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The Republic of the Union of Myanmar Health System Review

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Preface

The Health Systems in Transition (HiT) profiles are country-based reports that provide a detailed description of a health system and of reform and policy initiatives in progress or under development in a specific country. Each profile is produced by country experts in collaboration with an international editor. In order to facilitate comparisons between countries, the profiles are based on a template, which is revised periodically. The template provides detailed guidelines and specific questions, definitions and examples needed to compile a profile.

A HiT seeks to provide relevant information to support policy-makers and analysis in the development of health systems. This can be used:

- to learn in detail about different approaches to the organization, financing and delivery of health services and the role of the main actors in health systems;
- to describe the institutional framework, process, content and implementation of health care reform programmes;
- to highlight challenges and areas that require more in-depth analysis;
- to provide a tool for the dissemination of information on health systems and the exchange of experiences between policy-makers and analysts in different countries implementing reform strategies; and
- to assist other researchers in more in-depth comparative health policy analysis.

Compiling the profiles poses a number of methodological problems. In many countries, there is relatively little information available on the health system and the impact of reforms. Because of the lack of a uniform data source, quantitative data on health services in Myanmar are based on a number of sources – the World Health Organization, United Nations Children's Fund, The World Bank, Asian Development Bank, Central Statistical Office of the Ministry of National Planning and Economic Development, Myanmar Information Management Unit website, and other relevant sources considered applicable to Myanmar's context.

The HiT profiles can be used to inform policy-makers about the experiences in other countries that may be relevant to their own national situation. They can also be used to inform comparative analyses of health systems. This series is an ongoing initiative and material is updated at regular intervals. In-between the complete renewals of a HiT, the APO has put in place a mechanism to update sections of the published HiTs, which are called the "Living HiTs" series. This approach of regularly updating a country's HiT ensures its continued relevance to the member countries of the region.

Comments and suggestions for the further development and improvement of the HiT series are most welcome and can be sent to apobservatory@wpro.who.int. HiT profiles and HiT summaries for Asia Pacific countries are available on the Observatory's website at http://www.wpro.who.int/asia_pacific_observatory/en/.

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List of abbreviations

3DF	Three Diseases Fund
3MDG	Three Millennium Development Goals
ACT	artemisinin-based combination therapy
ADB	Asian Development Bank
ADR	adverse drug reaction
AIDS	Acquired Immune Deficiency Syndrome
AMW	Auxiliary Midwife
APO	Asia Pacific Observatory on Health Systems and Policies (WHO)
AQM	air quality monitoring
ART	Anti-retroviral Therapy
ASDL	asymmetric digital subscriber line
ASEAN	Association of Southeast Asian Nations
ASV	anti-snake venom
AusAID	Australian Agency for International Development
BAC	blood alcohol concentration
BCG	bacille Calmette–Guérin
BComH	Bachelor of Community Health
BCP	Burma Communist Party
BHS	Basic Health Staff
BMI	body mass index
BNSc	Bachelor of Nursing Science
BOD	burden of disease
BS	Bachelor of science
BSPP	Burma Socialist Programme Party
CBO	community-based organization
CCDAC	Central Committee for Drug Abuse Control
CCM	Country Coordination Mechanism
CCS	Community Cost Sharing
CD	communicable disease

CDC	Center for Disease Control and Prevention
CDMA	code division multiple access
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CEU	Central Epidemiology Unit
CHIP	Country Health Information Profile
CHP	Country Health Programming
CHW	Community Health Worker
CI	confidence interval
CLTS	Community Led Total Sanitation
CMSD	Central Medical Store Depot
COIA	Commission on Information Accountability
CPD	continuing professional development
CPR	Contraceptive prevalence rate
CRC	Convention on the Rights of the Child
CSO	Central Statistical Organization
CSR	Corporate Social Responsibility
DAC	Drug Advisory Committee
DALE	disability-adjusted life expectancy
DALY	disability-adjusted life years
DFID	Department for International Development
DHP	Department of Health Planning
DMR	Department of Medical Research
DMS	Department of Medical Science
DOH	Department of Health
DOTS	Directly Observed Treatment Short Course
DPT	diphtheria–pertussis–tetanus vaccine
DSMA	Defence Services Medical Academy
DTC	Drug Treatment Centre
DTM	Department of Traditional Medicine
DUNS	Diseases Under National Surveillance
EENT	Eye, Ear, Nose and Throat
EM	Emergency Medicine
EmD	Emergency Department
EMS	emergency medical service
ENT	ear, nose and throat

EPEC	entero-pathogenic Escerichia coli
EPI	Expanded Programme for Immunization
ESD	Environmental Sanitation Division
EU	European Union
EWARS	early warning, alert and response system
FAC	Food Advisory Committee
FAO	Food and Agricultural Organization of the United Nations
FCTC	Framework Convention on Tobacco Control
FDA	Food and Drug Administration
FDI	Foreign Direct Investment
FDSC	Food and Drug Supervisory Committee
FESR	Framework of Economic and Social Reforms
FETN	Field Epidemiology Training Network
FETP	Field Epidemiology Training Program
FFS	fee for service
FIL	Foreign Investment Law
FINNIDA	Finnish International Development Agency
FSW	female sex worker
GAVI	Global Alliance for Vaccine Initiative
GBD	Global Burden of Diseases
GDP	gross domestic product
GFATM	Global Fund for HIV/AIDS, TB and Malaria
GGE	general government expenditure
GGHE	general government health expenditure
Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
GMP	good manufacturing practice
GMS	Greater Mekong Subregion
GP	general practitioner
GSM	Global System for Mobile Communications
HA	Health Assistant
HALE	Healthy Life Expectancy
HbV	Hepatitis B vaccine
HC	health centre
HDI	Human Development Index
HFA	Health for All

Hib	Haemophilus influenzae serotype b
HIV	Human Immune-deficiency Virus
HMIS	Health Management Information System
HRH	human resources for health
HW	health worker
ICRC	International Committee of Red Cross and Red Crescent Societies
IDU	injecting drug user
IHC	Integrated HIV Care
IHLCS	Integrated Household Living Conditions Survey
IHP+	International Health Partnership
IHR	International Health Regulation(s)
ILO	International Labour Organization
IMF	International Monetary Fund
IMR	Infant Mortality Rate
INGO	international nongovernmental organization
IRI	Intensification of Routine Immunization
ITN	Insecticide Treated Net
JICA	Japan International Cooperation Agency
JIMNCH	Joint Initiative for Maternal, Newborn and Child Health
JNSP	Joint Nutrition Support Programme (WHO/UNICEF)
LHV	lady health visitor
LLIN	long-lasting impregnated bed-nets
MAMS	Myanmar Academy of Medical Science
MARC	Artemisinin Resistance Containment in Myanmar
MB	Bachelor of medicine
MBDS	Mekong Basin Disease Surveillance
M-CCM	Myanmar Country Coordinating Mechanism
MCDF	Myanmar Development Cooperation Forum
MCH	Maternal and Child Health
MDA	Myanmar Dental Association
MDC	Myanmar Dental and Oral Medicine Council
MDG	Millennium Development Goal
MDR	Multi-Drug Resistant
MEDP	Myanmar Essential Drugs Project
MET	metabolic equivalents

MFDBA	Myanmar Food and Drug Board of Authority
MGH	Mandalay General Hospital
MHAA	Myanmar Health Assistant Association
M-HSCC	Myanmar Health Sector Coordinating Committee
MICS	Multiple Indicator Cluster Survey
MMA	Myanmar Medical Association
MMC	Myanmar Medical Council
MMCWA	Myanmar Maternal and Child Welfare Association
MMR	Maternal Mortality Ratio
MMT	methadone maintenance therapy
MNA	Myanmar Nurses' Association
MNCH	maternal, newborn and child health
MNCWA	Myanmar National Committee for Women's Affairs
MNMC	Myanmar Nurse and Midwife Council
MNPED	Ministry of National Planning and Economic Development
MOD	Ministry of Defence
MOH	Ministry of Health
MOI	Ministry of Industry
MP	Malaria Parasite
MPF	Myanmar Pharmaceutical Factory
MPH	Master of Public Health (postgraduate degree)
MPI	Myanmar Pharmaceutical Industry
MPMEEA	Myanmar Pharmaceutical and Medical Equipment Entrepreneurs Association
MPR	Malaria Positivity Rate
MRA	Mutual Recognition Agreement
MRCS	Myanmar Red Cross Society
MRI	magnetic resonance imaging
MSF	Medecins Sans Frontieres
MSM	men who have sex with men
MSW	Ministry of Social Welfare, Relief and Resettlement
MWAF	Myanmar Women's Affairs Federation
NAP	National AIDS Programme
NCD	noncommunicable disease
NCDP	National Comprehensive Development Plan

NEQAS	National External Quality Assessment Scheme
NGO	nongovernmental organization
NHC	National Health Committee
NHP	National Health Plan
NLD	National League for Democracy
NMCP	National Malaria Control Program
NRT	Nicotine Replacement Therapy
NSP	National Strategic Plan
NTP	National TB Program
ODA	official development assistance
OHD	Occupational Health Division
OOP	out-of-pocket
OPD	Outpatient Department
OPV	oral polio vaccine
OTC	over-the-counter
P&O	prosthetic and orthotic
PGAE	Partnership Group on Aid Effectiveness
PHC	primary health care
PhD	Doctor of Philosophy (doctoral degree)
PHP	People's Health Plan
PHS-1	Public Health Supervisor -1
PHS-2	Public Health Supervisor -2
PLHIV	People Living with HIV
PMTCT	Prevention of Mother-to-Child Transmission
POD	prevention of disability
POHC	Primary Oral Health Care
PONREPP	Post Nargis Recovery and Preparedness Plan
PPM	public–private mix
PPP	public–private partnership
PSC	Public Service Commission
PSI	Population Services International
PWD	person with disability
PWID	people who inject drugs
RDF	Revolving Drug Fund
RDT	rapid diagnostic test
RH	Reproductive Health

RHC	Rural Health Center
RRT	Rapid Response Team
RTI	reproductive tract infection
SARS	severe acute respiratory syndrome
SEA	South-East Asia
SIDA	Swedish International Development Agency
SLORC	State Law and Order Restoration Council
SPDC	State Peace and Development Council
SPH	Sun Primary Health
SQH	Sun Quality Health
SRC	Singapore Red Cross
Sub-RHC	sub-rural health centre
SSB	Social Security Board
STEPS	Stepwise approach to Surveillance
STI	sexually transmitted infection
TB	tuberculosis
TBA	Traditional Birth Attendant
TCP	Targeted Condom Promotion
TFR	total fertility rate
THA	Township Health Assistant
THE	Total Health Expenditure
THN	Township Health Nurse
TM	Traditional Medicine
TMO	Township Medical Officer
TSG	technical and strategy group
TT	tetanus toxoid
U5MR	Under-5 Mortality Rate
UCSB	Union Civil Service Board
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNOPS	United Nations Office for Project Services
US$	United States dollar
USA	United States of America

USAID	United States Agency for International Development
USDP	Union Solidarity and Development Party
VBDC	Vector Borne Diseases Control
WASH	Water, Sanitation and Hygiene (UNICEF)
WDI	World Development Indicator
WFP	World Food Programme
WGI	World Governance Indicator
WHO	World Health Organization
WHOSIS	WHO Statistical Information System
WHS	World Health Statistics
YGH	Yangon General Hospital
YLD	years lived with disability
YLL	years of life lost

Abstract

There are positive indications in Myanmar that, along with the changes in the political system and administrative structures following the 2010 national elections, the new government is undertaking reforms which include the health sector. Challenges remain for further improving health equity among its population.

Life expectancy at birth increased for both males and females between 1980 and 2011; along with an increase in the child immunization coverage; and declines in infant and under-5 mortality rates, and maternal mortality ratio. Myanmar has made some progress towards achieving its Millennium Development Goals, but further improvement is needed to reach the 2015 targets.

The Ministry of Health is the major player in the health sector as a governing agency as well as a provider of comprehensive health care. However, many key players played increasing roles with the evolving political and administrative circumstances. The government used to be the main source of financing, with provision of services virtually free until user charges were introduced in the form of cost sharing in 1993; since then household out-of-pocket payment has become the main source of finance. The health system comprises a pluralistic mix of public and private systems both in financing and provision. The Department of Health, one of the seven departments of MOH, is the service provider and also takes the regulatory functions of the Ministry in protecting the health of the people.

The network of hospitals and health centres (which extends down to village level) provides preventive and curative services ranging from primary to tertiary care. Inadequate managerial capacity and the lack of proactive mind-set among health workers at local level (inherited from the previous political environment) are challenges that need to be overcome to make decentralization smooth and effective.

The National Health Plan remains an integral part of the comprehensive national development plan. The government has started to take the initiative to introduce formal social protection in the country and MOH is in the process of piloting and introducing some community-based and demand-side approaches as interim measures while the Social Protection System is in the developmental stage. Human resources for health are constrained, even as the recruitment of doctors, nurses and midwives have been increasing since the early 1990s, but have not yet reached the indicative benchmark of 2.28 doctor, nurse and midwife per 1000 population.

The challenges of Myanmar are to overcome the limitations of the past (e.g. low investment in rural health services), inadequate funding for expansion of universal health coverage, and ensure possible use for health of the funds generated from revenue on extracting natural resources. Addressing health inequities is of paramount importance for Myanmar, needing a major reform that will ensure health care services reach the poor and the disadvantaged groups, minority groups in particular, and in conflict-affected and hard-to-reach areas, through the effective functioning of township health system.

Executive Summary

The total population of Myanmar was estimated at 51.9 million in 2010, with an annual growth rate of about 1%. There was no substantial growth in the country's per-capita gross domestic product (GDP) between 2000 and 2012. There are positive indications in Myanmar that the new government is working towards achieving macroeconomic stability. The people of Myanmar comprise over 130 ethnic groups. Life expectancy at birth increased for both males and females between 1980 and 2011. The top five causes of disability adjusted life years (DALYs) in 2010 were lower respiratory tract infections, tuberculosis, diarrhoeal diseases, Human immunodeficiency virus (HIV)/ acquired immunodeficiency syndrome (AIDS) and stroke. New among the top 10 causes of DALYs in 2010 were HIV/AIDS, ischaemic heart disease, road injury and cirrhosis of the liver – these require effective prevention policy. The top five risk factors are diet, tobacco smoking, household air pollution from solid fuels, high blood pressure, and high blood sugar. Noncommunicable diseases (NCDs) contribute to approximately 40% of deaths in Myanmar. NCDs and injuries generally rose between 1990 and 2010, while communicable, maternal, neonatal and nutritional causes of DALYs generally declined. Improvements in access to safe water and adequate sanitation have been reported. However, diarrhoea remains among the top five causes of death. There has been an increase in the child immunization coverage, a decline in infant mortality rate (IMR), under-five mortality rate (U5MR) and maternal mortality ratio (MMR). Myanmar has made some progress towards achieving its Millennium Development Goals (MDGs), but there is need for improvement to reach the 2015 targets. Nearly seven decades of internal conflict in Myanmar have harmfully affected the lives of hundreds of thousands of civilians. Myanmar is also prone to natural disasters: coastal regions exposed to cyclones and tropical storms, and the whole country at risk from earthquakes. Cyclone Nargis was the largest natural disaster in Myanmar's recent history.

The Ministry of Health (MOH) is the major player in the health sector as a governing agency as well as a provider of comprehensive health care. However, many key players played increasing roles with the evolving political and administrative circumstances. Historically, the health system has been shaped by the five distinct periods of administrative regimes and

political systems. The government used to be the main source of financing, with provision of services virtually free until user charges were introduced in the form of cost sharing in 1993; since then household out-of-pocket (OOP) payment has become the main source of finance.

