market							
Strengthening of Institutional Capacity of Traditional Medicine Research and Development								
1.	QC Training on private traditional medicine producer	-	1	1	1	1	1	**5**
2.	Traditional medicinal health education	2	2	2	5	5	5	**21**
3.	Traditional medicinal research congress	1	1	1	2	2	2	**9**
Upgrading the Quality of Herbal Garden								
1.	Items of raw materials	8	2	2	2	2	2	**10**
2.	Preserving scarce medicinal plants	20	5	5	5	5	5	**25**

In 5 years plan period, DTM will try to propose the expansion of 50 bedded hospitals in all States and Regions, 25 bedded hospitals in townships where district offices are present and all townships except townships of State and Regions and townships of district offices exist. DTM will open the village tract clinic to cover the community in the village tract level .

6.6 Development of Human Resources for Health Programme

1.1 Situation Analysis

Under the leadership of the Ministry of Health, the Department of Medical Science is responsible for training and production of all categories of health personnel with the objective to attain appropriate mix of competent human resources for delivering the quality Health Services. Considering the changes on demographic, epidemiological and socioeconomic trends both nationally and globally, it is imperative to produce efficient human resources for health for providing quality health care services to the entire population in the country. In addition, it is also crucial to produce competent human resources for health who are capable to keep abreast with the advanced global health standards.

In order to train and produce qualified human resources for health, specific administrative and academic issues in universities as well as existing under graduate curricula should be reviewed, revised and updated for relevance to the health needs, competency needs and training needs by conducting Medical Education Seminar periodically. The Department of Medical Science convened the 9th Medical Education Seminar in July 2011 to review and revise the curricula of Medical and Allied Universities. Diploma Midwifery curriculum had been developed in 2011 and would be started in 2012 Academic year. Lady Health Visitor curriculum was reviewed and revised to change from task oriented to competency based curriculum in 2011.

The Universities of Medicine under the Department of Medical Science had gradually increased the intake of students since the year 2000 according to the country needs. Previously, the intake of the students was about 550 in all 3 medical universities. In May 2001, University of Medicine, Magway was newly established and (1300) medical students entered to all 4 medical universities in 2000-2001. According to the National Health Plan 2001-2006, it was expected that the annual student intake would be (2400) students at the end of the project period. In 2005-2006, the student intake was (2403) in all 4 medical universities and yearly intake of (2400) students was planned for the next project period of 2006-2011. It was in line with the National Health Plan and also as the requirement for

National Education Promotion Special 4 year Plan for Promoting National Education. In 2006-2011, (10394) medical doctors were produced, whereas the expectation of the project was about (12400). Based on records of July 2006, the available medical doctors and population ratio in the country was 1:2980 and while completing the National Health Plan (2006-2011) period it was increased to 1:2261.Similary the yearly intake of Dental Medicine, Pharmacy and Medical Technology were of 300 students each and during the NHP 2006-2011 period, 1153 Dental Surgeons, 1416 Pharmacists and 1291 Medical Technologists were produced.

In 2010-2011, the intake of nursing students (Generic) was (307) and nursing students (bridge course) was (94) and the two universities had produced (273) nurses from generic course and (147) nurses from bridge course. The intake of BNSc bridge course is planned to increase to (150) and intake of Specialty nursing is planned to increase (20) students each in six area yearly. The student intake of the Nursing Training Schools had increased to (1000) students since 2001. Starting from 2003, it has been increasing up to (1200) students. For Midwifery training the yearly students intake was about 900 . Till end December 2010, (4103) nurses holding BNSc degree , (24231) nurses holding diploma degree and (31143)Midwives were produced. At present doctor and nurse ratio is (1:1.4)and has been planned to increase this ratio up to (1:3) in line with that of ASEAN countries

The Department of Medical Science is also responsible for production of Basic health personnel who serve for delivery of health care services in rural area, where 70% of the population resides. The basic health category consists of health assistants, lady health visitors, midwives, public health supervisor I and public health supervisor II. University of Community Health is responsible for production of Health Assistants (holding B.Comm.H Degree) and Health Assistants (Condensed Course). During the project period of 2006-2011, it was planned to take (150) students yearly. In the year 2011, (142) Health Assistants holding B.Comm.H degree and (50) from condensed course, (132) LHVs, (890) MWs and (75) PHS I were produced. As the ratio of RHC and population coverage in 2011 is 1:26567 compared to that of 2006 which was 1:26633, it is found that there is no significant difference. The ratio of midwife and population in 2011 is 1:4462, whereas (1:4144) in 2006.

For provision of comprehensive and quality health care to the community and uplifting of the health standard of the nation it is crucial to have qualified health personnel sufficiently. So, production of adequate and qualified postgraduates in various disciplines according to the needs of the National Health Plan is also important . (7) postgraduate diploma courses, (29) Master courses, (8) Ph.D and (36) Dr.Med.Sc courses are being conducted in Universities under Department of Medical Science. In the year 2010-2011, there were 1021 medical doctors attending the postgraduate training. As requirement of postgraduates varies with different categories, training and production of postgraduates in various disciplines should be according to the needs, and if necessary arrangement should be done for study in foreign countries.

The population growth, high expectations of the populace and emergence of new technology in the medical field- all have impact on the plan formulation for training and production of balanced Human Resource for Health. Among the health plan for the future, since the numerical expansion had been carried out in the previous years, quality of new products should be emphasized in the following years. The task of Infrastructure development including the building new class rooms, laboratories and libraries, repair and renovation of structures for academic activities and related activities and appointment of faulty members and staff of Medical Universities and various affiliated Institutes and training schools is a main component

The infrastructure development is very important so that students could have an ambience where they can pursue their areas of interest effectively and without distraction. Actually it would determine how well they can achieve to the highest level of their potential. On the other hand postgraduate studies in medical field are areas where cutting edge technology and advances in medicine are explored by students of medicine. Postgraduate diploma, master, doctorate and PhD courses are also running in Medical and allied Universities. To produce not only sufficient but also efficient graduates is the prime objective of our academic institutions. Improvements in teaching facilities, staffing and provision of laboratory and library with modern equipments are also erequisite for academic excellence. The training of trainers, on the other hand, is another facet that we cannot neglect.

The globalization and impact of ICT development is felt worldwide and Myanmar medical academia is no exception. Innovative ways of training, totally new crops of health care givers and even new categories of health workers are needed to make headway in effective health care delivery. It is time for developing a new University of Public Health in Myanmar and so this item would be a major component of the project as espoused below. The objectives of upgrading of universities and training institutions are: to provide established academic institutions with dedicated teachers, modern teaching aids and support staff and facilities such as libraries, research laboratories, training laboratories and ICT components; to establish a new category of post graduate training school ie. the University of Public Health; to train the students to have self-learning and to become ethical, accountable and of towering moral fiber.

To keep abreast with advanced South East Asian Countries, Universities and Training Schools under Department of Medical Science are producing increasing numbers of different categories of human resources for health yearly in line with the need of National Health Plan. The department is managing for increased number of students to have effective learning opportunities with modern technologies. On the other hand, it is also necessary to develop a system for Continuing Medical Education to provide effective health care and to study updated advanced methods. Regarding Continuing Medical Education Post-graduate trainings are being conducted within the Country for enhancement of education of Medical Doctors, Dental Surgeons and Nurses. To apply Information Communication Technology (ICT) in Continuing Medical Education, Network Systems are already setup among Department of Medical Science(Head quarter), Medical Resource Centre, University of Medicine (1), New Yangon General Hospital and Yangon General Hospital ; between University of Medicine (2) and North Okkalapa General Hospital ; and between University of Medicine (Magway) and New 200 Bedded Hospital (Magway); and among Mandalay General Hospital ,Mandalay Child Hospital and University of Medicine (Mdy).There is also a plan for Video Conferencing between teaching hospitals of Yangon University of Medicine (1) and Medicine (2), University of Medicine (Mandalay) and University of Medicine (Magway) for managing Health workforce, Health Workforce Information System, development is important and development of National Health Workforce Strategic Plan is included in this project.

1.2 Objectives

- To produce different categories of human resources for health in accordance with the National Health Plan which is in line with the National Health Policy.
- To produce adequate and qualified postgraduate health personnel for delivery of comprehensive, health care to the community effectively and efficiently.
- To strengthen the infrastructure of institutes and training schools for production of human resources for health sufficiently and efficiently.
- To develop a system for continuing medical education in accordance with the progressive and changing trends in medicine, science and technology.
- To promote educational research in medical and health professional institutes and to develop ICT network system in order to improve teaching/learning activities to keep abreast with global standard.

1.3 Strategies

- Production of different categories of human resources for health by coordination and cooperation with other programmes.
- Opening of new institutes and training schools systematically in accordance with human resources for health needs.
- Production and provision of teaching/learning materials with advances in technology.
- Review and revision of the curricula according to the changing trends in medical education.
- Provision of continuing education opportunities for different categories of health personnel.
- Promotion of educational research activities for the teaching/learning activities.

1.4 Priority Activities

- Training and production of qualified medical doctors and postgraduates medical professionals.
- Training and producion of Basic Health personnel.
- Expansion of postdgraduate training programmes based on the country needs.
- Expansion of oversee training programmes.
- Effective utilization of modern technology in provision of medical education programme .
- To develop a master plan for human resources for health.
- Research development activities .

1.5 Partnerships

- Cooperation among the Departments within the Ministry of Health.
- Intersectoral cooperation with other relevant Ministries.
- Cooperation with NGOs.
- Cooperation with UN Agencies.
- Cooperation with China Medical Board and INGOS.
- Cooperation with International Universities.

1.6 Monitoring and Evaluation

The programme performance will be monitored and assessed through the following steps and indicators:

- Annual assessment of production of qualified doctors, dental surgeons, pharmacists, medical technologists , nursings, midwifery and BHS.
- Yearly production of postgraduates professionals.
- Capacity to expand the postgraduate training programmes.
- Sufficient infrastructure, training support equipment and updating modern technology in the provision of training programmes.

1.7 Projects

- Human Resources for Health Development Project.

- Upgrading of Universities and Training Institutions Project.
- Continuing Medical Education and Development of ICT Network Project.
- National Health Workforce strategic Plan development Project.

Target

Sr. No	Object/Activity Indicator	Basic Year 2010-2011	5 Years Planning Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
Production of Human Resources for Health								
(a) Production of different categories of medical doctors and allied professionals								
1	Medical Doctors	2036	2109	2244	2311	2438	2368	**11470**
2	Dental Surgeons	269	289	328	274	308	338	**1537**
3	Pharmacists	245	257	282	259	306	300	**1404**
4	Medical Technicians	243	251	282	255	310	300	**1398**
	Total	**2793**	**2906**	**3136**	**3099**	**3362**	**3306**	**15809**
(b) Yearly Student intake in Universities of Medicine and allied Universities								
1	Medical Doctors	2422	2400	1200	1200	1200	1400	**7400**
2	Dental Surgeons	301	300	300	300	300	300	**1500**
3	Pharmacists	306	300	300	300	300	300	**1500**
4	Medical Technicians	310	300	300	300	300	300	**1500**
	Total	**3339**	**3300**	**2100**	**2100**	**2100**	**2300**	**11900**
(c) Yearly production of Nurses								
1	Nurses (Generic)	273	281	296	293	307	300	**1477**
2	Nurses (Bridge)	147	92	100	100	100	100	**492**
3	Nurses (Diploma)	1241	1208	1234	1302	1297	1500	**6541**
	Total	**1661**	**1581**	**1630**	**1695**	**1704**	**1900**	**8510**
(d) Yearly Student intake in Universities of Nursing and Nursing Training Schools								
1	University of Nursing (Generic Courses)	307	300	300	300	300	300	**1500**
2	University of Nursing (Bridge Courses)	136	100	100	100	100	100	**500**
3	Nursing Training Courses (Diploma Courses)	1340	1200	1200	1500	1500	1500	**6900**
	Total	**1783**	**1600**	**1600**	**1900**	**1900**	**1900**	**8900**
(e) Yearly production of Basic Health Staff								

Sr. No	Object/Activity Indicator	Basic Year 2010-2011	5 Years Planning Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
1	Health Assistant (CH A)	50	56	70	70	70	70	**336**
	Health Assistant 2(B.Comm.Health)	142	145	149	140	189	180	**803**
2	LHV	132	78	104	120	120	120	**542**
3	MW	890	929	1206	962	1200	1200	**5497**
4	PHS1	75	71	70	70	70	70	**351**
5	PHS2	-	200	806	800	800	800	**3406**
	Total	**1289**	**1479**	**2405**	**2162**	**2449**	**2440**	**10935**
(f) Yearly student intake of Basic Health Staff								
1	Health Assistant (CHA)	50	56	70	70	70	70	**336**
	Health Assistant 2(B.Comm.Health)	189	150	150	150	150	150	**750**
2	LHV	61	120	120	120	120	120	**600**
3	MW	1025	900	900	1200	1200	1200	**5400**
4	PHS1	75	71	70	70	70	70	**351**
5	PHS2	Training on PHS 2						
	Total	**1400**	**1297**	**1310**	**1610**	**1610**	**1610**	**7437**
(g) Number of postgraduate students to be taken per year								
Diploma								
1	Tuberculosis and Chest Diseases	2	2	2	2	2	2	**10**
2	Sexually Transmitted Diseases	2	2	2	2	2	2	**10**
3	Hospital Administration	17	20	20	20	20	20	**100**
4	Medical Education	31	30	30	30	30	30	**150**
5	Family Medicine	38	30	30	30	30	30	**150**
6	General Dentistry	20	20	20	20	20	20	**100**
7	Emergency Medicine	18	18	18	18	18	18	**90**
Master								
1	Internal Medicine	38	20	20	20	20	20	**100**
2	Surgery	16	20	20	20	20	20	**100**
3	Obst & Gynecology	31	15	15	15	15	15	**75**
4	Pediatrics	28	15	15	15	15	15	**75**
5	Orthoopaedics	4	15	15	15	15	15	**75**

Sr. No	Object/Activity Indicator	Basic Year 2010-2011	5 Years Planning Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
6	Anaesthesia	8	15	15	15	15	15	**75**
7	Ophthalmology	10	12	12	12	12	12	**60**
8	Otorhinolaryngology	5	10	10	10	10	10	**50**
9	Diagnostic Radiology	8	12	12	12	12	12	**60**
10	Mental Health	2	8	8	8	8	8	**40**
11	Pathology	15	20	20	20	20	20	**100**
12	Microbiology	10	10	10	10	10	10	**50**
13	Rehabilitation Medicine	6	5	5	5	5	5	**25**
14	Medical Jurisprudence	7	10	10	10	10	10	**50**
15	Nuclear Medicine	-	3	3	3	3	3	**15**
16	M.D.Sc	3	15	15	15	15	15	**75**
17	Anatomy	1	10	10	10	10	10	**50**
18	Physiology	7	10	10	10	10	10	**50**
19	Biochemistry	8	10	10	10	10	10	**50**
20	Pharmacology	5	10	10	10	10	10	**50**
21	Public Health	6	30	30	30	30	30	**150**
22	Dermatology	6	5	5	5	5	5	**25**
23	Radiation Oncology		3	3	3	3	3	**15**
24	Medical Oncology	1	3	3	3	3	3	**15**
25	M.N.Sc	1	8	8	8	8	8	**40**
26	Pharmacy	4	5	5	5	5	5	**25**
Medical Technology								
27	Medical Laboratory Technology	3	7	7	7	7	7	**35**
28	Physiothrapy	-	7	7	7	7	7	**35**
29	Medical Imaging Technology	4	7	7	7	7	7	**35**
PhD								
1	Anatomy	1	1	1	1	1	1	**5**
2	Physiology		1	1	1	1	1	**5**
3	Biochemistry	5	2	2	2	2	2	**10**
4	Pharmacology	3	2	2	2	2	2	**10**
5	Pathology	4	2	2	2	2	2	**10**
6	Microbiology	8	2	2	2	2	2	**10**
7	Public Health	2	2	2	2	2	2	**10**
8	Oral Biological Science	-	1	1	1	1	1	**5**

Sr. No	Object/Activity Indicator	Basic Year 2010-2011	5 Years Planning Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
9	Pharmaconosy	-	1	1	1	1	1	**5**
10	Pharmaceutical chemistry	-	1	1	1	1	1	**5**
11	Pharmaceutics	-	1	1	1	1	1	**5**
12	Clinical Pharmacy	-	1	1	1	1	1	**5**
Dr. Med.Sc								
1	General Medicine	8	3	3	3	3	3	**15**
2	General Surgery	6	3	3	3	3	3	**15**
3	Obsts & Gynaecology	3	2	2	2	2	2	**10**
4	Paediatrics	5	2	2	2	2	2	**10**
5	Orthopaedics	3	2	2	2	2	2	**10**
6	Cardiology	2	1	1	1	1	1	**5**
7	Cardiac Surgery	-	1	1	1	1	1	**5**
8	Respiratory Medicine	-	1	1	1	1	1	**5**
9	Neuromedicine	1	1	1	1	1	1	**5**
10	Nephrology	1	1	1	1	1	1	**5**
11	Gasteroenterology	-	1	1	1	1	1	**5**
12	Hepatology	-	1	1	1	1	1	**5**
13	Clinical Haematology	-	1	1	1	1	1	**5**
14	Thoracic Surgery	-	1	1	1	1	1	**5**
15	Neurosurgery	1	1	1	1	1	1	**5**
16	Urology	1	1	1	1	1	1	**5**
17	Paediatric Surgery	1	1	1	1	1	1	**5**
18	Maxilo-facial Surgery	3	2	2	2	2	2	**10**
19	Gynaecological Oncology	1	1	1	1	1	1	**5**
20	Reproductive Health	-	1	1	1	1	1	**5**
21	Neonatology	-	1	1	1	1	1	**5**
22	Hand Surgery	1	1	1	1	1	1	**5**
23	Anaesthesiology	5	2	2	2	2	2	**10**
24	Radiology	1	1	1	1	1	1	**5**
25	Ophthalmology	-	1	1	1	1	1	**5**
26	Otorhinolaryngology	2	1	1	1	1	1	**5**
27	Rehabilitation Medicine	-	1	1	1	1	1	**5**
28	Medical jurisprudence	-	1	1	1	1	1	**5**
29	Oral Medicine	1	1	1	1	1	1	**5**
30	Prosthodontics	3	1	1	1	1	1	**5**
31	Conservative Dentistry	2	1	1	1	1	1	**5**

Sr. No	Object/Activity Indicator	Basic Year 2010-2011	5 Years Planning Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
32	Paediatric Dentistry	1	1	1	1	1	1	**5**
33	Preventive and Community Dentistry	1	1	1	1	1	1	**5**
34	Rheumatology	-	1	1	1	1	1	**5**
35	Orthodontics	-	1	1	1	1	1	**5**
36	Periodontology	-	1	1	1	1	1	**5**
37	Endocrinology	-	1	1	1	1	1	**5**
38	Plastic Surgery	-	2	2	2	2	2	**10**
Number of Trainees to be sent abroad								
1	MRCP	12	52	10	10	10	10	**92**
2	MRCPCH	7	17	10	10	10	10	**57**
3	MRCOG	2	26	10	10	10	10	**66**
4	MRCS (General Surgery)	3	35	15	15	15	15	**95**
5	MRCS (Eye)	-	11	6	6	6	6	**35**
6	Training in Anatomy	2	-	2	-	2	-	**4**
7	Training in Physiology	2	-	2	-	2	-	**4**
8	Training in Microbiology	2	-	2	-	2	-	**4**
9	Training in Pathology	2	-	2	-	2	-	**4**
10	Training in Pharmacology	2	-	2	-	2	-	**4**
11	Training in Biochemistry	2	-	2	-	2	-	**4**
12	Training in Forensic Medicine	2	-	2	-	2	-	**4**
13	Training in Oral Medicine	2	-	2	-	2	-	**4**
14	Training in Oral Surgery	2	-	2	-	2	-	**4**
15	Training in Prosthodontics	2	-	2	-	2	-	**4**
16	Training in Conservative Dentistry	2	-	2	-	2	-	**4**
17	Training in Periodontics	2	-	2	-	2	-	**4**
18	Training in Paedodontics	2	-	2	-	2	-	**4**
19	Training in Orthodontics	2	-	2	-	2	-	**4**
20	Anaesthesia	-	-	1	-	1	-	**2**
21	Radiology	-	-	1	-	1	-	**2**
22	Pathology	-	-	1	-	1	-	**2**
23	Pharmacy	-	-	-	1	-	1	**2**
24	Librarian Training	-	-	-	1	-	1	**2**
25	Paramedical Science	-	-	-	1	-	1	**2**
26	MCH	-	-	1	-	1	-	**2**
27	Epidemiology	-	-	-	-	1	-	**1**
28	Biostatistics	-	-	1	-	1	-	**2**