The health system comprises a pluralistic mix of public and private systems both in financing and provision. The Department of Health (DOH), one of the seven departments of MOH, is the service provider and also takes the regulatory functions of the Ministry in protecting the health of the people. The network of hospitals and health centres (which extends down to village level) provides preventive and curative services ranging from primary to tertiary care. Inadequate managerial capacity and the lack of proactive mind-set among health workers at local level (inherited from the previous political environment) are challenges that need to be overcome to make decentralization smooth and effective.

The National Health Plan (NHP) remains an integral part of the comprehensive national development plan. Successive NHPs have been developed taking into consideration health needs and the policy and developmental context of the country, the need to honour various international commitments, the determinants of health, and the need to build a strong health system. The National Health Committee (NHC) is a high-level interministerial policy-making body concerned with health matters. NHC played an instrumental role in providing the mechanism for intersectoral collaboration and coordination. However, there is no formal coordinated social protection mechanism to prevent families from falling into poverty as a result of health payments. Only a small proportion of formal-sector workers are covered by the current formal social-security system. The government has started to take the initiative to introduce formal social protection in the country and MOH is in the process of piloting and introducing some community-based and demand-side approaches as interim measures while the Social Protection System is in the developmental stage.

The current Health Information System comprises hospital, public-health, human-resources and logistic information. The Central Epidemiology Unit of the DOH is a national focal point for communicable-disease surveillance and response, responsible for disease surveillance. Health technology assessment is an area in which the health sector needs capacity development. The DOH is the main organization designated to regulate health-care providers, pharmaceuticals, medical devices and aids, and capital investment. Previous political situations and restrictions made patient empowerment more of a concept than practice.

Total health expenditure in Myanmar, 2.0–2.4% of its GDP between 2001 and 2011, is the lowest among countries in the World Health Organization (WHO) South-East Asia and Western Pacific Regions. General government health expenditure (GGHE) as a percentage of general government expenditure (GGE) is low, at 1% between 2003 and 2011. GGHE as percentage of GDP amounted to 0.2–0.3% over the same period. GGHE as a percentage of GDP and of GGE in 2012–2013, increased significantly to 0.76% and 3.14%, respectively; however, this level of health investment is still low compared to the demand for health care. The statutory financing system is very limited: only 1% of population is covered by Social Security Scheme, spending by Social Security was low at 1.3% of GGHE. Inadequate government expenditure on health care over the past decade resulted in high OOP payments by households, which became the dominant source for financing for health care (accounting for 79% of total health expenditure). Expenditure by other ministries on medical care for their employees is small; while donor contributions remain substantial, at 7% of total health expenditure in 2011 (half what the government spends on health).

As a result of economic sanctions, official development assistance has been relatively low compared with other developing countries, and was channelled through global partnership programmes; (this is changing rapidly, however). Aid flows increased in the late 1990s and peaked in 2009 and 2010 in response to Cyclone Nargis. Challenges emerged at that time as donor funding was managed by nonstate actors through numerous parallel programmes often not in line with government policy priorities and not sustainable in the long term. Donations by households and communities for health care and support to the poor are often inadequate to meet the high demand. The 2012 Social Security Law providing comprehensive social and health protection for formal-sector employees is an important milestone, yet challenges remain on how the government will introduce financial-risk protection for the majority of the population who are poor and those engaged in the very large informal sector. The provision of universal access to free essential generic medicines is an immediate step in moving closer to universal health coverage. Measures, including tax reforms, are needed to expand the fiscal space and enhance government expenditure on health. All categories of public-sector health workers are government employees. While salaries are low in relation to the cost of living standards, self-motivation and earnings from secondary jobs (clinical or nonclinical) are the main incentives keeping them in government service.

There has been an increase in the number of public hospitals since the early 1990s, in total an additional 140. Ayeyawady Region has invested in hospitals the most, followed by Sagaing Region; however, there was no change in the

number of hospitals in Chin State. Coinvestment by the local community contributions in building rural health centres (RHCs) and sub-rural health centres (Sub-RHCs) is widely practised. The number of private hospitals increased within this decade, but at a lower rate than public hospitals. Hospital equipment is usually provided by the government budget and MOH's share of government expenditure was increased four-fold in 2012. The recruitment of doctors, nurses and midwives has been increasing since the early 1990s, but has not yet reached the global benchmark of 2.28 doctor, nurse and midwife per 1000 population. There is also underproduction of dental surgeons, pharmacists and technicians as compared to doctors and nurses. In order to improve the health workforce situation in the public sector, a Human Resources for Health Master Plan was prepared in 2012 for the next 20–30 years. Voluntary health workers from the community have been recruited and trained since the 1980s, using multiple sources of public and non-government funds. Even though there is some attrition, training and assigning community health workers (CHWs) on special jobs by vertical programmes and providing social recognition, moral support and incentives to CHWs and auxiliary midwives have motivated them to remain as voluntary health personnel for the benefit of their own communities. The existing health management information system (HMIS) needs to be strengthened, and an e-health care system developed from primary level to tertiary hospitals.

The MOH is determined to deal with communicable diseases, NCDs and the high burden of maternal mortality in the country. The DOH is mainly responsible for the management of public health activities through various national programmes and implementation in collaboration with development partners, civil service organizations and community-based organizations. Public health services in Myanmar are delivered to the communities by RHCs and Sub-RHCs through corresponding township, district, and region and state health departments that provide technical assistance and support. Campaigns and implementation of specific national programmes such as those for tuberculosis, malaria, HIV/AIDS, leprosy, and prevention of blindness are systematically delivered at all levels. Maternal and child health (MCH) services and prevention of vaccine-preventable diseases through the expanded programme on immunization are delivered together with nutrition promotion, health education and environmental sanitation services in the community. While the disease surveillance system is well established in the public sector, there is still room for improvement in getting information from the private sector. International health regulation core capacities have been strengthened at eight points of entry into the country, but there are gaps in human-resource

and infrastructure development. There will be more challenges in this area with the development of a new airport, sea ports and cross-border projects. Occupational hazards are managed by the Occupational Health Department. Services provided for NCDs not only cover treatment, but also prevention, control, and reduction of disease, disability and premature deaths due to chronic disease and conditions. Primary ambulatory care is usually provided by all outpatient departments at the hospitals, urban health centres, MCH centres, school health teams, RHCs and Sub-RHCs that handle outpatient care. Emergency, specialized ambulatory and specialized inpatient care are handled by the hospitals at all levels according to their capacity. Specialized inpatient care is conducted in both public tertiary hospitals and private specialist clinics and hospitals. The Central Medical Store Depot procures and distributes medicines to hospitals all over the country, but supplies are insufficient; management of the supply chain needs to be strengthened. Meanwhile, private pharmacies and drug stores are reaching consumers, who then incur OOP expenses. The country has institutional care like homes for long-term care of the aged and also community-based care by volunteers implemented in over 150 townships supported by Help Age Korea, and DOH is implementing an elderly health care project in another 150 townships opening weekly clinic for care the elderly at the RHC level. Though dental care is based on clinical institutional care, it is also concerned with public health where oral health programmes are conducted in schools for schoolchildren. Traditional medicine of Myanmar also has an important agenda as regards service delivery as many rural people still rely on traditional herbal medicines.

Expansion of the health system, with the networks of public hospitals, RHCs, Sub-RHCs and urban health centres, was most vibrant between the 1970s and 1990s. The health system can also be judged by its success stories: eradication of smallpox, elimination of leprosy, trachoma, poliomyelitis and iodine-deficiency disorders. The first in the series of reforms implemented since the 1990s was on improved access to essential medicines and the introduction of different financing mechanisms to recover and replenish the costs. Reforms in other health-financing mechanisms were added (e.g. Revolving Drug Fund, hospital trust funds, community cost sharing including exemption for the poor, and community donations) in all public hospitals. Some of these financing mechanisms continue today. Initially, these mechanisms aimed at ensuring continuous replenishment of essential medicines by mobilizing resources from households and communities in the face of insufficient government funding. Later the mechanisms were extended by introducing exemption for the poor and supporting them through other mechanisms like trust funds,

health equity funds, to offer protection from financial burden. However, these interventions are not able to raise sufficient revenues to replenish the medicines, or to reduce the OOP expenses and financial burden of the poor. The work of the RHCs since the early 1970s has been focused on externally assisted programmes, concentrated in selected townships and only for specific programme priorities, such as tuberculosis, malaria and HIV, and reproductive health. Thus, those townships without any donor-supported programmes had to concentrate on their routine activities with little technical, financial or material support. With the low salary paid to health workers, the staff in these areas started dual-practice in their off-hours as private practitioners. Major improvements in the health status of the population are crucial for inclusive growth. Public budget allocation for health has increased considerably in the last few years. However, no relevant data are available on how much of this increase has resulted in significant improvement in equity and access to health services. Donor-coordination and fund-support mechanisms have evolved into integrated programme management with the principle of Oneness in line with the Paris Declaration on Aid Effectiveness, but more effort is needed. The challenges of Myanmar are to overcome the limitations of the past (e.g. low investment in rural health services), inadequate funding for expansion of universal health coverage, and possible use for health of the funds generated from revenue on extracting natural resources. New opportunities should also be explored for filling the fiscal spaces in the national budget, and for increasing investment in rural health facilities.

In the context of the aspirations to improve the health status and prolong the lives of the people, the National Health Policy and National Health Development Plans (2000–2016) have the achievement of universal health coverage as an overarching objective, with building an effective and equitable health system and addressing determinants of health as important and ambitious objectives. However, emphasis on political stability and economic growth over social development has made the health-for-all policy merely a concept. Following the changes in the political and economic environment and the introduction of health-financing reforms in the form of introducing user charges, household OOP spending on health care (and the imperfect nature of the healthcare market) became a dominant part of health service provision, hampering access by the poor who cannot afford to pay. Measures taken to protect the poor were also not effective. With the market becoming a dominant mode of health service provision, some health professionals are more oriented towards making profit. Change in the behaviour of these health professionals, especially doctors, has eroded a once harmonious relationship with patients that

nurtured in the traditional cultural context. Despite the policy to expand services to the rural and border areas, available evidence indicates the existence of disparities in access to and utilization of health services. Utilization of services depends on capacity to pay for medical care and transport cost rather than health need. Both communicable diseases and NCDs were identified as major causes of mortality, with tuberculosis and cardiovascular diseases as the most common causes of deaths. In the face of formidable social and economic challenges, gains in combating major communicable diseases are noteworthy and attributable to the health system. The expansion of health care facilities and adequate staffing with appropriate skill mix to address population health needs require further strengthening. Evidence indicates that the allocative and technical efficiencies of resource allocation are still inadequate. Transparency and accountability are needed in the context of the previous overwhelming domination of socialist ideology, while the historical autocracy and lack of consumer sovereignty are challenges in the current market economy. There had been a substantial gap between policy objective, effective implementation and outcomes. Reform measures initiated by the elected civilian government and recent increase in government spending on health foster new hope for the health system to become well functioning and fair, though it is a long journey to reach that goal.

Formation of Regional and State Legislatures and Governments under the new 2008 Constitution raises expectations and a prospect for more decentralization. The central authority at MOH in the future will have to assume the functions of setting rules and standards. Regional/State and local health departments could then take on monitoring and enforcement roles as well as service provision and management of health workforce. Such decentralization would require massive capacity development at local levels.

Addressing health inequities is of paramount importance for Myanmar, needing a major reform that will ensure health care services reach the poor and the disadvantaged groups, in particular minority groups and in conflict-affected and hard-to-reach areas, through the effective functioning of township health system. From an equity perspective, the move towards primary health care concepts and practices is a step in the right direction: strengthening RHCs, Sub-RHCs and station hospitals in rural areas rather than upgrading secondary and tertiary urban hospitals is a correct route to improve equity in health care, as these primary health care close-to-client services are better accessed by the vast majority poor rural people.

1 Introduction

Chapter summary

The total population of Myanmar was estimated at 51.9 million in 2010, with an annual growth rate of about 1%. There was no substantial growth in the country's per-capita gross domestic product (GDP) between 2000 and 2012. There are positive indications in Myanmar that the new government is working towards achieving macroeconomic stability. The people of Myanmar comprise over 130 ethnic groups. Life expectancy at birth increased for both males and females between 1980 and 2011. The top five causes of disability adjusted life years (DALYs) in 2010 were lower respiratory tract infections, tuberculosis, diarrhoeal diseases, Human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) and stroke. New among the top 10 causes of DALYs in 2010 were HIV/AIDS, ischaemic heart disease, road injury and cirrhosis of the liver – these require effective prevention policy. The top five risk factors are diet, tobacco smoking, household air pollution from solid fuels, high blood pressure, and high blood sugar. Noncommunicable diseases (NCDs) contribute to approximately 40% of deaths in Myanmar. NCDs and injuries generally rose between 1990 and 2010, while communicable, maternal, neonatal and nutritional causes of DALYs generally declined. Improvements in access to safe water and adequate sanitation have been reported. However, diarrhoea remains among the top five causes of death. There has been an increase in the child immunization coverage, a decline in infant mortality rate (IMR), under-five mortality rate (U5MR) and maternal mortality ratio (MMR). Myanmar has made some progress towards achieving its Millennium Development Goals (MDGs), but there is need for improvement to reach the 2015 targets. Nearly seven decades of internal conflict in Myanmar have harmfully affected the lives of hundreds of thousands of civilians. Myanmar is also prone to natural disasters: coastal regions exposed to cyclones and tropical storms, and the whole country at risk from earthquakes. Cyclone Nargis was the largest natural disaster in Myanmar's recent history.

1.1 Geography and sociodemography

Figure 1.1 Map of Myanmar

Source: Myanmar Information Management Unit (2013) (http://www.google.com.mm/search?q=MIMU+Map+of+Myanmar&tbm=isch&tbo=u&source=univ&sa=X&ei=FWvWUsnCDIKrkQWyroH4DA&ved=0CDwQsAQ&biw=1024&bih=608, accessed 6 February 2013).

Myanmar lies between latitudes 09°32´ and 28°31´N and longitudes 92°10´ and 101°11´E. It has an area of approximately 676 578 square kilometres. Borders are shared with the People's Republic of China to the north and east, Lao People's Democratic Republic and the Kingdom of Thailand to the east, and Republic of India and People's Republic of Bangladesh to the west (see Fig. 1.1).

Myanmar's boundaries encompass an area roughly in the form of a diamond, measuring 800 km from east to west and 1300 km from north to south (MOH, 1979). The Mon and Tanintharyi coastal strip extends from the south-eastern side of the diamond some 800 km further south into the Malay Peninsula. There are mountain ranges on the west, north and east serving as natural barriers. The Ayeyawady (Irrawaddy) and Sittaung river basins form alluvial plains on either side of the Bago (Pegu) Yoma (hill range). The Than-lwin (Salween) River cuts deep through the Shan Hills on a north–south axis. The Chindwin River is the main tributary of the Ayeyawady, having its watershed in the north-western hills along

the India–Myanmar border. Just before the lower Ayeyawady enters the Andaman Sea, it flows through vast flat lands. The river then divides into eight main branches to form the fertile delta which covers an area of 33 670 square kilometres. The Bay of Bengal lies to the west and the Andaman Sea to the south of the country. The greater portion of Myanmar lies within the tropics. Myanmar has three seasons: summer (from March to mid-May), rainy season (from mid-May to the end of October) and winter (from November to the end of February).

Myanmar administratively consists of seven regions (Ayeyawady, Bago, Magway, Mandalay, Sagaing, Taninthayi and Yangon), seven states (Chin, Kachin, Kayah, Kayin, Mon, Shan and Rakhine) and Union Territory. Nay Pyi Taw, the capital, designated as Union territory, is under the direct administration of the president. The regions and states are subdivided into 70 districts and 330 townships, 84 subtownships, 398 towns, 3063 wards, 13 618 village tracts and 64 134 villages (MOH, 2013). In accordance with the current Constitution (2008), five self-administered zones and one self-administered division[1] for six minority ethnic groups have been established (Table 1.1).