Sr. No	Object/Activity Indicator	Basic Year 2010-2011	5 Years Planning Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
29	Behavioral Science	-	-	1	-	1	-	**2**
30	Health Economics	-	-	-	1	1	-	**2**
31	Occupational Medicine	-	-	-	1	-	1	**2**
32	Medical Education	-	-	1	-	-	1	**2**
33	Audiometry Training	-	-	-	-	1	-	**1**
34	Nuclear Physics	-	-	-	-	-	1	**1**
35	Radiation Physics	-	-	-	-	1	-	**1**
36	Nutrition	-	-	-	1	4	1	**5**
New Post Graduate Courses to be opened								
A.Diploma								
1	Emergency Medicine				✓			
B.Master								
1	Health Economic						✓	
2	Demography						✓	
3	Health Statistics						✓	
4	Occupational Health						✓	
5	Tropical Medicine						✓	
6	Nutrition						✓	
7	Medical Education					✓		
8	Toxicology					✓		
9	Environmental Health					✓		
C.Doctorate								
1	Nursing Science					✓		
2	Paediatric Orthopaedics					✓		
3	Rheumatology		✓					
4	Geriatrics						✓	
5	Parasitology						✓	
6	Epidemiology						✓	
7	Endocrinology						✓	
8	Immunology						✓	
9	Genetics						✓	
10	Molecular Biology						✓	
11	Periodontology		✓					
12	Orthodontics		✓					
13	Oral Biological Science		✓					
14	Plastic Surgery				✓			

Sr. No	Object/Activity Indicator	Basic Year 2010-2011	5 Years Planning Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
15	Endocrinology				✓			
16	Pharmaconosy				✓			
17	Pharmaceutical				✓			
18	Pharmaceutics				✓			
19	Clinical Pharmacy				✓			
Upgrading of Universities and Training Institution Project								
1	Appraisal of the previous 5 yr plan		✓	-	-	-	-	-
2	Renovation of existing buildings, development of new buildings		✓	✓	✓	✓	✓	✓
3	Provision of teaching aids		✓	✓	✓	✓	✓	✓
4	Upgrading of laboratories, and national		✓	✓	✓	✓	✓	✓
5	Employment		✓	✓	✓	✓	✓	✓
6	Training international and national		✓	✓	✓	✓	✓	✓
7	Establishment of universities, collage and training institute			✓	✓	✓	✓	
	- University of Medicine, Taunggyi				✓	✓	✓	
	- Nursing and Midwife Training School, Kalay					✓	✓	
8	Expanding Department of Medical Sciences							
Continuing Medical Education and Development of ICT Network Project								
1	Manpower and Training (1) Video Production training (2) Pedagogy (3) Computer Training attending		 2 2 10	 2 2 10	 2 2 10	 2 2 10	 2 2 10	 **10** **10** **50**
2	Production of VCDs for teaching/ learning		50	50	50	50	50	**250**
3	Electronic E-Books		10	10	10	10	10	**50**
4	Production of video tape for teaching		✓	✓	✓	✓	✓	✓

Sr. No	Object/Activity Indicator	Basic Year 2010-2011	5 Years Planning Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	/learning							
5	Conducting Educational Research by Medical Education Center in collaboration with Medical Education Units.		2	2	2	2	2	**10**
Formulation of Strategic Plan for Human Resources for Health Management								
1	Information on human resource for health in public, cooperate and private sector - Doctors - Dentists - Nurses - Traditional Medicine Practitioners		✓	✓	✓	✓	✓	✓
2	Human resource for health research		✓	✓	✓	✓	✓	✓
3	Evaluation and estimation of human resource for health needs		✓	✓	✓	✓	✓	✓

6.7 Health Research Programme

6.7.1 Situation Analysis

Research and development play an important role in fulfilling the two main objectives of the Ministry of Health: to enable every citizen to attain full life expectancy and enjoy longevity of life, and to ensure that every citizen is free from disease. The Article 11 of the National Health Policy promulgated in 1993, states "*To encourage conduct of medical research activities not only on prevailing health problems but also giving due attention in conducting health systems research*". The Ministry of Health has given priority towards the implementation of research in accordance with the National Health Policy, especially research which is applicable to national health development. To strive for the attainment of the above-mentioned objective, the Health Research Policy Board has laid down the following guidelines: to promote health research by strengthening research capability through development of manpower, technologies and infrastructure; to identify factors affecting national health, and to conduct research for effective control and therapeutic measures; to identify factors promoting national health, and to institute appropriate measures for community practice; to promote and conduct health systems research; to investigate major communicable and non-communicable disease problems prevalent in Myanmar for effective control and therapeutic measures; to investigate major nutritional problems prevalent in Myanmar for effective control and therapeutic measures; to promote and conduct reproductive health research in accordance with the National Health Policy; to translate research findings into practical applications. Moreover, one of the nine objectives of Myanmar Health Vision 2030 is "*to develop medical research and health research up to international standards*".

The Department of Medical Research (Lower Myanmar), the Department of Medical Research (Upper Myanmar) and the Department of Medical Research (Central Myanmar) are the principal organizations that sponsor and conduct research in Myanmar. Moreover, the Departments of Health, Medical Science, Traditional Medicine, Health Planning, and

related departments under various Ministries also implement research activities in addition to their principal functions, in a cohesive and concerted effort for the maximum achievement of national health.

Health Research Programme (HRP), formulated in accordance with the National Health Policy and the Health Research Policy Board guidelines, was implemented mainly by the Departments of Medical Research. One of the major achievements during the 2001-2006 National Health Plan was the establishment of the Department of Medical Research (Central Myanmar). The main objective of the HRP is to conduct research in order to solve the health problems of the community. Proposal development and implementation of research activities were carried out in the six priority diseases, on communicable and non-communicable diseases, traditional medicine with emphasis on herbal drugs; development of modern and advanced technology in disease diagnosis, management, prevention and control; other health problems which need further elucidation, and activities on research capacity strengthening. In the HRP of the National Health Plan (NHP) (2006-2011), a total of 1129 research activities had been conducted. They were 308, 139, 237, 61, 180, 129, and 75 research activities on communicable and non-communicable diseases, health system, environmental health, traditional medicine, technology development, and research capability strengthening, respectively. In the conduct of these research activities, monitoring and supervision activities were built in line with the research management system and includes; a) close monitoring by head of divisions, b) three-monthly progress reports, c) six-monthly progress reports, and d) annual reviews. Overall achievement of the HRP was 61.7%. The research activities that have achieved more than 60% of the planned activities are: communicable diseases (67.5%), non-communicable disease (66.6%), traditional medicine (66%), and technology development (65.5%). The main deficiencies encountered in the last plan period were in human and financial resources.

The major research activities could be broadly classified into three areas; a) research on diseases and disorders of prime importance, b) socio-medical research and c) technology development and research capability strengthening. During the last NHP period, the most frequently focused research activities were on TB, malaria, traditional medicine, cancer, dengue haemorrhagic fever, HIV/AIDS, viral hepatitis and CVD. More research studies involving non-communicable diseases such as hypertension, diabetes and cancer are also

needed. Among socio-medical research activities, health systems research was the area most frequently explored followed by reproductive health research.

One of the of Health Research Policy guidelines is to disseminate research findings and application in solving health problems. Dissemination of the results was achieved mainly by presentations at congresses, seminars, conferences and symposia and by publications in national and international journals. Health information is provided to the public through printed and electronic media such as newspaper articles, radio talks and TV programmes. Almost all of the findings of research activities were promulgated to the health and allied profession through the annual health research congresses. *Ad hoc* reports of commissioned research were also presented to the Ministry of Health. However a systematic assessment on the utilization and application of research findings in solving health problems needs to be promoted.

6.7.2 Objectives

6.7.2.1 General Objective

- The general objective of Health Research Programme is to conduct research to solve the health problems of the community and generate evidence for implementation and assessment of NHP.

6.7.2.2 Specific Objectives

- To engage in health system research that can solve the community health problems.
- To generate evidence-based information in guiding the health policy and plans.
- To conduct health research on traditional medicines.
- To strengthen the research capacity and support activities that will complement to the health research development of the country.

6.7.3 Strategies

The following strategies are applied in formulating research projects for the Health Research Programme:

- Conducting research on emerging and re-emerging infectious diseases threatening the health of the country;
- Performing non-communicable diseases research highlighting diseases related to changing life styles;
- Promoting and accomplishing research activities on health systems with special emphasis on health delivery systems;
- Executing research activities on environmental health, highlighting the hazards of environmental pollutants
- Implementing research on traditional medicine underscoring the importance of herbal drugs;
- Carrying out research activities relating to academic and technology development applicable in the diagnosis, management and control of common disease / conditions;
- Strengthening research capacity through development of infrastructure, manpower and human resources, necessary for effective health research

6.7.4 Priority Activities

The following activities will be carried out under the Health Research Programme.

6.7.4.1 **Research on Health Systems Project**

As health systems research has taken a major position in socio-medical research, emphasis is on research activities pertaining to the promotion of health delivery systems, reproductive health, elderly health and adolescent health, economic burden studies, cost-effectiveness of interventions, socio-economic and health consequences of diseases and quality of life assessment studies among others.

6.7.4.2 Research **on Communicable Diseases Project**

Research projects under this heading will include research in emerging and re-emerging infectious diseases threatening the health of the country emphasizing on the three major diseases malaria, tuberculosis and HIV/AIDS. Research activities

will also include those on diarrhea, dysentery, viral hepatitis, arboviral infections and leprosy among others. The outcome of the research findings will contribute in prevention, reduction of disease incidence and case detection and treatment. It will involve molecular studies and emphasis will be on disease surveillance and drug resistance.

6.7.4.3 **Research on Non-communicable Diseases Project**

It will include research studies on non-communicable diseases especially those related to changing lifestyles such as cardiovascular diseases, hypertension, diabetes, nutrition, and tobacco use. Research on cancer and haematological disorders will also be implemented.

6.7.4.4 **Research on Environmental Health Project**

The environment can have an immense impact on the health status of the country. As the hazards of environmental pollution become more and more apparent, carrying out research on environmental health becomes a necessity. Nineteen research activities including those on biological, pharmacological, radiological and chemical agents polluting food, water and air will be implemented.

6.7.4.5 **Research on Traditional Medicine Project**

Traditional medicine especially herbal drugs have taken an important position in solving health problems in Myanmar. There will be 46 research activities on toxicity testing, *in vitro* and *in vivo* evaluation of the safety and efficacy of traditional medicine formulations and herbal drugs, dose-finding studies and clinical evaluation on therapeutic efficacy are anticipated to be implemented under this project.

6.7.4.6 **Research on Academic and Technology Development Project**

Recent advances in medicine have prompted the employment of the latest state of the art technology in the prevention, control, diagnosis and management of common diseases/conditions. Research on immunological, molecular and cytogenetic techniques, studies on biological, biochemical, molecular and markers of diseases, development of diagnostic kits are research activities expected to be accomplished under this project.

6.7.4.7 **Research Capacity Strengthening Project**

The plan of action for 15 activities to be carried out under the research capacity strengthening project encompasses development of infrastructure, human and material resources, improving and upgrading the research supporting services such as library, animal services, instrumentation, publication and information retrieval and dissemination services

6.7.4.8 Information Management Project

It is very critical to be research minded among the health care providers in ensuring the transmission of evidence based information related to disease prevention to the health care recipients. There are altogether 13 such projects planned in all three Medical Research Departments. It includes workshops for young scientists from all departments, research papers reading sessions, conducting research conferences, publishing the findings in research journals and in periodic news release.

6.7.5. Partnerships

Effective cooperation will be engaged with all the Departments within the Ministry of Health and other research institutions, NGOs and Civic Societies within the country and external institutions, UN Agencies and external Partners in Health.

6.7.6. Monitoring and Evaluation

The programme performance and assessment will be monitored as follows:

- Research proposals will be presented to the scientists of all the research divisions for constructive criticism, suggestions and comments.
- Research studies involving human subjects will be reviewed by the departmental ethical committees on medical research for ethical clearance.
- Research projects undertaken by the various research divisions will be monitored and evaluated closely by the head of the divisions;

- Three-monthly progress reports will be prepared and reported to the Ministry of Health;
- Six-monthly progress reports will be prepared and evaluated by the respective directors of research;
- The research projects of the individual divisions and clinical research units will be annually reviewed by the Board of Directors headed by the Director General.
- Evaluation will also be carried out by using the indicator, number of research projects /activities reported (interim/final) per year and the number of research papers presented and published.

6.7.7 Benefits

The research projects included in the Health Research Project will provide immense benefit to the promotion of health in Myanmar. Some of the benefits will bear fruit immediately while some will become evident in time. The benefits garnered from the research projects include:

- Enhancement of knowledge will lead to improvement in the diagnosis, prevention, control and management of emerging and re-emerging communicable diseases of national importance like malaria, tuberculosis and HIV/AIDS.
- Behavioral research on lifestyle changes in Myanmar will elucidate the magnitude of this problem leading to a plethora of non-communicable diseases such as obesity, hypertension, diabetes, vascular diseases, and tobacco use.
- Findings from health systems research studies will be immediately applicable and can be utilized in the health care delivery system of the Ministry of Health.
- Understanding the dangers of environmental pollution will indicate measures to prevent and control the exposure of the population to these avoidable hazards.
- Scientific and evidence-based information resulting from research on traditional medicine and herbal drugs will contribute to the management of health problems in Myanmar.
- Research on academic and technology development will establish locally advanced and modern scientific techniques in the diagnosis and characterization of diseases divesting the need for procurement of expensive supplies from abroad.
- Strengthening the research infrastructure and human resources will uplift the capability of the medical research departments in carrying out research activities in conformity with the guidelines laid down in the National Health Policy.

6.7.8 Projects

The following projects are included in the Health Research Programme:

- Research on Health Policy and Plans
- Research on Communicable Diseases
- Research on Non-communicable Diseases
- Research on Health System
- Research on Environmental Health
- Research on Traditional Medicine
- Research on Academic and Technology Development
- Research Capacity Strengthening

6.7.9 Targets

A total of 324 research studies are to be accomplished during the 5-year plan period, 2011-2016. As many of the projects will be undertaken more than one year, the total number of projects will be 725.

Sr. No.	Objective/ Activity Indicator	Base year (2010-2011)	5 years planning period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
1	Health Policy and Health Systems Research		38	54	45	46	35	**218**
2	Research on communicable diseases		19	30	29	25	21	**124**
3	Research on non-communicable diseases		25	34	24	21	19	**123**
4	Research on environmental health		7	10	11	13	13	**54**
5	Research on traditional medicine		20	18	18	13	11	**80**
6	Research on technology development		13	16	14	12	12	**67**
7	Research on capacity strengthening		10	5	3	3	3	**24**
8	Research on knowledge		7	7	7	7	7	**35**

	management							
Total			**139**	**174**	**151**	**140**	**121**	**725**

6.8 Determinants of Health Programme

6.8.1 Situation Analysis

Health of an individual is determined by his genetic constitution, life style and behavior, condition of the environment in which he is born, lives, grow and work. Health service provision is just of the component of these determinants. With changing life styles following industrialization and mechanization the way most people work and travel require less physical activities. People tend to consume more of readily available food, which may not be good for health, and indulge in use of tobacco and alcohol. This changing situation is followed by deterioration in health with subsequent rise in morbidity and mortality.

As Myanmar relies on an agro-based economy with a step moving forward to industrialization chemicals are now in use for agricultural as well as for industrial purpose. Measures are in need for proper and appropriate production, storage, transport, use and waste disposal to prevent and control health hazards that could follow. Health of workers in growing number of factories and industries following industrial development is also an important factor to be taken into consideration. Health service provision for them needs to extend beyond curative and cover promotive as well as preventive services.

Rapid urbanization, industrialization, inappropriate disposal of waste and growing number of automobiles are now leading to pollution of air and water with subsequent health problems. Rural households have to depend on wood and charcoal as source of energy for cooking, and increasing use of chemical fertilizer and pesticide is also a growing concern. The environmental problems arising from these situations mentioned required wider involvement and collaboration of different sectors and the community. Growing urban population will also require health facilities and infrastructure for their growing and complex health needs.

Availability of safe and quality food and drug is also an important dimension of determinant of health. In accordance with existing legal support the Ministry of Health is now undertaking control activities to ensure production, import, storage, transport and distribution are according to the legally set standards. Involvement of all sectors including law enforcement departments and community is a critical factor for effective implementation.

Rising prevalence of non-communicable diseases is also a growing concern for the country. Changing life style and dietary habits, lack of physical exercises and other health damaging practices need to be modified and controlled. Health education activities are in place using various media and channel. But without understanding the underlying causes of the risk behavior and providing an enabling environment, health education measures alone will not be sufficient. Improving collaboration with all partners concerned play a pivotal role.

6.8.2 Objectives

6.8.2.1 General objective

- To reduce health problems and disease prevalence arising from unhealthy behavior and life styles of the people and to enable them to born, grow and work through their lives in an environment conducive to health

6.8.2.2 Specific objectives

- Promoting activities to reduce occupational risks and hazards
- To prevent deterioration in health of the community through controlling environmental air and water pollution
- To improve coverage of safe water supply and sanitary facilities for the people and to reduce and eliminate diseases arising from unsanitatory water and environment
- To promote development of healthy cities
- To systematically supervise production, transport and distribution of quality and safe food and quality and efficacious drug and to enable the public to consume and use safe and quality drugs, food, commodities and cosmetics
- To raise awareness at the national level, factors underlying gender discrimination and policies and procedures to ensure gender equality
- To control health, social and environmental impact of tobacco use

6.8.3 Strategies

- Educating the public about healthy behaviour and enabling them to practice according to the knowledge
- Controlling health hazards in water, soil and air environment including homes and workplaces and creating environment conducive to health

- Ensuring availability of food, water, drugs and commodities that are safe and beneficial to health
- Raising awareness, providing technical support and conducting research on policies relating to gender discrimination and health and collaborating with related departments and organizations for controlling gender based violence

6.8.4 Priority Actions

- Community based activities for health promoting societies, health education activities reaching the rural populations and strengthening infrastructure and competency for health education
- Conducting at various levels of health facilities, trainings, research and health educational activities for effective enforcement and implementation of laws to control consumption of tobacco and tobacco products
- Controlling pollution of air, water and environment from domestic and industrial wastes
- Sustaining and expanding healthy city projects
- Planning systematically for collaboration among health sector, people involved in production, import and distribution and community to assure quality and safety of food, drugs, medical equipment and commodities
- Promoting trainings and research on gender discrimination and health and activities for controlling gender based violence

6.8.5 Partnership

- Programmes included in the National Health Plan
- Health related ministries
- Local and international non-governmental organizations
- Regional organizations
- Technical experts concerned

6.8.6 Monitoring and Evaluation

- Admission rate per 100 in patients of poison cases

- Prevalence of occupational diseases among workers
- Occupational accidental rates
- Frequency of air and water quality assessment
- Achievement of water and sanitation targets
- Implementation status healthy city projects
  Collaboration status with related sectors for waste management by different levels of hospitals
- Status of monitoring, legal actions taken and educational activities related to safety and quality of health commodities
- Implementation status for infrastructure and activities for quality control of food, drugs and medical equipment
- Implementation status of training workshops and production and distribution of educational materials for developing health promoting societies
- Implementation status of trainings, research and control for gender discrimination and health
- Implementation status of workshops, trainings, opening clinics and research for effective enforcement of tobacco law