Table 1.1 Self-administered zones and division within Myanmar

State/Region	Self-administered zone/division
Sagaing Region	Naga Self-administered Zone
Shan State	Kokang Self-administered Zone Ta-ang Palaung Self-administered Zone Pa-O Self-administered Zone Danu Self-administered Zone Wa Self-Administered Division

Source: Asia Pacific Observatory on Health Systems and Policies

The people of Myanmar are made up of over 130 ethnic groups with eight major groups; Bamar constitute the majority (60%) followed by Shan (8.5%), Kayin (6.2%), Rakhine (4.5%), Mon (2.4%), Chin (2.2%), Kachin (1.4%) and Kayah (0.4%) (MNPED & UNICEF, 2012b). Over 100 languages and dialects are spoken across the country, while Myanmar language is the official language.

1 The terms Self-administered Zone and Self-administered Division are taken as used in the Constitution of the Republic of the Union of Myanmar (2008). They are demarcated for minority ethnic groups whose populations are above 200 000 and which have continuously inhabited two or more townships.

There is no single region or state in Myanmar inhabited homogeneously by only one ethnic group. To give a few examples, Magway Region in the central plains is inhabited by Bamars and Asho Chins; and Bago Region in the southern plains is inhabited by Bamars, Kayins, Shans, Asho Chins and Pa-Os. In addition, some "smaller" minority ethnic groups residing in the states of "larger" minority ethnic groups deserve special attention in Myanmar to help them observe their ethnic rights. For example, Rakhine State has minority ethnic groups like Maramar-gyi, Daing-net, Kamarn, Mro, Khamee and Thet (Chakhma); and Shan State has minority ethnic groups Inn-thar, Taung-yoe, Akha, Lahu, Kayan and Pae Zuu (Myaung Zee) among others (Daw Moe Thida Htwe, Anthropology Department, Yangon University, personal communication, 23 March 2013).

Citizenship is given in accordance with the 1982 Citizenship Law of Myanmar. There are 78 articles in this Citizenship Law. Article 3 states that Kachin, Kayah, Karen, Chin, Bamar, Mon, Rakhine, Shan and their subnationality groups living in any part of Myanmar before the year 1823 are citizens of Myanmar; Article 5 states that those born to the parents of the citizens as designated under Article 3 are also citizens of Myanmar. There are other articles which state how those born to parents of Myanmar citizens and foreigners may qualify to become citizens of Myanmar.

In Myanmar, about 90% of the population is Buddhist with Christians and Muslims constituting about 5% and 4%, respectively. Other religions together comprise about 1%.

Table 1.2 shows trends in population and demographic indicators, for selected years (1980–2010).

Table 1.2 Trends in population and demographic indicators, selected years

Indicator	1980	1990	1995	2000	2005	2010
Total population (million)	34.5	42.1	45.3	48.5	50.2	51.9
Population, female (% of total)	51.1	51.1	51.1	51.1	51.3	51.5
Population ages 0–14 (% of total)	41.1	37.7	34.5	30.7	28.1	26.1
Population ages 15–64 (% of total)	55.0	58.1	61.0	64.5	67.0	68.8
Population ages 65 and above (% of total)	3.9	4.2	4.5	4.7	4.9	5.1
Population growth (average annual growth rate, %)	2.3	1.6	1.4	1.1	0.6	0.8
Population density (people per sq km)	52.6	64.5	69.4	74.1	76.8	79.5
Fertility rate, total (births per woman)	4.6	3.4	2.9	2.4	2.1	2.0
Birth rate, crude (per 1000 people)	32.7	27.1	23.5	20.7	18.5	17.3
Death rate, crude (per 1000 people)	12.4	11.1	9.7	9.1	8.9	8.6
Age dependency ratio (population 0–14 & 65+: population 15–64 years)	81.7	72.1	63.9	55.0	49.3	45.3
Rural population (% of total population)	76.0	75.4	74.4	72.8	70.6	67.9
Educational level						
Literacy rate, adult female (% of females ages 15 and above)						89.9
Literacy rate, adult male (% of males ages 15 and above)						94.8
Literacy rate, adult total (% of ages 15 and above)						92.3

Source: World Bank (2011a).

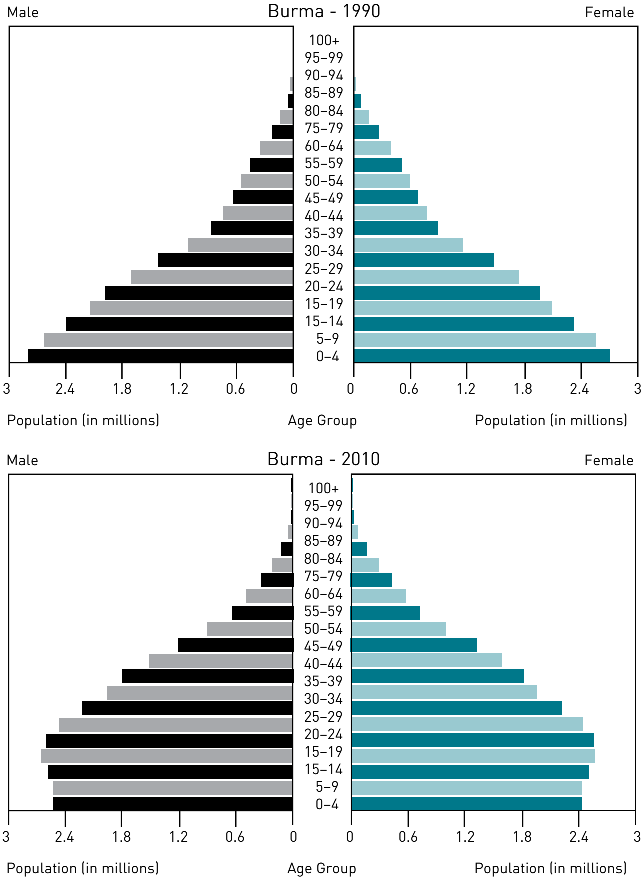
Population data show discrepancies between what is reported officially by the Government of Myanmar and what is reported by United Nations (UN) sources. For example, government data on total population was 55.4 million, 57.5 million and 59.1 million, with annual growth rates of 2.0%, 1.8% and 1.3%, respectively, for the years 2006, 2008 and 2010 (CSO, 2012). These are higher than the international estimates shown in Table 1.2. Myanmar's last census was in 1983 and after a lapse of over three decades Myanmar's next census will take place in 2014. The total population of Myanmar was reported as 10.7 million in 1901, and the

latest census data of 1973 estimated it as 28.9 million (UNFPA, 2010). As shown in Table 1.2, Myanmar's population was estimated at 51.9 million in 2010, with an annual growth rate of 0.8%, showing a steady increase over several decades. The population is unevenly distributed among the regions, with Mandalay and Ayeyawady regions being the most populous in the country, each having about 14% of the country's population, and Kayah State is the smallest region in population size with just 0.6% of the total population (UNFPA, 2010). About 70% of the population resides in rural areas. Female population as a percentage of the total was steady at about 51% during the reference years (Table 1.2). This may be considered a proxy indicator for absence of gender-selective abortion and infanticide in Myanmar.

Family structure in Myanmar is basically nuclear. However, extended or joint families may be observed among some ethnic groups and compound families among a few ethnic groups (Lwin Lwin Mon, Anthropology Department, Yangon University, personal communication, 13 February 2013). Myanmar has traditionally been a pronatalist country, the past leaders giving reasons that the country is wedged between the two giant populous nations, India and China, and fertility control policy has not been favoured. In spite of this situation, fertility in Myanmar is declining. The total fertility rate (TFR) of 2.0 since 2009 is below the 2.1 replacement rate. This could be attributed to some extent to the success of the birth-spacing programme in Myanmar. There has been a gradual increase in Myanmar's contraceptive prevalence rate (CPR), reaching 37% in 2001 (32.8% using modern methods and 4.2% traditional methods), 41% in 2007 (38.4% for modern methods) (UNFPA, 2010) and 46% in 2010 (World Bank, 2011a). Contributions could also have come from other factors like improved education and employment of women, an increase in age at first marriage, and an increase in the proportion of women who never marry (DOP & UNFPA, 2009). A decline in fertility trend with an accompanying decline in mortality (as indicated by crude death rates) in Myanmar makes the country to be referred to as in the late transitional stage.[2] This is reflected in the population pyramids of Myanmar, as estimated for 1990 and 2010 (Fig. 1.2).

2 The phenomenon of population changes in a country over time passes through four stages – pre-transition, early transition, late transition and post-transition. In late transition stage, there is a decrease in birth rate, pushing the population into stability, and decrease in death rate (http://www.geographylwc.org.uk/A/AS/ASpopulation/DTM.htm, accessed 20 April 2013).

Figure 1.2 Population pyramids of Myanmar, 1990 and 2010



Source: Redrawn from United States Census Bureau, International Data Base (2003) http://www.census.gov/population/international/data/idb/informationGateway.php

The Population Changes and Fertility Survey conducted in 1991 reported that one in every 10 persons in Myanmar changed the state or region of their residence at least once since birth (DOP & UNFPA, 1996). In the same report, urban-to-urban migration constituted 38.6% and rural–urban migration was 30.4%. Similar patterns of urban-to-urban and rural–urban migration were observed in similar surveys conducted in 2001 and 2004 (DOP & UNFPA, 2002, 2006). Official publications of these movements indicate a shift from small towns or cities to bigger towns or cities in search of better social and economic opportunities.

Migration also takes place as workers seek employment in rubber plantations, and gold and jade mines. The migrant workers are exposed to risks of acquiring malaria infections, drug use and sexually transmitted

infections including HIV (MOH & WHO, 2011b; Thinzar-Tun et al., 2010; Images Asia & PKDS, 2004). Internal migration is increasingly an issue, requiring better urban health-service planning.

Similar exposures to similar risks also exist among migrant workers working across the borders in neighbouring countries. The United Nations Human Development Report 2009 revealed that about 0.7% of Myanmar's population emigrated during 2000–2002 (UNDP, 2009). At least 3 million people from Myanmar migrated to neighbouring countries for economic, social and political reasons. A report by International Organization for Migration (IOM) indicated that there were 2 million Myanmar migrants in Thailand (Regional Thematic Working Group on International Migration including Human Trafficking, 2008). The majority of these migrants were said to be of irregular status.

Although the government has launched special health programmes for migrants from Myanmar (both internal and cross-border) at risk through collaboration with international nongovernmental organizations (INGOs), the Government of Myanmar still needs to put into place appropriate policies and programmes to address the needs of migrants. Root causes like poverty and conflict will need to be considered for dealing flexibly with the issue of migration to neighbouring countries.

1.2 Economic context

Since the late 1990s economic sanctions taken by the United States of America and the European Union (EU) and the 1997 Asian economic crisis have worsened Myanmar's economy. These issues decreased the amount of foreign investment and worsened inflation. The Asian Development Bank (ADB) reported that low investment, limited integration with global markets, domination by state-owned enterprises in key productive sectors of the economy, and frequent episodes of macroeconomic instability are the key factors inhibiting economic growth (ADB, 2012).

The United Nations Development Programme's Human Development Index (HDI), which measures achievements in terms of life expectancy, educational attainment and adjusted real income, ranked Myanmar at 149 out of 187 countries in 2012 (Bertelsmann Stiftung, 2012). The latest Integrated Household Living Conditions Survey (IHLCS) of Myanmar indicates that one in every four citizens of Myanmar is considered poor (MNPED & UNDP, 2007). Income disparities are geographically linked. The IHLCS report shows that 84% of poverty is found in rural areas and

disparities are pronounced across states. Chin State has the highest poverty incidence of 73%. The poverty incidence is lowest in Kayah State at 11%. Bago, Kayin, Mon, Sagaing and Yangon are well-off regions/states, with poverty incidences below 18%.

People's limited access to basic goods and services is often a result of poverty. A clear correlation between poverty and Millennium Development Goal (MDG) outcomes has been indicated by IHLCA (2009–2010) and Multiple Indicator Cluster Survey (MICS) (2009–2010) data (MNPED & UNDP, 2011; MNPED, MOH & UNICEF, 2011; MNPED & UNICEF, 2012b). For example, according to MICS, about 33% of the children in the poorest wealth quintiles are underweight compared with only about 14% of those in the richest quintile.

United States sanctions included a ban on all imports from Myanmar, a ban on exports of financial services by United States citizens to Myanmar, and an asset freeze on certain named institutions of Myanmar. On the other hand, the EU only banned imports associated with income to the military regime, and visa restrictions were put in place that included the managers of state-owned enterprises and their immediate family members. United States sanctions were said to be the most significant foreign policy intervention in the domestic affairs of Myanmar, and the main objective of the policy was isolation with the aim to force political reform; however, there was a great impact on ordinary citizens.

The sanctions were said to have actually helped neighbouring countries such as China, India and others belonging to the Association of Southeast Asian Nations (ASEAN)[3] gain an advantage in dealing with the military government. The reason was that their political, economic, social and cultural links with Myanmar are stronger than those with the United States and EU. Myanmar's closest neighbouring countries, which used to be importing countries, have become net exporters as a result of the sanctions. The 2003 United States ban on Myanmar imports had a deep impact on employment, especially in the garment industry, resulting in an estimated loss of 50 000–60 000 jobs (Andréasson, 2008). Sanctions have multiple effects on health as will be shown in subsequent chapters.

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3 Members of ASEAN comprise Brunei Darussalam, Kingdom of Cambodia, Republic of Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Republic of the Philippines, Republic of Singapore, Kingdom of Thailand and Socialist Republic of Viet Nam.

Myanmar has severe problems with the availability, quality and reliability of economic data. With this caveat, the economic indicators of Myanmar for the years 2007–2011 are as shown in Table 1.3. It can be seen there has been an increase in value added in industry (% of GDP), a decline in value added in agriculture (% of GDP), and value added in services (% of GDP) is stable. Myanmar is lacking data on Gini index. GDP composition by sector consists of: 38.8% agriculture, 19.3% industry and 41.8% services (Index Mundi, 2013).

Table 1.3 Macroeconomic indicators, selected years

	2007	2008	2009	2010	2011	2012
GDP (US$ billion, current)[a]	20.2	31.4	35.2	45.4	51.4	NA
GDP, PPP (US$ billion, current)[b]	64.0	67.8	71.9	76.8	82.7	NA
GDP per capita (US$, current)[a]	351.0	537.3	595.7	759.1	856.8	NA
GDP per capita, PPP (in US$)[b]	1110.7	1153.0	1200.9	1255.8	1325.0	NA
GDP growth rate (%, in constant prices)[a]	5.5	3.6	5.1	5.3	5.5	NA
Public expenditure (% of GDP)[c]	21.0	18.2	18.5	18.8	NA	NA
Cash surplus [deficit] (% of GDP)[a]	[3.8]	[2.4]	[4.8]	[5.7]	[5.5]	NA
Tax revenues (% of GDP)[d]	NA	NA	NA	NA	NA	4.9
External debt (% of GDP)[a]	37.5	25.8	24.4	24.8	22.8	NA
Value added in industry (% of GDP)[e]	20.4	22.7	24.6	26.0	NA	NA
Value added in agriculture (% of GDP)[e]	43.3	40.3	38.1	36.6	NA	NA
Value added in services (% of GDP)[e]	36.3	37.1	37.4	37.6	NA	NA

[ ]: negative; NA: not available; PPP: purchasing power parity.