6.8.7. Projects to be implemented

- Environmental health programme
- Occupational health and control of industrial hazards programme
- Air and water pollution control programme
- Water and sanitation programme
- Healthy city programme
- Hospital waste management programme
- Food and Drug control programme encompassing consumer protection, food control, drug control and cosmetic control
- Health promotion programme
- Gender discrimination and health programme
- Tobacco control programme

6.8.8Targets

Sr. No	Objective/ Activity Indicator	Base year (2010-2011)	5 years planning period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
Environmental Health Risk Assessment and Control Programme								
1.	National Workshop on Chemical Management	-	✓					**1**
2.	Review, update and amend the existing laws legislations related to health and environment	-	✓	✓	✓	✓	✓	**5**
3.	Awareness Workshop on GHS	-	✓	✓				**2**
4.	Conduct Training Courses Related to GHS	-	✓					**1**
5.	Implementation of GHS related activities	-	✓	✓				**2**
6.	Data Collection on chemical poisoning cases admitted to Civil Hospitals	50	100	150	200	250	300	**1000**
7.	Disseminate health education on chemicals through various media	-	✓	✓	✓	✓	✓	**5**
1.	Collection the list of Factories	Ygn + Mdy	Ygn + Mdy	2	3	3	4	**14**
2.	Factory Inspection	Ygn + Mdy	Ygn + Mdy	2	3	3	4	**14**
3.	Formulating or amending the laws related to the occupational health matters	Nil	Initiate	Imple-ment	Imple-ment			
4.	Occupational Health Training for Medical Officers	-	20	20	20	20	20	**100**
5.	Occupational Health Training for Basic Health Workers	-	20	20	20	20	20	**100**

Sr. No	Objective/ Activity Indicator	Base year (2010-2011)	5 years planning period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
6.	Occupational Health Training for Nurses	-	20	20	20	20	20	**100**
7.	Occupational First Aid Training for Supervisors and Workers	-	20	20	20	20	20	**100**
8.	Occupational Health Training for Supervisors	-	20	20	20	20	20	**100**
9.	Advocacy workshops on occupational health with Industrial Zone Supervisory Committees and Owners	-	Ygn+ Mdy	2	3	3	4	**12**
10.	Occupational Health Training for Workers in Industrial Zones	-	Ygn+ Mdy	2	3	3	4	**12**
11.	Training of medical officers and basic health staff on safe use of pesticides and first aid and prompt treatment on acute poisoning from agrochemicals	-	20	20	20	20	20	**100**
Air and Water Pollution Control Programme								
1.	Training of Basic Health Staff (BHS) on emission inventories		2	2	2	2	2	10
2.	Training of BHS on Air and Water quality Monitoring		2	2	2	2	2	10
3.	Workshop on establishment of air and water standard quality surveillance system		-	1	-	1	-	2
4.	Survey on Air quality monitoring		3	3	3	3	3	15
5.	Survey on Water quality monitoring		3	3	3	3	3	15
6.	Survey on indoor air quality		3	3	3	3	3	15
7.	Survey on waste water quality		3	3	3	3	3	15
8.	Survey on diseases related to air quality (Urban + rural)		1	1	1	1	1	5
9.	Survey on diseases related to water pollution from improper waste water disposal		1	1	1	1	1	5

Sr. No	Objective/ Activity Indicator	Base year (2010-2011)	5 years planning period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
10.	Disseminate health education on air and water pollution through various media (School, Industrial Zones, Stakeholders, communities).		3	3	3	3	3	15
11.	Arsenic Mitigation Project		2	2	2	2	2	10
Community Water Supply and Sanitation								
1	Construction and use of self-help fly-proof latrine	88%	90%	93%	95%	97%	100%	100%
2	Development of Environmental Sanitation Model Villages	17	17	17	17	17	17	85
3	Surveillance of drinking water quality and training for arsenic reduction	13	3	3	3	3	3	15
4	Technical Advice							
5	Post-graduate training	1	12	12	12	12	12	60
6	Construction of RHC/ Sub-centre latrine	1341	50	50	50	50	50	250
7	Water supply for RHC/ Sub-centre latrine							
8	School latrine for the improvement of school health status							
9	Production of IEC							
Healthy City and Urban Health Programme								
1.	Selected Townships	-	2	2	2	2	2	**10**
2.	Advocacy Meetings	-	1	1	1	1	1	**5**
3.	Workshops on Development of plan of actions	-	1	1	1	1	1	**5**
4.	Supervisory Visits	-	2	2	2	2	2	**10**
5.	Development of background materials and IEC	-	1	-	1	-	1	**3**
6.	Domestic tour on Healthy City for partners	-	1	1	1	1	1	**5**
7.	Abroad study tour on Healthy City Project for partners	-	1	1	1	-	-	**3**
8.	Evaluation Meeting	-	1	1	1	1	1	**5**

Sr. No	Objective/ Activity Indicator	Base year (2010-2011)	5 years planning period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
Hospital Waste Management Programme								
1.	Organization of Central Level Hospital Waste Management Committee		✓					1
2.	Advocacy Meeting on Hospital Waste Management at Central Level with authorities and related departments		✓					1
3.	Central Level Workshop on Hospital Waste Management		✓					1
4.	Training of Medical Superintendents on Hospital Waste Management 4.1 Local Training 20 MS x 3 days 4.2 Training Abroad from Occupational Health Division AD MO							
	LAB Technician Hygienist							
5.	Registration of different types of Health Care Settings throughout the country		✓					1
6.	Survey on existing Hospital Waste Management System on - Government Hospitals - Private Hospitals - GP Clinics - Dental Clinics		✓	✓	✓	✓		**1** **1** **1** **1**
7.	Collaboration with DDA, WHO, related departments to implement the segregation, containing and decontamination of							

Sr. No	Objective/ Activity Indicator	Base year (2010-2011)	5 years planning period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	Hospital Waste on							
	- Government Hospitals			✓	✓	✓	✓	**4**
	- Private Hospitals				✓	✓	✓	**3**
	- GP Clinics					✓	✓	**2**
	- Dental Clinics						✓	**1**
8.	Collaboration with related departments to safety disposal of waste water from - Government Hospitals			✓	✓	✓	✓	**4**
	- Private Hospitals				✓	✓	✓	**3**
	- GP Clinics					✓	✓	**2**
	- Dental Clinics						✓	**1**
9.	Implementation of monitoring and evaluation of Hospital Waste Management facilities				✓	✓	✓	**3**
Health Promotion Programme								
1.	Need Assessment Study (pre-study)		1	1	1	1	1	**5**
2.	Developing health messages		1	1	1	1	1	**5**
3.	Conducting Advocacy (15 tsp x 1 time per year)		15	15	15	15	15	**75**
4.	Training of Trainer for BHS (15 tsp per one year)		15	15	15	15	15	**75**
5.	Action plan workshop at village level		15	15	15	15	15	**75**
6.	Monitoring & Supervision		15	15	15	15	15	**75**
7.	Evaluation (post study)		15	15	15	15	15	**75**
Promotion of Healthy Life Style								
1.	Need Assessment Study (pre-study) (To find out health problems, resources. etc.)		1	1	1	1	1	**5**
2.	Developing health messages (according to study findings.)		1	1	1	1	1	**5**
3.	Production of I.E.C materials with developed messages.		1	1	1	1	1	**5**
4.	Distribution of I.E.C materials.		5	5	5	5	5	**25**
5.	Township level Advocacy.		5	5	5	5	5	**25**

Sr. No	Objective/ Activity Indicator	Base year (2010-2011)	5 years planning period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	(Once per tsp).							
6.	Skill building at tsp level (training of trainers BHS).		5	5	5	5	5	**25**
7.	Action plan workshop at ward/village		5	5	5	5	5	**25**
8.	Monitoring / Supervision of Implementation at Community.		5	5	5	5	5	**25**
9.	Evaluation		2	2	2	2	2	**10**
Dissemination of Prime Message of Health to Communities								
1.	Need Assessment(pre-study)		1	1	1	1	1	**5**
2.	Development of Prime Message for Health		1	1	1	1	1	**5**
3.	Conducting Advocacy		10	10	10	10	10	**50**
4.	Training of Trainer for BHS (10 tsp per one year)		10	10	10	10	10	**50**
5.	Workshop for Action Plan at grass root level (10 tsp/year) (once / tsp)		10	10	10	10	10	**50**
6.	Monitoring and Supervision (once / tsp)		10	10	10	10	10	**50**
7.	Evaluation and Post study		10	10	10	10	10	**50**

6.9 Nutrition Programme

6.9.1 Situation Analysis

Adequate nutrition is one of the basic requirements for proper physical growth, intellectual development and a healthy life of every individual. A healthy and well-nourished population is the best and basic foundation for promoting national economic growth and all-round development of a country. Just as the nutritional well-being is an input to the development of a nation, it is also an outcome of the development. Thus a number of indicators related to nutritional status of people are being used in measuring the development of a nation.

Myanmar is self-sufficient in food supply at the national level. Yet, in conjunction with food insecurity at the household level, lack of knowledge about proper nutrition, and prevalence of communicable diseases, a certain proportion of people, especially women and children, are still suffering protein energy malnutrition and micronutrient deficiencies. At the same time, attendant to the changing socio-economic conditions and life styles, diet-related chronic diseases are emerging as a problem, in some sectors of the population. Myanmar has identified five nutrient deficiency states as its major nutrition problems. They include protein energy malnutrition (PEM) and three micronutrient deficiencies, namely, Iodine Deficiency Disorders (IDD), Vitamin A Deficiency (VAD), Iron Deficiency Anaemia (IDA) and Vitamin B_1 Deficiency (VBD).

Protein Energy Malnutrition (PEM)

Multi-indicator Cluster Survey (MICS) 2000 indicated that 35.3% of under-5 children in Myanmar were under-weight, 33.9% were stunted and 9.4% were wasted. In 2003, the same study MICS showed reduction of prevalence of underweight among under-five year old children 31.8%. In addition, 32.2 % were stunted and 8.6% were wasted. The prevalence of Low Birth weight conducted in 1994 showed 24% which was reduced to 10 % in 2004 Study.

Iodine Deficiency Disorders (IDD)

Myanmar has identified iodine deficiency disorders problem since 1896. The problem was found not only in mountainous and hilly areas, but also in plain area where there is flood every year of delta region. Ministry of Health has implemented iodized salt distribution to hilly region in1968. Iodized salt distribution started to dwindle and totally suspended in 1980. In 1982, iodized oil injection project was launched. In 1991 under the guidance of National Health Committee, Central Committee for Elimination of iodine deficiency Disorders was formed and coordination with Ministry of Mine. Universal Salt Iodization (USI) has been adopted as the single, long-term strategy for eliminating iodine deficiency disorders. The production iodized salt increased up to 230,000 metric ton in 2000 from 18,600 metric ton in 1994

Percentage of household consuming iodized salt was 18.5 in 1994, 79.9% in 2000 and 90 % in 2005. Percentage of household consuming adequately iodized salt in 2002 was 65% and 73% in 2005. But it declined in 2006 to 47%. Visible goitre rate (VGR) among school children age between 6-11years was 33.5% in 1994 which was reduced to 5.5% in 2004 and 2005. In 2006 study, VGR has reached to non public health problem i.e 2%. Urinary excretion of iodine among 6-11yrs old school children in 2000 was 136 µg/l, 205 µg/l in 2004. In 2006 study it was 132 µg/l.

Vitamin A Deficiency (VAD)

Vitamin A deficiency used to be a public health problem among Myanmar children during the early 1990s. But prevalence of Bitot's spot among under-5 children has dropped rapidly from 0.6% in 1991 to 0.38% in 1994 and 0.23% in 1997. Thanks to the introduction of regular supplementation with high potency vitamin A capsules in 1993. The last xerophthalmia survey in the year 2000 revealed that the prevalence of Bitot's spot among under-5 children was 0.03% in both urban and rural communities, far below the cut-off level of the public health problem, which is 0.5%. Assessment of serum vitamin A status of a sub-

sample of children in the survey of 2000 indicated that all children in the rural community and 96% of urban children had normal serum vitamin A status while only 4% of the urban children had mild sub-clinical deficiency.

Iron Deficiency Anaemia (IDA)

The prevalence of anaemia among pregnant women was 58% in 1994 and 30% among preschool children according to a survey by the DMR. The National Nutrition Centre of the DOH conducted very recently, in 2001, a survey on haemoglobin status of non-pregnant women between 15 and 45 years of age. According to that survey, prevalence of anaemia among non-pregnant women was 45%. The prevalence among adolescence school girls was 26% in 2002. In 2003 the anemia prevalence study was conducted again in which showed 71 % of pregnant women were anemic. In the year, the prevalence of anemia among under-five children was 76%.

Worm infestation study among school children in 2003 showed that 30.8% of under-five children, 44.3% of pregnant women and 45 % of 15-45 reproductive women had worm. The prevalence was more common in delta region and coastal region. The study found that inadequate intake of iron rich food, lack of practice to improve cooking to increase absorption of iron from gastrointestinal tract and worm infestation were major causes of anemia.

Beri Beri

Since 1997, National Nutrition centre and Department of Medical Research (Lower Myanmar) found that 12.9% percent of pregnant women and lactation women of Kayan township of Yangon Division suffered Vitamin B 1 deficiency. Based on the records of Yangon Children Hospital 14.6% admitted to that hospital was infantile Beri Beri (vitamin B1 deficiency among children under one year of age). Findings from the hospital-based cross-sectional study at the Yangon Children Hospital in 2002 showed that breast milk thiamin levels of mother with clinically diagnosed Infantile Beri Beri were lower than those of controls (8.6+4.4 vs 10.35+6.26 ug/dl). Higher percent of them also had the habit of food avoidance (particularly of thiamine rich foods) during pregnancy and lactation than the controls (10.8% vs 2.0%).

According to 2002 study, Breast milk of mothers of infantile Beri Beri patients was vitamin B1 deficient than normal healthy mothers. Among 43.1% of mothers of infantile Beri Beri children and 10.8 % of mothers of healthy children have wrong food beliefs. Under-five Mortality survey (2003) indicated that 73% of child deaths were within 0-11 months. Beriberi ranks 5th leading cause with 7.12 % of post neonatal deaths. For children under six months, deaths due to Beriberi were nearly 9%.

Over-nutrition and obesity

Information on over-nutrition and obesity among Myanmar people is scanty. The National Nutrition Centre examined the body mass index (BMI) of 3828 fathers and 5504 mothers of under-5 children in the year 2000. It was found out that 4.5% of mothers and 7.5% of fathers were over-weight (BMI 25-29.9), while 0.7% of fathers and 1.8% of mothers were obese (BMI>=30).

6.9.2 Objectives

General objective:

- To enable Myanmar citizens to attain nutritional status this will contribute to full life expectancy and longevity

Specific objectives

- To reduce protein energy malnutrition (PEM) among under-5 children.
- To eliminate iodine deficiency as a public health problem.
- To maintain the virtually eliminated state of vitamin A deficiency among children and to promote a good vitamin A status in all vulnerable groups.
- To reduce iron deficiency anaemia among women, adolescent girls and children.
- To reduce prevalence of Beri Beri among infants as it was one of the causes of U5MR
- To prevent emergence of over-nutrition and diet-related chronic diseases as a public health problem.
- To improve nutrition care for the elderly
- To disseminate nutrition information and education to the entire population so as to enable all citizens to develop proper food practices.
- To ensure better nutritional status through household food security

6.9.3 Strategies

- Community involvement in nutrition activities.
- Nutrient supplementation
- Food fortification
- Nutrition education
- Intersectoral cooperation

6.9.4 Priority Actions

- Nutrition Promotion
- Nutrition surveillance
- Study of micro-nutrient deficiency
- Training and education
- Laboratory services for nutrition
- Study for food fortification
- Production and capacity building of nutritionist

6.9.5 Partnership

- Ministry of Mines
- Ministry of Education
- Ministry of Information
- Ministry of Transport
- Ministry of Communication, Post and Tele-communication
- Ministry of Home Affairs
- Local and International Non Governmental Organizations
- United Nation Organizations
- Programmes included in the National Health Plan

6.9.6 Monitoring and Evaluation.

The performance of the programme will be monitored assessed through the following steps and indicators:

- Nutrition activities at village level will be continuously supervised and monitored by township medical officers, regularly supervised by State and Division Nutrition Team members. Yearly evaluation will be held at township level.
- Township level Nutrition activities will be continuously supervised and monitored by State and Division Nutrition Teams concerned and by medical officers from National Nutrition Centre.
- Process evaluation of nutrition programme will be done through-
- Reports from Nutrition sentinel townships.
- Annual evaluation meeting of sentinel townships.
- Annual review meeting of State and Division Nutrition Team.
- Annual Community Health Care Evaluation.
- Health Management Information System (HMIS) reports.
- Reports of existing nutrition projects.

Impact evaluation will be conducted by reviewing

- Nutrition reports from Sentinel townships.
- Annual evaluation of Community Health Care programme
- Health Management Information System reports.
- Finding from supervisory tours and surveys.

6.9.7 Projects

The programme area comprised of the following rojects:

- Prevention of Protein Energy Malnutrition
- Elimination of Iodine Deficiency Disorders
- Elimination of Vitamin A Deficiency
- Prevention of Iron Deficiency Anaemias
- Prevention of Vitamin B1 deficiency
- Control of Obesity due to over nutrition
- Elderly care
- Household food security

6.9.8 Targets

No.	Particular	Basic Year	5 Year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
1	**Protein Energy Malnutrition**							
1	Prevalence of protein energy malnutrition among under 5 children (WFA <2SD, NCHS)	31	29	27	26	25	24	**<25%**
2	Prevalence of underweight newborn	8.6	8.4	8.2	8.0	7.8	7.6	**<7.7%**
3		23.6	25	30	35	40	45	**≥40%**
4		80.9	82	84	86	88	90	
5	Breast feeding up to 2 years	65.4	66	68	70	72	75	
2	**Iodine Deficiency**							
1	Visible goiter rate among 6-11 years school children	2	-	-	-	-	-	**<5%**
2	Median urinary Iodine (µg/dl)	123	100-200	100-200	100-200	100-200	100-200	100-200
3	Median urinary iodine values (< 100 µg/dl)	34.38	30	30	30	30	30	**<30%**
4	Median urinary iodine values (< 50 µg/dl)	8.26	8	8	8	8	8	**<20%**
5	Adequately iodized salt consumption rate	47	57	67	77	87	97	**>90%**
3	**Vitamin A Deficiency**							
1	Prevalence of Bitot's spot among children of age (6-71 month)	0.03	0.03	0.03	0.03	0.03	0.03	**<0.05**
2	Prevalence of Serum retinol levels ≤ 0.7µmol/L among 6-71 month of age	<5	<5	<5	<5	<5	<5	<5
3	Prevalence of Cataract in children of 24-71 month of age	-	<1	<1	<1	<1	<1	<1
4	**Iron Deficiency Anemia**							
1	Prevalence of anemia among children of age 6-59 month	75	75	70	65	60	55	
2	Prevalence of anemia among children of age 5-11 year	26	25	24	23	22	20	
3	Prevalence of anemia among female	26.4	26	25	24	22	20	

No.	Particular	Basic Year	5 Year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	student of 12-16 year of age							
4	Prevalence of anemia among non-pregnant women	45	40	35	30	25	20	<30%
5	Prevalence of anemia among pregnant women	71	67	63	59	55	51	<60%
6	Prevalence of worm infestation among children	30.8	30	28	26	24	22	<25%
5	**Vitamin B1 Deficiency**							
1	Vitamin B 1 Deficiency among pregnant women and breast feeding women	5.6	5.5	5.4	5.2	5.1	5.0	<5%
2	Prevalence of under 1 child mortality due to Vitamin B1 deficiency	7.1	6.8	6.6	6.4	6.2	6.0	<6%
6	**Household Food Security**							
1	Malnutrition (%)	30	29	27	25	23	21	
2	Prevalence of protein energy malnutrition among under 5 children (%) (WFA<-2SD, NCHS)	31	29	27	26	25	24	<25%
3	Capacity Building of Nutritionists (Training)	-	1	1	1	1	1	5
4	Production of Nutritionists (Number) (a)Dietician (b) Nutritionist	 - 15	 5 2	 5 2	 5 2	 5 2	 5 2	 25 25

6.10 Health Systems Development Programme

6.10.1 Situation Analysis

Health systems are the means whereby many of the health services and interventions are delivered. They have crucial influence on addressing disease burden and improving overall health levels of population and the health of particular groups. To improve the health of a nation, development of health systems is essential for effective health interventions and to keep abreast with the changing global trends of disease burden. Health systems research (HSR) is a reliable and scientific tool to generate information for decision makers on how health systems are functioning and understanding interactions between health systems and environmental factors. Understanding health systems and how they can be changed is essential for development of more effective health system. So HSR should be used as a tool for development of health system.