Sources:

a ADB (2012).

b Index mundi (2011a).

c Trading Economics (Undated) for industry, Index mundi (Undated) for agriculture and Trading Economics (Undated) for services.

d Wikipedia contributors (2013c). Note: Trend data for tax revenues (% of GDP) for Myanmar are available in World Bank (2011a) only for the years 1990–2004.

Calculated from data for Government expenditure and GDP for the years available in MNPED & CSO (2012).

e Index of economic freedom, Heritage Foundation (2013).

Table 1.4 shows GDP of Myanmar in million kyat for the years 2006–2007 to 2010–2011 as officially reported by the government (CSO, 2012). The official exchange rate was fixed at one United States dollar (US$) to about 6 kyat for the period 2000–2010, and unofficial exchange rate ranged from 1450 kyat in 2006 to 1000 kyat in 2009 (Turnell, Bradford & Vicary, Undated). International Monetary Fund (IMF) estimated that there was an

average growth rate of 4.6% during 2002–2010, and an average growth rate of 5.0% in 2009–2010 (ADB, 2012); however, the IMF data differed from the official data.

Table 1.4 Trends of GDP of Myanmar (million kyat)

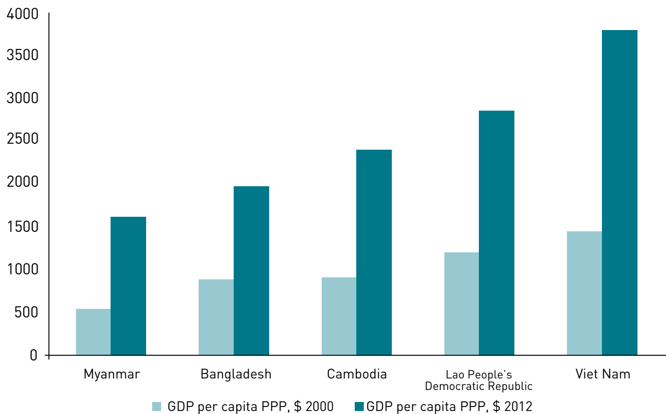
GDP	2006–2007	2007–2008	2008–2009	2009–2010	2010–2011[a]
Current producers' prices	16 852 758	23 336 113	29 233 288	33 894 039	39 846 694
Growth rate of GDP with current producers' prices (%)	-	38.0	25.0	16.0	18.0
Constant producers' prices[b]	13 893 395	15 559 413	17 155 078	18 896 940	20 891 324
Growth rate of GDP with constant producers' prices (%)	-	12.0	10.3	10.6	10.2

a Provisional actual. b 2005–2006 constant producers' prices.

Source: CSO (2012).

Figure 1.3 shows a comparison of GDP per capita in purchasing power parity (PPP) between Myanmar and selected neighbouring countries, and also between the years 2000 and 2012 for each country. It shows that there has not been a substantial growth in per-capita GDP in 2012 for Myanmar.

Figure 1.3 GDP per capita PPP of Myanmar compared with Bangladesh, Cambodia, Lao People's Democratic Republic and Viet Nam, 2000 and 2012

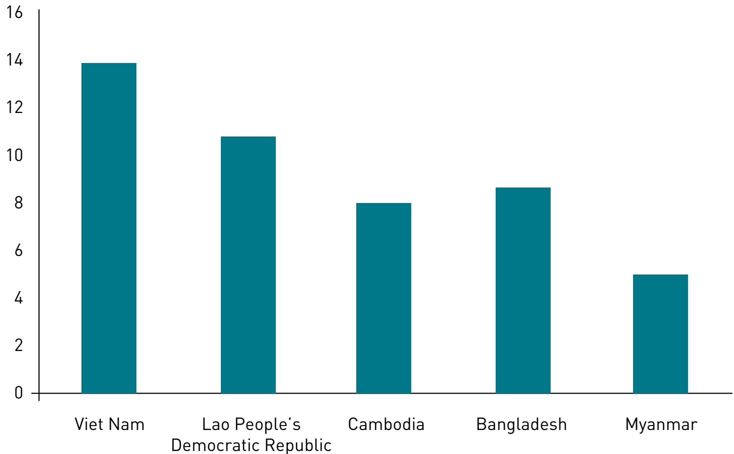


Sources:[4] Wikipedia contributors (2013a, 2013b).

4 The data source indicated is the only source where GDP per capita PPP data for Myanmar is available.

The new civilian government that came into power after the 2010 national election has considerably increased social-sector spending in its fiscal year 2012–2013 budget. However, spending on education and health may still account for less than 2% of GDP. Improving government revenues is crucial for funding public expenditures on education and health. ADB (2012) also reports that Myanmar's tax revenues as a percentage of GDP fell steadily during 1990–2002. This fall was said to have stopped and then reversed a little in the mid-2000s. Figure 1.4 shows Myanmar's tax revenue as a percentage of GDP, compared to Bangladesh, Cambodia, Lao People's Democratic Republic and Viet Nam, for the year 2012.

Figure 1.4 Tax revenues as a percentage of GDP, 2012, for Myanmar, Bangladesh, Cambodia, Lao People's Democratic Republic and Viet Nam



Source:[5] Wikipedia contributors (2013c).

1.3 Political context

Myanmar, formerly Burma, gained independence from British colonial rule in 1948. Despite the introduction of parliamentary democracy after Independence, the Burma Communist Party (BCP) and various ethnic groups soon took up arms against the central government. The rule by democratic government, under the Constitution of 1947, lasted for only about one and a half decades. A military coup toppled an elected government in 1962. The Burma Socialist Programme Party (BSPP) was established and introduced the 1974 Constitution following the referendum in 1973.

5 The data source indicated is the only source where tax revenue as percentage of GDP data for Myanmar is available.

The ruling party collapsed in 1988 due to continued economic problems leading to country-wide demonstrations. The 8888 Nationwide Popular Pro-Democracy Protests, also known as the People Power Uprising, involved a series of marches, demonstrations, protests and riots in the Socialist Republic of the Union of Burma. Key events occurred on 8 August 1988, hence the appellation 8888 Uprising. The military staged a coup on 18 September 1988 and the country again came under military rule, with the total absence of a constitution.

In May 2008, the new constitution was ratified with 92.4% support in a referendum. The first national elections in 20 years were held on 7 November 2010. As of February 2011, there are elected chairpersons and vice-chairpersons of the upper and lower houses of parliament. The region- and state-level assemblies, as well as a president and vice-presidents elected by the parliament also came into existence.

The Union Solidarity and Development Party (USDP) took 80% of the parliamentary seats. Opposition and ethnic parties hold the remaining the seats in the upper and lower houses. After the by-elections that took place in 2012, seats held by different political parties in both the upper and lower houses were as follows: 336 seats held by USDP; 44 seats by NLD[6]; 22 seats by Shan Nationalities Democratic Party; 17 seats by the National Unity Party (the former BSPP); 166 seats by the appointed military persons; and other seats held by ethnic and other smaller parties.[7]

Since a new government headed by President U Thein Sein came to power in March 2011, Myanmar has embarked on an ambitious programme of sweeping reforms to end its isolation and integrate its economy with the global system. When President U Thein Sein publicly called for national reconciliation, good governance and anticorruption in his inaugural address in March 2011, observers were surprised by the new political message from Nay Pyi Taw. President U Thein Sein further amazed the country by releasing hundreds of political prisoners, making dialogues with National League for Democracy (NLD) leader Daw Aung San Suu Kyi and allowing her to participate in high level talks to discuss the future of Myanmar, arranging ceasefires with nearly all the ethnic rebel groups, loosening restraints on media, the establishment of a national human-

6 Although NLD boycotted the 2010 elections, it contested in the 2012 by-elections.

7 There are 664 seats in total in the upper and lower houses.

rights commission, according the priority policy for poverty alleviation, building special economic zones around deep-sea ports and cultivating tourism. These are a few examples showing that significant change is being planned for the near future in Myanmar.

The governance indicators[8] for Myanmar are estimated at –1.46, –1.52, –1.65, –1.67 and –1.64, respectively, for the years 2007, 2008, 2009, 2010 and 2011 (World Bank, 2011b). The World Governance Indicators (WGI) indicators are aggregated indicators but the component data are not available. These will be the baseline for making comparisons with new data to be reported in 2015 and later. One can expect improvements with current reforms proceeding.

Social-movement organizations such as students', workers' and peasants' unions were not allowed during the military rule. However, many small community groups working on humanitarian issues have emerged, especially in the wake of Cycline Nargis in 2008. During the new government's rule, formation of civil society organizations has been permitted and media freedom has been granted. Although these organizations are not formally involved in health policy-making in Myanmar, a few civil society organizations have started acting as advocates for policy changes in other fields. For example, many of the environment-related civil society organizations actively participated in successfully advocating the new civilian government in 2011 to stop construction of Myit-Sone Dam on the upper Ayeyawady River in Kachin State.

Myanmar is a member of many international organizations both in the region and globally, such as ASEAN, International Committee of Red Cross and Red Crescent Societies (ICRC) and International Labour Organization (ILO). Myanmar will take the chair of ASEAN in 2014. The Union of Myanmar acceded to the Convention on the Rights of the Child (CRC) on 16 July 1991. On 15 August 1991, Myanmar became a State Party to the CRC. In line with the CRC, "the Child Law" was enacted on 14 July 1993. Myanmar acceded to the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in 1997. Myanmar National Committee for Women's Affairs (MNCWA) and Working Committee has been formed, and various activities implemented in the areas of education, health, violence against women, economy, the girl-child, culture, environment and media.

8 Estimate of governance performance –2.5 (weak) to 2.5 (strong). Aid donors condition aid eligibility on the quality of governance. Reference is made to World Bank (2011b) for the description of the methodology.

Although region- and state-level governments have been formed in accordance with the new constitution, decentralization of authority is still at an embryonic stage and progress is gradual. Political dialogues are also under way for the formation of federated states. It is a big challenge for the new government to achieve a successful political transition that can ensure macroeconomic stability and sustained improvement in the lives of ordinary people. It is also a challenge for the government to enact successful economic reform while maintaining political stability and a continued shift away from the authoritarian past.

1.4 Health status

Table 1.5 Life expectancy and adult mortality indicators, 1980–2011

	1980	1990	1995	1999	2000	2005	2010	2011
Life expectancy at birth, total (years)	55.0	57.3	60.1	61.6	61.9	62.9	64.7	65.2
Life expectancy at birth, male (years)	53.7	55.9	58.7	60.3	60.5	61.5	63.0	63.5
Life expectancy at birth, female (years)	56.5	59.7	61.5	63.0	63.3	64.3	66.4	66.9
Total mortality rate, adult, male (per 1000 male adults)	NA	NA	NA	244.7	266.8	254.0	235.4	NA
Total mortality rate, adult, female (per 1000 female adults)	NA	NA	NA	269.7	222.0	209.5	186.5	NA

NA: data not available.
Source: World Bank (2011a).

In Myanmar, life expectancy at birth increased for both males and females between 1980 and 2011 (Table 1.5). The estimated life expectancy at birth for both sexes in 1980 was 55.0 years (56.5 for females and 53.7 for males). The values for 2000 were 61.9 years for both sexes (63.3 for females and 60.5 for males), showing a continuous increase from 1980. Improvement of adult mortality rate among females outpaced that among males between 1999 and 2010.

Estimates of healthy life expectancy (HALE) (or disability adjusted life expectancy, DALE) at birth for Myanmar in 2000 was 47.7 years for males and 50.5 years for females, averaging 49.1 years over the sexes (Mathers et al., 2001; WHO, 2000). The difference between life expectancy at birth and HALE represents the number of years an average person lives with

poor health. Given the life expectancy at birth of 56.2 and 61.1 years for men and women, respectively, the expected loss of HALE was 8.5 and 10.7 years for men and women, respectively. Data to observe changes in the trend of this period are not available. Estimations made by WHO as regards total deaths are shown in Table 1.6.

Among infectious and parasitic diseases, tuberculosis stands out as causing the highest number of deaths, followed by diarrhoeal diseases and HIV/AIDS. Among the deaths due to noncommunicable diseases (NCDs), those due to cardiovascular diseases constitute the highest, followed by malignant neoplasms and respiratory diseases. There was a sharp increase in deaths due to injuries, contributed mainly by "unintentional injuries" other than road traffic accidents, poisonings, falls, fires and drowning in 2008 as a result of deaths inflicted by Cyclone Nargis.

In terms of gender- and age-specific mortality rate reductions, the *Global Burden of Diseases (GBD) Profile* for Myanmar reported that the greatest reductions in all-cause mortality rate were experienced by males aged 1–4 years (67%), and that males aged 30–34 years saw the largest increase in mortality rate (8%) during 1990–2010 (IHME, 2010).

In Myanmar, the top five causes of DALY[9] in 2010 were lower respiratory tract infections, tuberculosis, diarrhoeal diseases, HIV/AIDS and stroke (Table 1.6 shows cardiovascular diseases which are risk factors of stroke). The causes that emerged as the 10 leading causes of DALYs in 2010, which were not identified as top 10 list in 1990, were HIV/AIDS, ischaemic heart disease, road injury and cirrhosis of the liver.

9 DALY quantifies both premature mortality (YLLs) and disability (YLDs) within a population. Years of life lost (YLL) quantifies premature mortality by weighting younger deaths more than older deaths. Years lived with disability (YLD) is estimated by weighting the prevalence of different conditions based on severity.

Table 1.6 Estimated total deaths (thousands) by selected priority causes, selected years

	Total deaths (% of total for each condition)		
	2002	2004	2008
Communicable, maternal, perinatal and nutritional conditions	**231.4**	**216.1**	**204.1**
Infectious and parasitic diseases:	122.0 (52.8)	112.5 (52.1)	115.3 (56.5)
Tuberculosis	11.4 (4.9)	9.5 (4.4)	28.4 (13.9)
STIs excluding HIV	2.4 (1.0)	2.4 (2.7)	2.3 (1.1)
HIV/AIDS	19.0 (8.2)	21.4 (9.9)	18.5 (9.1)
Diarrhoeal diseases	24.9 (10.8)	22.8 (10.5)	13.9 (6.8)
Childhood cluster diseases	14.4 (6.2)	4.9 (2.3)	1.7 (0.8)
Malaria	7.1 (3.1)	8.9 (4.1)	16.6 (8.1)
Respiratory infections	58.2 (25.2)	56.1 (26.0)	47.7 (23.4)
Maternal conditions	4.2 (1.8)	3.3 (1.5)	2.4 (1.2)
Perinatal conditions	37.1 (16.0)	35.7 (16.5)	31.0 (15.2)
Nutritional deficiencies	9.8 (4.2	8.5 (3.9)	7.7 (3.7)
Noncommunicable diseases	**243.5**	**270.7**	**242.5**
Malignant neoplasms:	36.3 (14.9)	39.7 (14.7)	45.8 (18.9)
Cancer of the mouth and oropharynx	3.7 (1.5)	4.0 (1.5)	2.7 (1.1)
Cancer of the oesophagus	4.0 (1.6)	4.0 (1.4)	2.9 (1.2)
Cancer of the stomach	3.8 (1.6)	3.8 (1.4)	3.7 (1.5)
Cancer of the trachea, bronchus and lung	6.0 2.5)	8.7 (3.2)	6.7 (2.8)
Breast cancer	2.7 (1.1)	2.8 (1.0)	2.9 (1.2)
Cervix uteri cancer	2.6 (1.0)	2.7 (0.9)	3.5 (1.4)
Diabetes mellitus	9.0 (3.7)	10.0 (3.7)	8.7 (3.6)
Cardiovascular diseases	125.0 (51.7)	142.4 (52.6)	125.3 (51.6)
Respiratory diseases	28.0 (11.5)	30.9 (11.4)	27.0 (11.1)
Digestive diseases	17.5 (7.2)	18.9 (7.0)	14.5 (6.0)
Injuries	**45.0**	**42.2**	**164.2**
Unintentional injuries:	27.1 (60.2)	25.4 (60.2)	155.8 (94.9)
Road traffic accidents	8.1(18.0)	7.5 (17.8)	5.1 (3.1)
Poisonings	1.9 (4.2)	1.8 (4.3)	1.4 (0.9)
Falls	3.2 (7.1)	3.3 (7.8)	2.7 (1.6)
Fires	4.1 (9.1)	3.7 (8.8)	2.3 (1.4)
Drowning	3.4 (7.6)	3.0 (7.1)	1.9 (1.2)
Other unintentional injuries	6.5 (14.4)	6.1 (14.5)	142.5 (86.9)
Intentional injuries:	17.9 (39.8)	16.8 (39.8)	8.4 (5.1)
Self-inflicted injuries	5.29 (11.6)	4.7(11.1)	3.0 (1.8)
Violence	8.1 (18.0)	7.5 (17.8)	4.6 (2.8)
War	4.3 (9.6)	4.4 (10.4)	0.6 (0.4)

Sources: WHO Department of Measurement and Health Information (2004, 2009a).

1.4.1 Noncommunicable diseases

According to GBD 2010 report, the five risk factors that account for the most disease DALY lost in Myanmar are dietary risks, tobacco smoking, household air pollution from solid fuels, high blood pressure and high fasting plasma blood sugar (IHME, 2010). Cardiovascular diseases, cancers and chronic respiratory diseases are reported to be the major contributing factors to the NCD burden in Myanmar – WHO (2011c) indicates that NCDs contribute to approximately 40% of all deaths in Myanmar. Comparing burden of disease (BOD) in 1990 with that in 2010, NCDs and injuries are generally on the rise, while communicable, maternal, neonatal and nutritional causes of DALYs are generally declining.

A nationally representative WHO Stepwise approach to Surveillance (STEPS) survey was conducted in 2009 (WHO, 2011b). A total of 7429 adults participated in the survey, with an overall response rate of 99.3%. Table 1.7 shows the results of the STEPS survey in Myanmar, identifying chronic disease risk factors.

In general, nearly 17% of the respondents were current smokers; and the current smoking prevalence rate among males was nearly six times that among females. In 2010, the price of a popular cigarette brand in Myanmar was said to be 500 kyat for a packet of 20 cigarettes, and was the cheapest among all the brands available in Myanmar (Asian Pacific Pediatric Association, 2012). This relatively low price facilitates consumption by youths and lower economic groups. Myanmar is a signatory to the WHO Framework Convention on Tobacco Control (FCTC) and has undertaken a number of initiatives to reduce tobacco use and protect people from the dangers of smoking (WHO, 2003). Myanmar has implemented all the requirements of the Framework Convention and is comparable with other countries in the region (WHO, 2013b).

Table 1.7 Chronic disease risk factors in Myanmar (selected results of Myanmar STEPS survey, 2009)

Risk factor	Results for adults aged 15–64 years (95% confidence intervals)		
	Both sexes	Males	Females
Tobacco use			
Percentage who currently smoke tobacco daily	16.68% (15.84–17.54)	33.61% (31.9–35.36)	6.13% (5.47–6.85)
For those who smoke tobacco daily			
Average age started smoking (years)	20.78 (20.40–21.16)	20.33 (19.96–20.70)	22.31 (21.25–23.37)
Average years of smoking	23.29 (22.58–23.99)	22.09 (21.28–22.89)	27.38 (25.97–28.78)
Percentage of smoking manufactured cigarettes	21.53 (19.35–23.88)	27.42 (24.7–30.31)	1.4 (0.53–3.67)
Mean number of manufactured cigarettes smoked per day (by smokers of manufactured cigarettes)	6.32 (5.63–67.01)	6.38 (5.69–67.08)	2 (0.70–73.29)
Percentage who currently use smokeless tobacco daily	22.02% (21.09–22.98)	37.73% (35.98–39.52)	12.24% (11.32–13.22)
Alcohol consumption			
Percentage of abstainers (who did not drink alcohol in the last year)	80.94% (78.91–82.82)	55.42% (52.37–58.43)	96.84% (95.12–97.97)
Percentage of current drinkers (who drank alcohol in the past 30 days)	12.87% (11.65–14.21)	31.17% (28.64–33.81)	1.47% (0.77–2.79)
Fruit and vegetable consumption (in a typical week)			
Mean number of days fruit consumed	4.25 (4.08–4.42)	4.12 (3.93–4.31)	4.33 (4.14–4.51)
Physical activity			
Percentage with low levels of activity (defined as <600 MET-minutes/week[a])	12.69% (10.84–14.41)	10.44% (8.87–12.25)	14.1% (11.79–16.78)
Percentage with high levels of activity (defined as ≥ 3000 MET-minutes/week)	57.06% (52.47–61.52)	63.05% (59.08–66.84)	53.33% (47.89–58.69)
Median time spent in physical activity per day (minutes)	130 (50.0–260.0)	156 (60.0–300.0)	120 (43.0–240.0)
Mean time spent in physical activity per day (minutes)	182 (165.0–199.0)	211 (194.0–228.0)	164 (146.0–182.0)
Physical measurements			
Percentage who are overweight or obese (BMI ≥ 25 kg/m2)	25.38% (23.09–27.82)	17.74% (15.31–20.46)	30.27% (27.5–33.19)
Percentage who are obese (BMI ≥ 30 kg/m2)	6.8% (5.63–8.19)	4.27% (2.92–6.20)	8.37% (7.04–9.93)

BMI: body mass index.

a METs (Metabolic Equivalents) are commonly used to express the intensity of physical activities. MET is the ratio of a person's working metabolic rate relative to the resting metabolic rate. One MET is defined as the energy cost of sitting quietly, and is equivalent to a caloric consumption of 1 kcal/kg per hour.

Source: WHO (2011b).

Myanmar adult average alcohol consumption data, age 15 years and above, for the period 2003–2005 is 0.11 litres (WHO, 2011a) with indications of a declining trend during that period. However, more recent data are unavailable. The proportion of abstainers (who did not drink alcohol in the previous year) as found in the STEPS survey for both sexes were about 81% (Table 1.8). Nearly 31% of the male respondents and only 1% of the female respondents were current alcohol drinkers, showing significant abstainer prevalence among women. Myanmar does not have a total ban of alcohol. Alcohol drinking control measures under way in Myanmar include: restriction on advertising through billboard/outdoors (undertaken by city development committees); restriction on advertising on internet (undertaken by Ministry of Information); restrictions on alcohol sponsorships (individual government departments); campaign against drunk driving measures including blood alcohol concentration (BAC) levels by Myanmar Police Force; and introducing treatment guidance for alcohol use disorders in health care facilities.[10]

According to body mass index (BMI) classification, only about 4% of male and a little more than 8% of the female respondents were obese. A larger proportion of overweight women than men was observed. However, trends could not be assessed because of lack of data comparable to the Myanmar STEPS 2009 survey data.

1.4.2 Tuberculosis, malaria and HIV/AIDS

In Myanmar, leading causes of morbidity and mortality are a mix of communicable diseases and NCDs. The country is facing a high burden of communicable diseases such as tuberculosis (TB), malaria and HIV/AIDS. These three diseases are identified as top three national priority diseases of Myanmar (MOH, 2013).

The prevalence of smear-positive TB was estimated at 104 (71–137) per 100 000 population in the 1994 national survey, and 370 (293–468) per 100 000 population in the 2009–2010 survey (MOH, 2010c). It would be possible to infer that the TB situation in Myanmar has deteriorated. However, while the survey in 2009–2010 used both chest film and symptoms as screening tools, the 1994 survey used only TB suspected symptoms (chronic cough for two weeks or more) as a screening tool. The 2009–2010

10 This information was provided by WHO Office in Myanmar based on the technical report of survey questionnaire on alcohol and substance abuse answered by Maung Maung Gyee, Department of Mental Health, University of Yangon 1, Myanmar.

survey report indicated that: when TB in children, extra-pulmonary TB, and bacteriologically negative TB were taken into consideration, the TB prevalence in Myanmar could be 600 per 100 000 population or more; and though coinfection of TB and HIV may have affected the TB numbers more in 2009–2010 than in 1994, a 35% reduction in prevalence was observed over 15 years when the same screening and diagnostic algorithm was applied to the two surveys (MOH, 2010c).

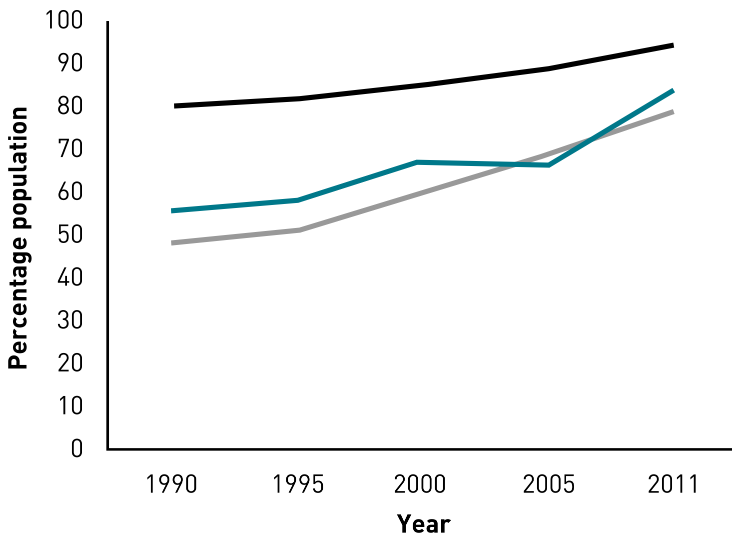
Despite reductions in recent years, malaria also remains a leading cause of mortality and morbidity, responsible for 8.1% of the total mortality in 2008. Malaria is re-emerging due to climatic and ecological changes, migration and natural-extraction industries, artemisinin resistance, and changes in behaviour of vectors. Major *Plasmodium* species of malaria cases in Myanmar are P. falciparum (68%) and *P. Vivax* (32%) (WHO, 2012). In Myanmar, 71% of the population lives in malaria risk areas (29% in high-risk areas, 24% in moderate-risk areas, and 18% in low-risk areas). Alongside those who reside in high-risk areas, the high-risk groups are the internal migrants (labourers in development projects, construction and extraction industries such as dams, irrigations, road, mining, logging, rubber plantation), people who have resettled in endemic areas, subsistence farmers in the forest and forest fringes, wood and bamboo cutters, and other forest-related workers (MOH, 2005). Myanmar is committed to comply with the Artemisinin Combination Therapy policies including through the Global Fund programmes. However, artemisinin monotherapy is still in use in some private-sector situations.

While the HIV prevalence in adults (ages 15–49) was estimated at 0.6% in 2011 (World Bank, 2011a), there are sizeable key vulnerable populations at higher risk (female sex workers and their clients, men who have sex with men, and people who inject drugs) (MOH, 2011b). These populations are disproportionately affected by HIV. In 2009, the prevalence of HIV was estimated at 11.2% (range 9.2–13.6%; CI 95%) for female sex workers (FSWs), 34.6% (31.6–37.7%; CI 95%) for injecting drug users (IDUs) and 22.3% (18.2–26.4%; CI 95%) for men who have sex with men (MSM). The majority of HIV infections in Myanmar have been in men. The male-to-female ratio declined from 8:1 in 1993 to 1.9:1 in 2009; projection to 2015 suggests a further decline 1.6:1, and these women are largely sex partners of current and former FSW clients, IDUs and MSM (MOH, 2011e).

1.4.3 Access to safe water supply and sanitation

Improvements in access to safe water and adequate sanitation have been reported (UNICEF, 2000, 2005, 2013). The validity of the increase in population access to safe drinking water reported by the United Nations Children's Fund (UNICEF) is confirmed by the WDI dataset (see Fig. 1.5). However, diarrhoea remains among top five causes of deaths and among top five causes of DALY in 2010 (see Table 1.7). This situation indicates the need to further investigate how "safe" the drinking water is and how "sanitary" the sanitary facilities that people accessed are, as well as food safety.

Figure 1.5 Percentage of population with access to improved water sources, 1990-2011.



Sources: WHO Global Health Observatory. Accessed 9 March 2014 [http://www.who.int/gho/database/en/].

According to the situation analysis on children in Myanmar (MNPED & UNICEF, 2012b), which makes reference to the UNICEF Water, Sanitation and Hygiene (WASH) knowledge, attitudes and practice study on 6000 households in 24 townships, there were gaps between "availability" and "safety". For example, the survey found that 68% of households had access to improved water sources. However, at the point of consumption, the water was probably being contaminated because only 17% of households had a safe method to extract drinking water from its storage containers (e.g. artificial ponds, tanks). The study also showed that 83%

of households reported that they had a latrine at home. Among these households, about 89% could be classified as having improved latrines. In other words, among all households, the proportion of households having improved sanitation facilities was 75.1%.

In big populous cities like Yangon and Mandalay, food and beverages prepared and sold by vendors or hawkers on the streets are popular places for people to have their meals. These also are potential sources for transmission of water-borne diseases like gastroenteritis where hygienic practices are not observed by the food handlers. In Yangon, there are said to be over 50 000 such food stalls in six downtown townships[11] (Aye Min Thein, Yangon City Development Committee, personal communication, 2013).

Unhygienic practices were observed among the majority of the food handlers, such as not handling food with gloves, not covering food properly to protect it from flies or dust, and not using sufficient water for washing plates. In a study conducted by Department of Medical Research (DMR) (Lower Myanmar) in 2004 among *Mo-hin-gar*[12] food sellers of roadside food stalls and street vendors in four townships of Yangon, it was reported that faecal coliforms (enteric bacteria that can cause diarrhoea and gastroenteritis) were present in 80% of *Mo-hin-gar* noodle samples (Wah-Wah-Aung et al., 2004). This is an indication of the seriousness of unhygienic conditions prevailing in the roadside food stalls. Diarrhoea is a common childhood problem in Myanmar and *Rotavirus* is said to be the single most important aetiological agent of diarrhoea. One study showed that diarrhoea was the cause of 18% of all hospitalizations of children under five years of age, and *Rotavirus* was identified in 53% of the stool specimens tested (Kyaw-Moe et al., 2005). One report indicated detection of entero-pathogenic *Escherichia coli* (EPEC) among diarrhoea cases admitted to a children's hospital in Yangon (DMR, Lower Myanmar, unpublished data, 2011).

1.4.4 Child immunization coverage

The child immunization coverage had increased to almost 90% in 2013, though a drop was noted in 2005 (Table 1.8). Further analysis is needed to validate the drop in coverage rates and determine its causes. MICS (2009–

11 Botataung, Pazundaung, Latha, Pabaredan, Lanmadaw and Seik-kan townships.

12 *Mo-hin-gar* is a Myanmar snack, a kind of rice-noodle and fish soup with other condiments, commonly eaten by people of Myanmar.

2010) reported that although no significant difference could be found in immunization coverage between urban and rural areas or between male and female children, slightly lower levels of coverage of all immunization were found in Shan (northern part) and Chin states compared with other states and regions (MNPED, MOH & UNICEF, 2011).

Table 1.8 Child immunization coverage in 2000, 2005 and 2013

Vaccine	Immunization coverage (%)		
	2000	2005	2013
BCG (TB)	88%	76%	87%
DPT3	82%	73%	85%
Polio3	86%	73%	87%
Measles	84%	72%	84%
Hepatitis B3	0%	62%	38%

BCG: bacille Calmette–Guérin; DPT: diphtheria–pertussis–tetanus vaccine.
Source: WHO & UNICEF (2013).