Many health systems around the world have to face enormous challenges when they carry out their functions. Likewise, Myanmar health systems encounter a number of issues in achieving their goals. A more solid knowledge and evidence base is needed to solve the issues in the planning, production and management of health workforce in the country. Priority research areas in health workforce are optimal size, optimal skill mix, using incentives to improve performance and retaining health workers in the remote areas and their mobility. There are also a number of unanswered research questions to deal with the issues of financing. Routine monitoring of key health system outcomes such as access to health services, catastrophic health expenditures and impoverishment due to huge out of pocket payments should be measured. Community participation in the payment of health such as user fees, exemption and co-payment mechanisms should be explored. Furthermore, current financing-schemes should be evaluated to obtain information of equitable and universal coverage.

Research needs in the area of health information are development of "core metrics" to monitor the status and capacity of health systems at national and sub-national levels with special attention given to equity. One of the effective approaches in this area to explore is Service Availability Mapping (SAM) which is based on a rapid assessment tool administered

through district health management teams that generates a visual representation of disparities in service provision between and within districts. There is also a need to monitor the Millennium Development Goals (MDGs) to know whether the country's indicator trends are on track or not. For this research and development efforts are necessary to promote better measurement of health related MDGs and related indicators. Health systems research should also link with the dedicated global alliance "The Health Metrics Network" which aims to increase the availability and use of timely and accurate health information at sub-national, national and global levels. Last agenda of the health information systems is research on improving data quality in various aspects.

At the present time, little is known about how to scale up health services rapidly in the face of urgent health problems and to integrate vertical or single-disease programme into the broader health system. More information is also required to deliver cost-effective services through relevant organizations. Dealing with populations with special needs such as dispersed rural populations, populations of urban slums, populations with stigmas also call for health systems research and health research systems to generate information useful to improve coverage and effectiveness of services aimed to them. More research should be conducted to find ways of helping health workers to make sure patients with deadly diseases such as TB, HIV and malaria etc. are taking medicines. One of the most important challenges of health systems which need enormous research effort is quality assurance. This area should be stressed in performing research in the future.

The states in most developing countries have been trying to fulfil health care needs of their poor population with available budgetary support for health care services. Adequate and sustainable financial support is a vital requirement for providing health services with the objective of raising the health status of the people. Universal coverage, which is one of the objectives of all health care systems, implies *equity of access* and *financial risk protection*. It is also based on the notion of equity in financing, i.e. that people contribute on the basis of ability to pay rather than according to whether they fall ill. It is also important that available financial resources are spent efficiently. With growing population, advancing health care technologies and rising costs consequent to inflation, even sustaining the existing level of health service provision requires more financial resources. Expanding health services to attain universal coverage will inevitably require increasing health expenditure further. In

looking for mechanisms to finance health following the National Health Policy to explore and develop alternative health care financing system, financial adequacy and sustainability, equity and efficiency are the essential criteria to judge the alternatives available.

With expansion of health services to cover the whole country not excluding border areas more financial resources will be required and it is necessary to explore means to cover this additional financial requirement. In exploring and implementing alternative means for financing health in conformity with the national health policy, user fees have been collected on cost sharing basis. For the indigents exemption mechanism is in place with establishment of trust funds in these hospitals. Based on household income and expenditures surveys conducted in the country it is estimated that households are spending 2%-3% of total household expenditure on health. It is also estimated that 80% of health expenditure are from household almost entirely out of pocket spending with consequent financial burden for the households. With economic development of the country individual and household income will also be rising and establishing a prepayment scheme with pooling of the revenue will provide more financial resources for health and at the same time protect households from financial burden following health care. In exploring alternative mechanisms for financing health and allocating the collected revenue efficiently in line with changing economic and social conditions of the country it is essential that basic and policy relevant information are available. It will be necessary to develop and institutionalize National Health Accounts in the country.

For an effective health care system, it is essential to have comprehensive health management information system (HMIS). It is vital for health development of a country as relevant information enables management to arrive at sound decisions and judgments. It is a major tool in management of the integrated health services and is one of the managerial processes for national health development. In this contemporary situation, annual evaluation of HMIS was performed at all levels in townships, State/Division and Central level. Although there is improvement in data validity and reliability in collected information, data completeness problems are still existed in some townships. At the same time, in order to work out the above problems, pilot testing of Computer applied Public Health Information System has performed in some selected townships in few districts by utilizing advanced modern technology. It is to sustain from a pivotal role in computing

country's health related indicators while depicting national health plans and projects and to analyze health status improvement and declination provincially or throughout the nation and in prioritizing health problems and formulating localized micro-planning in the basic unit, sub-centre (village) level to national planning at the central level. Similarly hospital statistics also plays a crucial role for hospital care in relation with patient records, availability of equipment and drug resources.

Health information plays a vital role in the development of present and future health care system. Establishing of health information network (Internet) could bring out many benefits, so that health information could be exchanged and evaluated between ministry of health and its departments, timely correction the information can be made and direction and instruction can be given within short period, the health care service programmes can be implemented and continuous surveillance can enable to undertake control and preventive measures effectively. In the Ministry of Health, the central source of information with the use of Internet, Intranet and e-mail is required to fulfil the needs of health planners, implementers of health activities, experts in medical research or medical science. The central source could help them to achieve their aims and objectives effectively and immediately. Computer Network has been established in NayPyiTaw using ICT. After establishing this computer network system, any place could be informed and message sent on internet either locally or aboard. Through this network of internet health information and facts of hospital can be accessed without any delay. National health information could also be accessed through Intranet Servers. With introduction and utilization of Medical Record System at Hospitals and Teaching Hospitals of state and divisions, the inpatient records and information data could be sent successfully to the head quarter.

International Public Health is defined as application of public health principles to health problems and challenges that transcend national boundaries and to the complex array of global and local forces that affect them. These global forces include urbanization, migration, information explosion, and expanding global markets. To mitigate the negative impact of these global forces which affect or threatens the health status of a nation the roles of national, regional, international and intergovernmental development agencies as well as the non-governmental and private voluntary agencies cannot be ignored. Role of International Health has become more important than ever in era of technological development and

changing trends in Medical Sciences. The International Health Division (IHD) of the Ministry of Health plays a pivotal role in co ordination of all international health activities of Myanmar. As Myanmar continues to embark programmes for holistic national development and promoting the quality of life of the people to achieve the aim for the emergence of a peaceful, modern and developed nation improvement of international health collaboration is an essential component in this globalized world. Close collaboration with international organizations not only in the field of health but also in the economic, trade and social sectors are necessary to promote all round health development of the people. Ministry of Health has been coordinating with (30) International Non Governmental Organizations (INGOs) and (6) Organizations of the UN systems, Bi-lateral Agencies and International Institutions.

6.10.2 Objectives

General Objective

- The general objective of health systems development program is to strengthen the health system in line with the changing political and socioeconomic dimensions and technology.
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Specific Objectives

- To develop a comprehensive health policy and adopt necessary health regulation for an effective implementation of health plans;
- To explore and develop an appropriate and sustainable financing mechanism for fair financing of health and equitable delivery of services;
- To coordinate for development of comprehensive National Strategic Plan for Health Information System in Myanmar.
- To expand and strengthen international co-operation in line with the 30 year long term health plan by collaborative activities

6.10.3 Strategies

- Adoption of health policy and plans for implementation.
- Promotion of sectoral collaboration in fair financial contribution for health and further promotion of collaboration and contribution of community in fair financing of health.
- Promoting the quality of health information using modern information technology and ensuring timely and effective utilization of health information.
- Coordination with Multi-lateral and bilateral partners for further development in health.
- Explore measures for further strengthening of township level health activities

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6.10.4 Priority Activities

- Promotion of sectoral collaboration in financing health
- Promotion of collaboration and contribution by community in financing health
- Promoting role of private sector and non-governmental organizations in financing health services in conformity with rules and regulations;
- Conduct HSR studies involving decision-makers, health service providers and community;

6.10.5 Partnerships

The programme will cooperate closely with all other projects under the National Health Plan and also with relevant other Ministries. It will also be coordinating with internal and external NGOs, Civic Societies, UN Agencies and with Regional Countries.

6.10.6 Monitoring and Evaluation

- Generate evidence based information in assessing the health policy and health regulation;
- Disseminate such findings to relevant staff involved in the development of health policy and health regulation;
- Promote the skill of staff members in developing health policy and health regulation;
- Promote skill of staff members in health financing, resource allocation and optimal utilization of resources.
- Promote skill of staff members in health information system and its strategies;

- Development of local area network and information sharing;
- Impact indicators and health assessment;
- Comprehensive Township Health Development plan and its implementation.