1.4.5 Maternal and child health

Table 1.9 gives maternal, child and adolescent health indicators. The infant mortality rate (IMR) for Myanmar in 1990 was 47.0 per 1000 live births, 48.5 in 2000 and 45.1 in 2005 – showing a declining trend.

According to World Bank estimates (Table 1.9), under-five mortality rate (U5MR) in Myanmar was estimated at 107.4 per 1000 live births in 1990. It decreased to 73.4 in 2005, indicating a decline of 32% over 15 years. However, there are discrepancies between what is estimated by the World Bank and what was found in surveys conducted in Myanmar.

For example, the Overall and Cause Specific Under-five Mortality Survey 2002–2003 reported a U5MR of 66.1 for the country, varying between 48.2 and 83.9 across regions. The urban U5MR was reported as 37.3 and the rural U5MR as 72.5 (MOH & UNICEF, 2003). Important findings of the U5MR survey (2003) are that 87% of total under-five deaths occur in rural areas, infant deaths contribute 73% of under-five deaths, and 70% of infant deaths occur during the first three months of life. Another example is that the Myanmar MICS (2009–2010) survey, which estimated U5MR at 46.1 per 1000 live births with higher rates in rural areas than in urban areas (MNPED, MOH & UNICEF, 2011).

According to the *Statistical Year Book 2011* (CSO, 2012), the figures for IMR are much lower than those indicated in Table 1.9. For example, according to the year book, the figures for 2000, 2005 and 2010 are 48.5, 45.1 and 37.5, respectively. This is probably due to under-reporting because of the inherent weaknesses in the vital registration system of Myanmar.

Table 1.9 Maternal, child and adolescent health indicators, selected years

	1990	1995	2000	2005	2010	2011
Adolescent fertility rate (births per 1000 women 15–19 years)[a]	NA	NA	21.1	17.5	13.7	12.8
Neonatal mortality rate (per 1000 live births)[a]	41.6	38.7	85.9	33.2	30.5	29.9
Infant mortality rate (per 1000 live births)[b]	NA	NA	75.3	67.24	50.76	49.23
Under-5 mortality rate (per 1000 live births)[a]	107.4	95.0	83.5	73.4	64.5	62.4
Maternal mortality ratio (maternal deaths per 100 000 live births)[c]	520	380	300	230	200	NA

NA: data not available.

Sources: a World Blank (2011a); b Index mundi (2011b); c WHO et al. (2012).

Table 1.9 indicates improvements in Myanmar's maternal mortality ratio (MMR), falling gradually between 1990 and 2010. According to the 1999 National Mortality Survey, differences were observed in MMR between urban and rural areas, and the value varied widely among the regions (MOH & UNICEF, unpublished information, 2006). In Myanmar, maternal and child health (MCH) including newborn care has been accorded as a priority issue in the National Health Plan (NHP), aiming at reducing maternal, newborn, infant and child morbidity and mortality.

1.4.6 Myanmar's progress on reaching MDGs, compared with neighbouring countries

Myanmar has shown notable progress over the past two decades in attaining MDGs 4 (child mortality) and 5 (maternal health) (United Nations Country Team in Myanmar, 2011; Yu-Mon-Saw et al., 2013). U5MR and IMR have been reduced, measles immunization coverage has increased and MMR declined (see also Tables 1.8 and 1.9). However, in spite of overall advances in health status, disparities remain between regions and groups in access to, and quality of, health services, especially among ethnic minorities, poor people, and people living in remote areas (United Nations Country Team in Myanmar, 2011). Myanmar still remains off-

track to achieve the MDG U5MR target of 38 or lower per thousand live births and IMR target of 26 or lower per thousand live births by 2015 (United Nations Country Team in Myanmar, 2011; Yu-Mon-Saw et al., 2013). As for MMR, though it still remains a concern in Myanmar, the target of a three quarters reduction by the year 2015 will probably be achieved. Myanmar's disease-specific vertical programmes covering HIV/AIDS, malaria and TB have also been viewed as effective in bringing about achievements on the MDG 6 (HIV/AIDS, malaria and other diseases) targets (Yu-Mon-Saw et al., 2013) (see also section 1.4.2).

There is room for further improvement to reach the targets for 2015 and to ensure more equitable levels of achievement across population and geographical areas. Table 1.10 compares Myanmar with neighbouring countries for selected health-related MDG indicators.

Compared with its neighbours, Myanmar needs to make greater effort to make further progress in attaining its MDGs. Myanmar seems to have particular difficulty improving its performance in the health-related MDG targets except for U5MR and MMR. For example, HIV prevalence is higher than in neighbouring countries, with 0.6% of the population aged 15–49 years infected in 2010. The TB prevalence (600 per 100 000 population) also remains higher than in neighbouring countries, except Cambodia, in 2010.

Access to birth spacing alone could reduce the number of maternal deaths. Despite Myanmar being a pronatalist country, the contraceptive prevalence rate has increased markedly (see section 1.1). In spite of this increase, more needs to be done to promote contraceptive use.

1.5 Conflicts and natural disasters

Nearly seven decades of internal conflict in Myanmar have harmfully affected the lives of hundreds of thousands of civilians in Myanmar's border areas. WHO has estimated that more than one million people are internally displaced in the eastern border area of Myanmar (WHO, 2013a). Intercommunal violence that broke out in northern Rakhine State, Meiktila in Mandalay Region, parts of Bago Region and Lashio in northern Shan State posed serious threats to reforms under way in Myanmar – although these have now subsided, the areas are still under tension.

Table 1.10 Selected health-related MDG indicators for MDGs 1, 4, 5 and 6 of Myanmar, Bangladesh, Cambodia, Lao People's Democratic Republic and Viet Nam

Indicator	Myanmar		Bangladesh		Cambodia		Lao PDR		Viet Nam	
	Oldest data	Most recent data	Oldest data	Most recent data	Oldest data	Most recent data	Oldest data	Most recent data	Oldest data	Most recent data
MDG 1: Eradicate extreme poverty and hunger										
Underweight children under 5	32.5 (1990)	29.6 (2003)	61.5 (1990)	41.3 (2007)	42.6 (1996)	28.8 (2008)	39.8 (1993)	31.6 (2006)	36.9 (1993)	20.2 (2008)
MDG 4: Reduce child mortality										
U5MR (per 1000 live births	107.4 (1990)	62.4 (2011)	138.8 (1990)	46 (2011)	116.7 (1990)	42.5 (2011)	147.7 (1990)	41.9 (2011)	49.9 (1990)	21.7 (2011)
IMR (per 1000 live births)	76.7 (1990)	47.9 (2011	96.5 (1990)	36.7 (2011)	85.1 (1990)	36.2 (2011)	102.1 (1990)	33.8 (2011	36.1 (1990	17.3 (2011)
MDG 5: Improved maternal health										
MMR (per 100 000 live births)	520 (1990)	200 (2010)	800 (1990)	240 (2010)	830 (1990)	250 (2010)	1600 (1990)	470 (2010)	240 (1990)	59 (2010)
Births attended by skilled personnel (%)	46.3 (1990)	63.9 (2007)	9.5 (1993)	26.5 (2010)	34 (1998)	71 (2010)	19.4 (2010)	20.3 (2006)	77.1 (1997)	87.7 (2006)
MDG 6: Combat HIV/AIDS, malaria and other diseases										
HIV incidence (% of population aged 15–49)	0.2 (1990)	0.6 (2009)	NA	NA	0.5 (1990)	0.5 (2009)	0.1 (2003)	0.2 (2009)	0.1 (1993)	0.4 (2009)
TB prevalence (per 100 000) (mid-point)	894 (1990)	600 (2010)	493 (1990)	410 (2011)	1258 (1998)	660 (2010)	157 (1990)	130 (2010)	395 (1990)	333 (2009)
Malaria death rate per 100 000 population, all ages	NA	17 (2008)	NA	NA	NA	4 (2008)	NA	1 (2008)	NA	0 (2008)

U5MR: under-five mortality rate; IMR: infant mortality rate; MMR: maternal mortality ratio; NA, no data available.

Source: http://mdgs.un.org/unsd/mdg/default.aspx (accessed 27 March 2013).

Myanmar is also prone to natural disasters with its coastal regions being exposed to cyclones and tropical storms, and the whole country at risk from earthquakes.

Cyclone Nargis, a category 4 severe cyclone (one minute maximum sustained wind of 211–250 km/hour), is believed to be the worst recorded natural disaster in Myanmar's history. On 2 May 2008, it struck the Ayeyawady Delta region, 250 km south-west of Yangon, and worked its way inland reaching Yangon late that night. Exact numbers of people affected or killed are unavailable, but estimates suggest that 84 537 people were killed, with another 53 836 missing, presumed dead, and some 2.4 million others were severely affected. Thirty-seven townships were significantly affected by the cyclone in Ayeyawady and Yangon regions, the worst being in Ayeyawady Region. With the destruction of 130 health care facilities and significant damage to another 500 facilities in other sectors, Cyclone Nargis had a severe impact on the health system and its capacity to deliver essential services (Government of the Union of Myanmar, ASEAN & UN, 2008).

The Post Nargis Recovery and Preparedness Plan (PONREPP) was approved by the Tripartite Core Group (Government of the Union of Myanmar, ASEAN and United Nations partners) in December 2008. Keeping harmonization of PONREPP with government recovery planning as an objective, emphasis was also put on transition from post-disaster emergency assistance to longer-term humanitarian assistance.

The outcome of Cyclone Nargis demonstrated the resilience of the affected villages and the capacity of communities of all ethnic and religious groups to help themselves and implement relief activities harmoniously. Traditional social welfare support systems played a role at village level. New self-help groups were formed spontaneously by survivors. Such participation and involvement of village and township communities became an essential guiding principle for the implementation of the health aspects of PONREPP.

Through such people's efforts, resilience of the community at the grassroots level, and assistance from international organizations, Nargis-affected areas are making a gradual recovery. Following this devastating cyclone, opportunities for INGOs and other partners to work with the Ministry of Health (MOH) in a collaborative manner in the Ayeyarwady delta area have increased dramatically.

One example is the implementation of Joint Initiative for Maternal, Newborn and Child Health (JIMNCH) programme in the areas most affected by Cyclone Nargis – five townships in the Ayeyawady delta region – beginning in 2010. JIMNCH is an innovative partnership that takes a comprehensive approach to health-service delivery at township level, aiming to deliver an essential package of low-cost, high-impact maternal, newborn and child health (MNCH) interventions, thereby increasing access to such health care among poor and hard-to-reach populations.

The services are delivered through collaboration between township health authorities and different implementing partners – five INGOs (Merlin, Save the Children, IOM, Relief International and Medicins du Monde). Key priorities included developing coordinated township health plans; improving emergency referral systems; and demand-side (community-based) interventions.

2 Organization and governance

Chapter summary

The Ministry of Health (MOH) is the major player in the health sector as a governing agency as well as a provider of comprehensive health care. However, many key players are changing roles with the evolving political and administrative circumstances. The health system has been shaped by the five distinct periods of administrative regimes and political systems. The government used to be the main source of financing, with provision of services virtually free until user charges were introduced in the form of cost sharing in 1993; since then household out-of-pocket payment has become the main source of finance. The health system comprises a pluralistic mix of public and private systems both in financing and provision. The Department of Health (DOH), one of the seven departments of MOH, is the service provider and also takes the regulatory functions of the Ministry in protecting the health of the people. The network of hospitals and health centres (which extends down to village level) provides preventive and curative services ranging from primary to tertiary care. Inadequate managerial capacity and the lack of proactive mind-set among health workers at local level (inherited from the previous political environment) are challenges that need to be overcome to make decentralization smooth and effective. The National Health Plan (NHP) remains an integral part of the comprehensive national development plan. Successive NHPs have been developed taking into consideration health needs and the policy and developmental context of the country, the need to honour various international commitments, the determinants of health, and the need to build a strong health system. The National Health Committee (NHC), constituted in 1989 as part of the policy reforms, is a high-level interministerial policy-making body concerned with health matters. NHC played an instrumental role in providing the mechanism for intersectoral collaboration and coordination. There is no formal coordinated social protection mechanism to protect and prevent families from falling into poverty as a result of health payments. Only

a small proportion of formal-sector workers are covered by the current formal social-security system. The government has started to take the initiative to introduce formal social protection in the country and MOH is in the process of piloting and introducing some community-based and demand-side approaches as interim measures while the Social Protection System is in the developmental stage. The current Health Information System comprises hospital information, public-health information, human-resources information and logistic information. The Central Epidemiology Unit of DOH is a national focal point for communicable-disease surveillance and response, responsible for disease surveillance. Health technology assessment is an area in which the health sector needs capacity development. DOH is the main organization designated to regulate health-care providers, pharmaceuticals, medical devices and aids, and capital investment. Previous political situations and restrictions made patient empowerment more of a concept than practice.

2.1 Overview of the health system

The health system of Myanmar has evolved with changing political and administrative situations, and the relative roles of the key players are also changing. The Ministry of Health (MOH) remains the major player as a governing agency as well as a provider of comprehensive health care. Health service provision is extended down to rural settings through a network of health care facilities at different administrative levels. The organization of MOH is described in more detail in section 2.3. The government used to be the main source of financing with provision of services virtually free until user charges were introduced in the form of cost sharing in 1993, when private out-of-pocket (OOP) payment became the main source of finance (WHO, 1997). The health system comprises a pluralistic mix of public and private systems in both financing and provision.

In addition to the MOH, other ministries also provide health care, mainly curative, for their employees and their families, including the Ministries of Defence, Railways, Mines, Industry I, Industry II, Energy, Home and Transport. The Ministry of Labour, Employment and Social Security has set up three general hospitals – two in Yangon and the other in Mandalay – to render services to those entitled under the social security scheme according to the Social Security Act 1954.

The commercial private sector mainly provides ambulatory care, though some private institutional care has developed in Yangon, Mandalay and other

large cities in recent years. Funding and provision of care is fragmented. Commercial private health care is regulated in conformity with the provisions of the law on Private Health Care Services. The Myanmar Medical Association (MMA) and its branches provide a link between the private providers and their counterparts in the public sector, so that private practitioners can also participate in public health care activities. The private not-for-profit sector also provides ambulatory care with some outreach services.

Traditional medical practices, in existence even before the introduction of modern medicine into the country, are also thriving both in the public and private sectors because of public acceptance and support and encouragement from the government. The MOH is also financing and providing traditional medical services throughout the country.

2.2 Historical background

The health system was shaped by the five distinct periods of administrative regimes and political systems (see Table 2.1). These were the colonial period from 1886 to 1948, parliamentary period from 1948 to 1962, Revolutionary Council and Burma Socialist Programme Party (BSPP) period from 1962 to 1988, and the military-led State Law and Order Restoration Council (SLORC) and the State Peace and Development Council (SPDC) period from 1988 to 2011. After the 2010 national election, significant social reconciliation provided high hopes for significant improvement in the health system.

2.2.1 The colonial period (1886–1948)

Myanmar inherited the health system introduced by the British. After the complete colonization of the country in 1886, indigenous practitioners trained in the Ayuvadic tradition were deprived of status and credibility and replaced by medicine from the colonial authorities (Furnivall, 1956 cited in Rudland, 2003). The focus of the colonial medical department was hospital care, vaccination against communicable diseases and sanitation. Health improvement was far from satisfactory and the incidence of communicable diseases remained high. A high proportion of doctors were non-native as few natives were ready to take the long and arduous medical course. Most doctors were concentrated in towns and most of the population continued to seek health care from indigenous medical practitioners and traditional birth attendants in the villages (Tinker, 1959).

2.2.2 The parliamentary period (1948–1962)

After independence in 1948, the services of large numbers of trained foreign medical and other health personnel were terminated. Sickness took great toll among the rural people. The health of urban dwellers did not fare well either and the people were malnourished. The widespread armed insurrection further aggravated the situation and almost all medical and health services came to an abrupt halt. The government could not rebuild the shattered health system until 1951. In 1954, the Pyidawthar Plan (a long-term programme for economic and social development for the country) was drawn up, which included a National Health Programme. The objectives of the National Health Programme were stated as: ensuring full health of the people, reducing mortality including that of expectant mothers and infants, and wiping out endemic and epidemic diseases (Economic and Social Board, 1954; Tinker, 1959). High maternal and infant death rates, prevalence of major communicable diseases (malaria, tuberculosis, sexually transmitted infections and leprosy) and outbreaks of smallpox, plague and cholera with poor rural health care infrastructure and status were the major health problems.

After independence, the public health sector was reoriented to a socialist style of welfare. A rural health scheme was initiated in 1951 with the establishment of a Health Assistant Training School in Rangoon (Yangon) (Tinker, 1959). Key parts of the health sector, such as Women and Child Welfare and Child Health Services, were set up as a separate directorate resulting in inefficiency through overlapping activities (UNICEF & WHO, 1980 cited in Rudland, 2003). Following reorganization of health services in 1953, with the assistance from the World Health Organization (WHO) these independent directorates were unified into a single directorate called the Directorate of Health Services, forerunner of the current DOH (MOH, unpublished information, 2004).

2.2.3 The BSPP period (1962–1988)

The Revolutionary Council was quite progressive in implementing a complete nationalization of health services in order to achieve universal health care. Social development became an even greater priority of the state and the main motivation of health policy was to achieve equality and social justice, with an emphasis on addressing the urban–rural gap in services (Taylor, 1987 cited in Rudland, 2003). The first major reforms in the health sector, designed to achieve universal health care, were the abolition of private wards in hospitals in 1963 and then the nationalization of private hospitals in 1966.

In 1965, the Directorate of Health Services was again reorganized to expand the coverage of health services to reach rural areas, to ensure a uniform increase in the level of health of the Union (country), to integrate health services, to eliminate duplication of work through unification of different sections of the health service, and to decentralize health care administration by delegation of authority to the divisional and township health departments. In addition to undertaking reorganization at the central level, an intermediate level of health administration was readjusted in 1975 – now called division/state (regional/state) health departments. Townships became the basic health care units at the peripheral level and Township Medical Officers (TMOs) were assigned responsibilities for all health services (curative and preventive) including the rural population (Health sector development in four eras, MOH, 2004, in Myanmar language unpublished; Ko-Ko, Thaung & Soe-Aung, 2002).[13]

Later in 1965 some Rural Health Centres (RHCs) and dispensaries in some strategically located large villages (population 30 000–40 000) were upgraded to station hospitals, which were operated by Station Medical Officers supported by Clinical Nurses and paramedics (Ko-Ko, Thaung & Soe-Aung, 2002). A Station Medical Officer, under the supervision of the TMO, was responsible for both curative and preventive (public health) services for the area (including rural population) under their jurisdiction.

Formal long-term health planning was revived under the BSPP. From 1978 onwards, a series of four-year People's Health Plans (PHPs) were drawn up, based on Health for All (HFA), as well as the Twenty Year National Plan for Economic Development (1973–1993). The health system under the BSPP was conceptually a continuation of the Revolution Council's policy. In order to implement primary health care (PHC), the BSPP introduced voluntary health workers – Community Health Workers (CHWs) and Auxiliary Midwives (AMWs) – to take health services deeper into the community (O'Brien et al., 1985 cited in Rudland, 2003). Even at the beginning of the large policy commitment to HFA, insufficient funds were spent on the social sector. In 1978, expenditure on health remained at 1% of gross domestic product (GDP). During the implementation period of the first PHP, only 30% of total expenditure on health went to basic health care and public health activities. About 70% of expenditure was still going to hospital services, in particular to pay salaries. Despite PHC

13 The current and official designation of a Township Medical Officer is Head of Township Health Department. However they are most commonly known and addressed as TMOs.

being the major goal of health policy, it remained resource-deprived and mismanaged (UNICEF & WHO, 1980 cited in Rudland, 2003).

2.2.4 The SLORC and SPDC period (1988–2011)

Overall, the capacity of the health sector had started to decline by the late 1980s and considerably so by the 2000s. This was mainly due to lack of government investment in the health sector and reliance on household OOP expenditure to finance health. While health was not a key part of government ideology as it was prior to 1988, the government had taken the obligation upon itself by including health improvement as one component of transition and development (Rudland, 2003). Like all major decision-making in Myanmar, health policy came directly from the top. The National Health Committee (NHC) was formed on 28 December 1989 as part of the policy reform. The NHC was instrumental in providing a mechanism for intersectoral collaboration and coordination. One of the first acts of the NHC, in 1993, was to develop the 15-point National Health Policy (MOH, 1999, cited in Rudland, 2003). One significant change in health policy was the emphasis on expanding health services to the border areas. This could also be seen as an effort to gain the trust of ethnic groups and ensure political stability.

The National Health Policy broadly informed the direction of the National Health Plans (NHPs), which were formulated every five years. The first NHP (1991–1992) was formulated as a transition from last socialist-based PHP. It has been followed by a series of NHPs from 1993 to 2011 (MOH, 2012). The process by which the NHPs were formulated remained much the same as during the socialist era.

Despite the general commitment of the government to strengthening and updating the PHC services, the provision of recurrent budget for staffing, maintenance of facilities and supply of essential drugs declined and was considered inadequate. To address this problem, the government introduced various strategies and measures including the Community Cost Sharing (CCS) scheme to increase community participation, private-sector involvement and cost recovery (ADB, 1996). To protect the poor from financial burden related to seeking health care, exemption mechanisms were also introduced (MOH & WHO, 2010).

2.2.5 The democratization period (2011 to date)

Following elections on 7 November 2010, a series of laws were promulgated governing the transition to the new constitutional order and government. As Myanmar entered a new political phase and the SPDC Government handed over power to the next generation of leaders on 31 March 2011, there was a critical window of opportunity to encourage greater openness and reform. Expenditure for health was raised considerably in 2012–2013 and, despite the increased in government expenditure on health, the Community Cost Sharing (CCS) scheme is still in place and various health financing mechanisms are being piloted, including subsidized emergency referral scheme, hospital equity fund, maternal voucher scheme, free direct care by nongovernmental organizations (NGOs), and treatment subsidies provided through local foundations and community-based organizations (CBOs) across the country. The government provides some coverage for the poor through Hospital Trust Funds (MOH, 2012). In this period, a large influx of international development partners and donor funding pose challenges to the government in harmonizing and ensuring that partners adhere to the Paris Declaration on Aid Effectiveness.

2.3 Organization

The MOH is the major organization responsible for raising the health status of the people and accomplishes this through provision of comprehensive health services, namely promotive, preventive, curative and rehabilitative measures. The MOH is responsible for planning, financing, administrating, regulating and providing health care; it is headed by the Minister assisted by two deputy ministers. The MOH has seven departments, each under a director general: Department of Health Planning (DHP), Department of Health (DOH), Department of Medical Science (DMS), DMR (Lower Myanmar), DMR (Upper Myanmar), DMR (Central Myanmar)[14] and Department of Traditional Medicine (DTM). (See Fig. 2.1.)

14 Two new DMRs were mandated to be established in addition to DMR (Lower Myanmar) with the intention of focusing more on research on traditional medicine and on those areas of research that have regional significance. Both departments have had to function at less than sanctioned strength because of difficulties in recruiting and retaining competent and motivated technical staff. While DMR (Upper Myanmar) is able to manage to function, in collaboration with academic institutions in Mandalay and international partners, as a focal of research activities upcountry, DMR (Central Myanmar) is now in the stage of dissolution.

Table 2.1 Health system development in the five political periods

	1886–1948			1948–1962			1962–1988		1988–2011		2011–
Duration (years)	56 (1886–1942)	3 (1942–1945)	3 (1945–1948)	10 (1948–1958)	2 (1958–1960)	2 (1960–1962)	12 (1962–1974)	14 (1974–1988)	4 (1988–1992)	19 (1992–2011)	
Period	British Colonial	Japanese rule	British Colonial	Parliamentary	Care Taker (Military)	Parliamentary	Revolutionar Council (Military)	BSPP (Military backed)	SLORC (Military)	SPDC (Military)	Democratization and Reconciliation
Constitution	None			1947			Abolished	1974			2008
Country name	Burma			Union of Burma			Union of Burma	Socialist Republic of the Union of Burma	Union of Myanmar		Republic of the Union of Myanmar
Political/ economic ideology	Capitalist colonialism			Welfare state – socialist leaning			Burmese way to socialism		Market economy, political and economic sanctions		Market economy
Health policy and strategies	No definite policy or strategies Focusing more on curative and controlling epidemics			Controlling major infectious diseases Maternal and child health (MCH) Expanding rural health services			Health for All (HFA) and primary health care (PHC) Prevention oriented Reducing urban–rural health gap		HFA ideology from Declaration of Alma Ata on PHC; rural and border health development, MCH services, communicable-disease control, health system strengthening		Universal coverage, social security schemes amended, unclear policy on financial risk protection for the poor and informal sector, health system strengthening, determinants of health
Health service provisions	Traditional medical practices replaced by medicine from colonial power Urban oriented			Health service expansion to rural areas			Rural expansion		Hospital centric, weakening township health systems, but health development in several border areas		Rapidly increased role of private provision, increased role of INGOs and NGOs following Nargis continued
Health financing	Private payment			Free service at public facility through government revenue					Introduction of user charges in 1993, resulting in high proportion of OOP for health		Increased government expenditure on health, but still low. High OOP, significantly increased donor funding
Life expectancy at birth and U5MR	NA NA			43 (1960-1962) NA			52 146		61 86		65 62
Challenges	High epidemics of infectious and tropical diseases			Rebuilding health system weakened by departure of foreign doctors and health personnel, and shattered by armed insurrection			Low government spending for health. PHC remained resource-deprived and mismanaged		Hospital-centric investment, though underused, while township health system deteriorating		NCD in light of a few unfinished infectious diseases agendas. Aid effectiveness/donor harmonization, expansion of financial risk protection to the poor and informal sector

U5MR: under-five mortality rate; NA: data not available; OOP: out-of-pocket expenditure; NCD: noncommunicable disease.
Source: Asia Pacific Observatory on Health Systems and Policies

2.3.1 Health services provided by MOH

The DOH is the main service provider and also handles the regulatory functions of the Ministry in protecting the health of the people. The network of hospitals and health centres, expanding down to village level, provide curative services ranging from primary to tertiary health care. Township health departments, managing the township health system, are the backbone of PHC and provide comprehensive health services at the local level. At the regional administrative level, Regional and State Health Departments provide supervisory and technical support, while at the same time managing the provision of tertiary care and referral services.

With growing complexities in the production, sale and distribution of food and medicines, the current organizational set up of the Food and Drug Administration (FDA) Division under the DOH can no longer cope with the regulatory functions assigned to it (see section 2.8.3). Preparatory measures are now in place for upgrading the FDA into a department.[15]

Along with service provision, the DHP and the three DMRs play important roles in generating information and evidence for decision- and policy-making. The DHP in particular is the focus for national health planning and for the study of health financing issues. The DMS is responsible for managing universities and training institutes, and for producing all categories of human resources for health (HRH) deployed in the country. Traditional medical care is provided by the DTM through traditional medicine hospitals and clinics; their services are provided independently from the modern medicines, however, although the concept of integrated service delivery has been widely discussed. The DTM also regulates traditional medical practitioners and manufacturers of traditional medicine.

Each department works independently according to its own objectives, mandates and strategies through which it contributes to the realization of the ultimate (Ministry) objectives of raising the health status and prolonging the lives of the people. Although coordination and direction are provided at the Ministry level, the ways the activities are carried out by individual departments are more vertical in nature because of

15 The FDA is now established as a new department with increased staff strength and an organizational set up extending to the regional and state levels. This is to strengthen its capacity to meet current needs as well as to respond to the growing complexities related to control of food and drugs. It may take some time for the new Department to function fully while staff positions are being filled and the Department's capacity strengthened.

the structural arrangements (see Fig. 2.1). A mechanism (institutional arrangements) at the Ministry level providing strategic vision and direction with a common strategic framework and for monitoring, supervision and evaluation is needed to ensure that each department, though independent, works more cohesively with the departmental objectives and that their strategies are better aligned with the goal and objectives of the Ministry. That is to say that a mechanism is needed to ensure that the individual departments fit well together rather than simply performing well individually, in the endeavour to reach the common goal and objectives. Additionally, many health and health care problems are local (at township level) and how the activities of different departments can be streamlined at this level needs to be considered. The structure is there – what is needed is an effective coordination mechanism and more importantly the will to make it happen.

2.3.2 Private health care provision

The private health sector has also been a major source of service provision since inception of the health system in the country. Services provided are mostly confined to urban settings and were initially limited to primary and ambulatory care. More intensive and institutional care is now available in big cities. Most people are inclined to seek private health care on becoming aware of their illness. But severe cases requiring specialized care mainly rely on the public facilities. The private sector has the potential to grow further and yet it still has to rely on the medical professionals working in public facilities, who are allowed to practise privately after office hours. The private sector has expanded rapidly and is playing an important role in the provision of ambulatory care. Access to care when rationed by capacity to pay rather than health need jeopardizes the poor.

2.3.3 Protection of consumers (including clients)

Ensuring food and medicine safety is legislated by the National Drug Law 1992, the National Food and Drug Law 1997, the Law relating to Private Health Care Services 2007 and the Public Health Law 1972. However, there is no specific consumer protection act. The MOH and its agencies have the statutory responsibility to protect consumers. Previous political situations were not favourable for forming interest groups like patient/ consumer groups, but consumer-protection groups are now in the process of formally registering with the Ministry of Home Affairs.

2.3.4 Providers and professional organizations

There have been professional organizations working in collaboration with MOH for decades. These are the Myanmar Academy of Medical Science (MAMS), Myanmar Medical Association (MMA), Myanmar Dental Association (MDA), Myanmar Nurses' Association (MNA) and Myanmar Health Assistant Association (MHAA). MAMS is composed mainly of eminent retired and in-service health professionals and academicians; it plays a think-tank role in providing advice and advocacy for health care, especially on important and cutting-edge health issues in medical science and the health system. The remaining associations, although composed of health care providers like doctors, dentists, nurses and health assistants, function more like professional bodies rather than as unions. MMA in particular is the oldest and largest body, established in 1949, and having over 17 000 members forming 30 specialist societies with over 80 branches expanding all over the country. MMA provides opportunities for continuing professional development, and academic and social activities among members. It is also involved in public-health activities in collaboration with United Nations agencies, local and international NGOs (Hla, 2012).

Previous political and administrative environments were not favourable for these associations to be fully autonomous and they had to remain purely professional. With the changing political environment and growing freedom and opportunities, these associations can become more autonomous and active, and more interest groups are expected to be formed in the near future. For example, MMA is now taking a leading role in the formation of a Medical Protection Society in the country, and other categories of providers like pharmacists and medical technologists are now in the process of forming their own associations.

2.3.5 Health policy formulation

Health policy formulation is still mainly top-down. The NHC formed in 1989 is a high level inter-ministerial policy-making body concerned with health matters. Previously, the Committee was headed successively by Secretary 1 of the SPDC and the Prime Minister. It has been chaired by the Minister for Health since 2011. NHC sets the policy agenda and DHP takes the facilitating role along with the secretariat function of the Committee for implementing the policy decisions. Major implementers of the main policy decisions are DOH and DMS. Assessment and evaluation of each cycle of NHPs is undertaken before the formulation of the next NHP. For instance, findings and recommendations from the evaluation of the NHP

(2001–2006) were used as a basis for identifying health problems when the next cycle of NHP (2006–2011) was formulated (MOH, 2006). Measures are now in place to review and revise the current National Health Policy (1993). An optimistic outlook is that there will be an opportunity for more inclusiveness and participation by stakeholders in the process given the current political climate.