6.10.7 Projects to be implemented

- Health Systems Research and Development Project
- Developing Alternative Financing Mechanisms for Health Project
- International Health Cooperation Project

6.10.8 Targets

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	Leadership and Management on Health Programme							
1.	Forming the National Health Policy and Health Legislative body	-	✓					✓
2.	Revising the existing Health Policy and Strategies	-	✓	✓	✓	✓	✓	✓
3.	Advising on new Health Policy	-	-	✓	-	-	✓	
4.	Dissemination of health policies	-	✓	-	-	-	✓	
5.	Promoting policy analytical capacity	-	-	1	-	-	1	**2**
	Developing Alternative Health Financing and exploring effectively							
1.	Developing National Health Accounts and distributing	1	1	-	1	-	1	**3**
2.	Workshop/ training on Township Level Health Financing Management	1	1	1	1	1	1	**5**
3.	Feasibility study on Maternal and Child Health Voucher Scheme	-	-	✓ Yaedar shae Tsp	-	✓	-	**2**
4.	Training on Health Financing Mechanisms (Costing Tool)							
5.	Feasibility study on Township Based Health Protection Mechanism	-	-	✓ Daik-U	-	✓	-	**2**
6.	Developing Emergency Referral Fund for poor mother and child	-	-	20	40	60	60	**180**

6.11 Expanding Health Care Coverage in Rural, Peri-Urban and Border Area Health using

Primary Health Care Approach

6.11.1 Situation Analysis

In conformity with the one of the policy objectives of the National Health Policy to extend health services to the border areas in addition to the rural areas, efforts have been made for improving health care coverage and raising health status of the rural population with the aim of narrowing the health gap between urban and rural. Rural health scheme had been initiated since the early 1950s and the momentum was increased in 2001. Compared with the urban population, high infant and maternal mortality with low life expectancy in rural population were the visible health gaps between the two. Notwithstanding the expansion of health facilities in rural area with the objective of improving access to primary health care and quality services, achieving the ratio of one rural health centre to 20,000 rural population and one sub-rural health centre to 4000 population remains a challenge because of growing population. During the period of implementing the National Health Plan (2006-2011) only 102 new rural health centres could be expanded although the target was to build 60 new rural health centres and 300 new sub-centres annually for the five year period. As of April 2011, there were only one rural health centre for 26567 rural population and one sub-centre for 5820 rural population. On the average, one health assistant had to look after 23828 population, one lady health visitor- 23925 population, one midwife-4462 population and one public health supervisor grade (2)-25285 population. One rural health centre had to take care of 42 villages where one sub-centre had to cover up to 9 villages.

Since 1989 border area development programme has been initiated to improve the overall situation including health for the national races and population residing in the border area. Various levels of committees for implementing activities for development of national races and border have been formed. With achievement of peace and stability in these areas more health infrastructures and health staff could be provided. Although the health development activities could cover only curative services initially, more comprehensive care applying primary health care approach can now be provided.

With changing economic policy and certain extent of industrial development rural to urban migration for seeking job and economic opportunities is another phenomenon raising health

issues particularly in the peri-urban areas. Having no better choice these migrants have to live in sub standard dwelling in places which are overcrowded with poor environmental situation. In addition to the need for expanding health service coverage for the rural population and for those in the border area, health sector is now facing another challenge for providing equitable access to health care for the entire population. Current cycle of the National Health Plan will have to take into consideration provision of basic and essential health services for the peri-urban population.

6.11.2 Objectives

General objective

- To improve the health status in rural, peri-urban and border areas

Specific objective

- To improve health service coverage in rural area and to improve access to quality health care
- To improve health service coverage for national races in border area and to improve access to quality health care
- To improve access to quality basic and primary health care for people living in peri-urban areas

6.11.3 Strategies

- Improving coverage of quality health care in rural and border area using primary health care approach
- Improving referral system

6.11.4 Priority Actions

- Expanding and reorganization of health facilities and infrastructures
- Filling vacant posts and expansion strength of health staff
- Improving capacity of basic health staff
- Strengthening supportive supervision, regular monitoring and review mechanism
- Supplying medicine and equipment as required
- Improving patient referral system

6.11.5 Partnership

- Programmes included in the National Health Plan
- Ministry of Border Affairs
- Ministry of Livestock Breeding and Marine Product
- Other related ministries
- Working committee for development of border area and national races
- WHO, UNICEF and other UN Organizations
- Local and international non-governmental organizations

6.11.6 Monitoring and Evaluation

The performance of the programme will be monitored and assessed with the following indicators:

- Rural health centre and rural population ratio
- Basic health staff and rural population ratio
- Rural health centre and village ratio
- Number of borer hospitals and rural health centre newly opened or upgraded
- Urban health centre and urban population ratio
- Maternal and child health centre and urban population ratio

6.11.7 Projects to be implemented

- Rural health development project
- Primary health care and Management Effectiveness Programme at Township Level
- Border area health project
- Peri-urban health project
- Community health nursing project

6.11.8 Targets

No.	Activities	Base Year 2010-2011	5 year Plan Period					Total
			2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	
	Rural Health Development							
1.	Expansion of RHCs (number)	1588	60	60	60	60	60	**300**
2.	Expansion of Sub-rural health centers (number)	7111	240	240	240	240	240	**1200**
3.	Deployment of BHS to full strength in RHC							
	- Health Assistants		60	60	60	60	60	**300**
	- Lady Health Visitors		60	60	60	60	60	**300**
	- Midwives		300	300	300	300	300	**1500**
	- Public Health Supervisors (2)		300	300	300	300	300	**1500**
4.	Requirement of RHC kits		60	60	60	60	60	**300**
5.	Requirement of HA kits		60	60	60	60	60	**300**
6.	Requirement of LHV kits		60	60	60	60	60	**300**
7.	Requirement of MW kits		300	300	300	300	300	**1500**
8.	Requirement of PHS (2) kits		300	300	300	300	300	**1500**
9.	Recruitment of new CHWs (no.)		1000	1000	1000	1000	1000	**5000**
10.	Conducting refresher courses to existing CHWs		1000	1000	1000	1000	1000	**5000**
11.	Requirement of CHW kits		1000	1000	1000	1000	1000	**5000**

Peri –urban Health.								
1.	Expansion of Urban Health Center (number)	86	5	5	5	5	5	**25**
2.	Deployment of full staff in urban health center							
	- Medical doctors		10	10	10	10	10	**50**
	- Dental Surgeon		5	5	5	5	5	**25**
	- Staff nurse		5	5	5	5	5	**25**
	- Trained nurse		5	5	5	5	5	**25**
	- LHV		5	5	5	5	5	**25**
	- PHS (1)		5	5	5	5	5	**25**
	- MW		5	5	5	5	5	**25**
	- PHS (2)		5	5	5	5	5	**25**
	- Lab Tech grade (2)		5	5	5	5	5	**25**
3.	Capacity development of BHS		100	100	100	100	100	**500**
	Refresher training of HA		100	100	100	100	100	**500**
	Management training of HA (1)							
	Management Effectiveness Programme training at township level		6	6	6	6	6	**30**
4.	Group observation visit of outstanding BHS and VHW		1	1	1	1	1	**5**
5.	Evaluation of Community Health Care Programme		1	1	1	1	1	**5**

	Border Area Health							
1.	Upgrading of Hospitals		1	1	1	1	1	**5**
	(a) 16 bedded		-	1	-	-	1	**2**
	(b) 25 bedded		-	1	-	-	-	**1**
	(c) 50 bedded		-	-	-	-	1	**1**
	(d) 100 bedded		-	-	1	-	-	**1**
2.	New Hospitals		1	1	1	1	1	**5**
	(a) 16 bedded		1	-	1	-	1	**3**
	(b) 25 bedded		-	-	-	1	-	**1**
	(c) 50 bedded		-	-	1	-	-	**1**
3.	Upgrading Dispensary of to Rural Health Center		2	2	2	2	2	**10**
4.	New Dispensary		2	2	2	2	2	**10**
5.	Upgrading of Sub-center to Rural Health Center		1	1	1	1	1	**5**
6.	New Sub-center		5	5	5	5	5	**25**

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Acronyms and Abbreviations

3DF	3 Diseases Fund
AFP	Acute flaccid paralysis
AI	Avian Influenza
AMW	Auxiliary midwife
ART	Anti-retroviral therapy
ARV	Antiretroviral
BHS	Basic Health Staff
CEU	Central Epidemiological Unit
CNR	case-notification rate
CSO	Central Statistical Organization
CVD	Cardiovascular disease
DOH	Department of Health
DOTS	Directly Observed Treatment Short-course (for tuberculosis)
DST	Drug Sensitivity Test
EC	European Commission
ECE	Early Childhood Education
EPI	Expanded Programme on Immunization
GDP	Gross Domestic Product
GF	Global Fund against AIDS, Tuberculosis and Malaria
GAVI	Global Alliance for Vaccines and Immunization
GMP	Good manufacturing practices
GSM	Global Management System
HA	Health Assistant
HMIS System	Health Management Information
HIV/AIDS	Human immunodeficiency virus/acquired Immunodeficiency syndrome
ICC	Interagency Coordination Committee (for GAVI)
ICD-10	International Statistical Classification of Diseases
IEC	information education and communication
INGO	International Non-Governmental Organization
IMMCI	Integrated management of maternal and childhood illness
IHLCA Condition	Integrated Household Living Assessment
IHR	International Health Regulations
IDD	iodine deficiency disorders
IMR	Infant Mortality Rate
IDA	Iron deficiency disorder
JICA	Japan International Cooperation Agency
LHV	Lady Health Visitor
LCS	local cost subsidy
MDR-TB	Multi-drug resistant tuberculosis
MEP	Management Effectiveness Programme
MW	Midwife
MNPED	Ministry of National Planning, Economic And Development
MOH	Ministry of Health
MoU	Memorandum of Understanding
MICS	Multiple indicator cluster survey
MMCWA Welfare	Myanmar Maternal and Child Association
MDGs	Millennium Development Goals
MRCS	Myanmar Red Cross Society
NAP	National AIDS Programme
NEQAS	National External Quality Assessment Scheme
NCDs	Non-communicable diseases
NGO	Non-Governmental Organization
NIPPP	National Influenza Pandemic Preparedness Plan
NMR	Neonatal Mortality Rate
NSP	National Strategic Plan
NSS	New sputum smear
NTP	National Tuberculosis Programme
ODA	Official Development Assistance
PMCT	Prevention of Mother-to-child transmission
PHC	Primary Health Care
PEM	Protein energy malnutrition
PHS	Public Health Supervisor
RHCs	Rural Health Centers
TB	Tuberculosis
TMO	Township Medical Officer
VPD	Vaccine Preventable Diseases
WCO	WHO Country Office