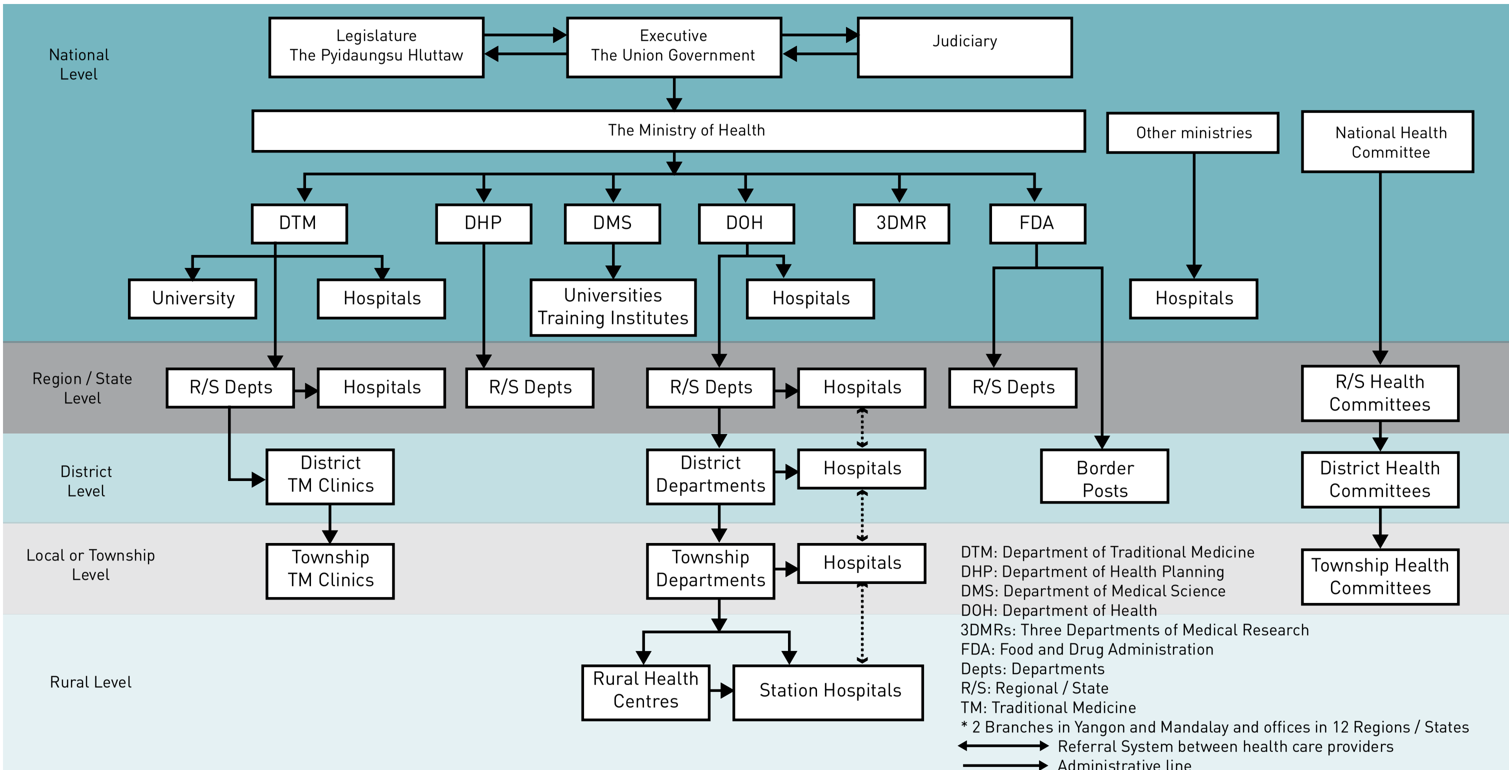
2.4 Decentralization and centralization

Health-sector decentralization was introduced with the formation of Regional Health Departments in 1965. Decentralization was more or less in the form of de-concentration and the Regional Health Departments (known as Divisional or State Health Departments) were accorded the responsibility to supervise and the authority to place and transfer health staff including medical doctors assigned to their respective regions. The financial management power was limited to spending the government budget allotted to them. In the periods following the 1990s, the DOH retained the authority of placing and transferring doctors and staff, although the regional health directors were allowed to take temporary measures for filling vacant posts when need arose.

For regulatory functions, regional/state and township health departments can take monitoring and enforcement roles, while the central authority takes the functions of setting rules and standards as included in the provisions of respective health laws.

Formation of regional/state legislatures and government according to the new Constitution raises expectations and a prospect for more decentralization. The road to decentralization may not always be smooth and it is still in process, so patience, among other requirements, is needed. The previous requirement to unquestioningly follow the mandates had left health care managers less proactive and capable. Inadequate managerial capacity and the more reactive mind-set inherited from the previous political environment are challenges to be overcome if decentralization is to be smooth and effective. On the other hand, being a late-comer has provided opportunities – the country needs to have the wisdom to learn from the experiences, lessons and, most importantly, errors of others rather than its own. There is a need to determine where power should lie and to what extent (Mooney, 2012).

Figure 2.1 Organization of the health system Myanmar in 2013



Source: Asia Pacific Observatory on Health Systems and Policies

2.5 Planning

The NHP has formed part of the National Comprehensive Development Plan (NCDP) from the very beginning. Successive NHPs were developed taking into consideration the health needs and the policy and developmental context of the country, but in a top-down government-driven manner, lacking wider representation from all stakeholders (patient groups, community and private health care providers). The plans also took into account the need to honour commitments made internationally, cross-cutting issues like the growing importance of determinants of health, and the need to build a strong health system (MOH, 2012). Since they are comprehensive, national plans provide a broad strategic framework for planning human resources, infrastructure and capital development. A special four-year plan for promoting national education was developed in 2001 for the health and education sectors. The plan for the health sector provides guidelines to reinforce existing strategies for further improving the situation of HRH.

Work is under way to develop regional health plans and integrated township health plans in line with the NCDP. The NCDP consists of a set of four 5-year plans covering a 20-year period from 2011 to 2031, and forms part of the second stage of the reform process to enhance economic development and raise the living standard of the people. The MOH is now in the process of formulating the National Comprehensive Plan (2011–2031) (Health Sector) in line with the NCDP. The MOH formed the central committee and work committee, comprising responsible persons from the Ministry's departments, related ministries, social organizations and NGOs, to undertake plan-formulation activities in a coordinated way. The central committee, chaired by the minister of health, was responsible for directing and coordinating the work of the work committee, while the work committee took the more technical functions of plan formulation. DHP is the focal department for formulating the NHP. NHPs are formulated within the guidelines and policy frame of the state. Sectoral involvement in formulating the current NHP was limited mostly to the governmental sector. Previous health plans, named People's Health Plans (PHPs), were formulated using a country health programming (CHP) approach. PHP committees established at various level of administration down to the village level planned, implemented and evaluated health related activities in their respective jurisdictions according to the national plan. With the change of government in 1988 and after the closing period of the third PHP (1986–1990), health plans were known as NHPs and formulation of successive NHPs was based

on an adaptation of this approach. Sectoral involvement, which was initially strong in the process of plan formulation, could not be sustained and strengthened. Involvement of other stakeholders (patient groups, community and private health care providers) though necessary was not encouraged.

2.5.1 A multisectoral disaster risk-management and preparedness mechanism

A multisectoral disaster risk-management and preparedness mechanism had been established with the formation of a National Disaster Preparedness Central Committee. This committee was established well before the 2008 Nargis incident. A National Disaster Preparedness Management Working Committee and 10 subcommittees were formed under the Central Committee. The health sector is involved in the Central Committee, Working Committee and relevant subcommittees. Specifically, the health sector was assigned to chair the health subcommittee and entrusted with the tasks of formulating and taking action for emergency health care; preparing emergency hospitals, clinics and mobile clinics for the affected regions; imparting necessary training on emergency health care; stocking necessary medicine and having a plan for storage and distribution; and preparing for epidemic prevention (Anon., 2009). In July 2013, the National Disaster Management Law was enacted for which regulation, implementation and monitoring progresses are mandated to the Ministry of Social Welfare, Relief and Resettlement. The Ministry also functions as a coordinating body.

2.5.2 Preparedness for health-related hazards

The MOH has been implementing International Health Regulations 2005 (IHR 2005) by developing, strengthening and maintaining the capacities for detection, reporting and responding to public health emergencies of international concern, and providing routine inspection and control activities at international airports, seaports and ground crossings. After assessing the core capacities of the country, the communicable diseases law was reviewed and then amended in January 2011 to meet the core capacities required for implementation of IHR 2005 (MOH, 2012).

2.5.3 Managing health-related international development assistance

The deteriorating political situation in the country since 1988 had led to political and economic sanctions being applied against the government and overseas development aid (ODA) dropped sharply when most of

donors pulled out and United Nations agencies froze operations. Over 20 years after the suspension of development assistance, overall levels of aid to Myanmar remained extremely low compared with other developing countries, adversely affecting health-system development. The country received less than US$ 6 per capita, compared with US$ 62 per capita for Lao People's Democratic Republic, US$ 52 per capita for Cambodia and US$ 42 per capita for Viet Nam (International Crisis Group, 2011).

The opening of a country office in 1999 by the Joint United Nations Programme on HIV/AIDS (UNAIDS) led to changes in the traditional mode of operations of some of the agencies. To address the problems arising from different strategies, 14 thematic working groups existed to coordinate the work of the agencies on important development issues (UN Myanmar, 1997 cited in Rudland, 2003). In 2004, the Global Fund to Fight AIDS, Tuberculosis and Malaria awarded programme grants to Myanmar. Due to political pressures outside the country, Myanmar was one of the two countries in the WHO South-East Asia Region where the principal recipient for the funds was not the government. The United Nations Development Programme (UNDP) was appointed as principal recipient for operation of the Global Fund.

The Myanmar Country Coordinating Mechanism (M-CCM) was established in October 2008 to oversee the national response related to the three diseases of HIV/AIDS, TB and malaria, and to coordinate the efforts of all partners. M-CCM comprised representative of government bodies, United Nations agencies, bilateral donors, NGOs and professional groups, CBOs, faith-based organizations, INGOs operating in the country, private sector, people living with and/or affected by HIV/AIDS, TB or malaria and the academic sector. M-CCM is mandated to develop and submit grant proposals to the Global Fund and to provide effective grant oversight and support the implementation of funded projects (M-CCM, 2012).

Following the termination of grants by the Global Fund in 2005, a new fund called the Three Diseases Fund (3DF) was developed in 2006 as a replacement by a group of six donors – the European Commission, Swedish International Development Agency (SIDA), the Netherlands, the United Kingdom's Department for International Development (DFID), Norway and the Australian Agency for International Development (AusAID). The consortium selected United Nations Office for Project Services (UNOPS) to serve as a fund manager (because of its comparative advantage as an independent United Nations organization able to provide financial and project management services to other agencies) and act as principal recipient.

Aid modalities with funding mechanisms bypassing the government and directly supporting INGOs, NGOs and external development partners for their direct operation on the ground raised a concern that these may lead to further weakening of a fragile public health system. There is the potential for emergence of parallel health care structures and programmes that do not necessarily follow national norms and standards (WHO, 2008a). Policy-makers voice their concerns that international development partners have to comply with the Paris Declaration on Aid Effectiveness.

Following the inauguration of the civilian government and normalization of external relations, there has been an increase in the amount of inbound international loans and foreign investment. In response, the government formed the Central Committee for Management of Foreign Grants/Aid, the Work Committee and the National Economic and Social Advisory Council to ensure effective management of foreign grants and aid, and smooth functioning. The government has been cooperating with donor countries and international organizations in accordance with the five principles of the Paris Declaration – ownership, alignment, harmonization, result-orientation and mutual accountability. The government aims to take the driver's seat in utilizing the larger proportion of aid received for the sake of the nation. The Nay Pyi Taw Accord, adopted at the First Myanmar Development Cooperation Forum (MCDF) in January 2013 with representatives from United Nations agencies, delegates of member countries of the Association of Southeast Asian Nations (ASEAN), donor countries, development partners and international organizations, envisioned effective cooperation between the government and development partners (The President's Office, 2013b). The important fact that is to be fulfilled if the government (MOH) is to take the driver's seat as intended is to have clear vision, agenda and strategies to align the incoming aid to its own needs.

2.6 Intersectorality

The NHC, formed in 1989 as part of the policy reforms, is a high-level interministerial policy-making body concerned with health matters. NHC was instrumental in providing the mechanism for intersectoral collaboration and coordination. It also provided guidance and direction for all health-related activities. NHC was reorganized in April 2011 (MOH, 2012).

As food and drug safety concerns a number of sectors (including agriculture, veterinary, livestock and fisheries, industry, trade, police, general administration and city development committees) and in recognition of the need for integration, the Myanmar Food and Drug Board of Authority

(MFDBA) was formed in 2000. The Minister of Health leads the Board and members are senior officials from other related ministries. Various levels of Food and Drug Supervisory Committees (FDSCs), Food Advisory Committees (FACs) and Drug Advisory Committees (DACs) were formed by MFDBA in 2002 (MOH, 2011a).

The Occupational Health Division of the DOH is the focal point for collaboration with related ministries for ensuring safety in workplaces. MOH is collaborating with the Ministry of Labour, Employment and Social Security for the formation of a National Occupational Safety and Health Committee. In the same way, the Ministry played a major role in drafting the Chemical Safety Law with the Ministry of Industry and other related ministries.

After Cyclone Nargis struck the country in May 2008, the MOH worked with other agencies through the Health Cluster to avert disease outbreaks and levels of malnutrition usually associated with the aftermath of natural disasters (Anon., 2009). The lessons learnt through the experiences and the capacities developed in the areas of early warning, emergency preparedness and response at both central and regional levels following Nargis made the responses to the Cyclone Giri (October 2010) and to the earthquake that hit Shan State (March 2011) more coordinated and effective (MNPED & UNICEF, 2012a).

In line with the National Health Policy, NGOs such as Myanmar Maternal and Child Welfare Association (MMCWA) and Myanmar Red Cross Society (MRCS) are taking some share of service provision and their roles are also becoming important as the needs for collaboration in health become more prominent. One good example is the collaboration of the National Tuberculosis Control Programme with a number of national and international health and development agencies to implement the Stop TB Strategy. Myanmar Women's Affairs Federation (MWAF), MMCWA, MRCS and MHAA are the national NGOs that contribute to TB control and especially to community involvement to reach out to all those infected with TB in the country. International partner organizations are present in 150 townships across all regions and states. To ensure the best use of comparative advantages and to avoid fragmentation and duplication of efforts, regular coordination meetings are held under the TB Technical and Strategic Group (MOH & WHO, 2012).

Recognizing the growing importance of involving all relevant sectors at all administrative levels and mobilizing communities more effectively in health-

related activities, health committees have been established at various administrative levels down to the wards and villages. These committees are headed by the most senior person at the administrative level of the committee concerned and members are drawn from senior managers in government and nongovernmental organizations. Heads of the health departments are designated as secretaries of the committees (MOH, 2011a).

Given these descriptions, intersectoral involvement in health seemed to be strong. In time of need, mobilizing the involvement of sectoral partners, particularly under the leadership of NHC, worked well. However, in order to assess the impact of intersectoral policy and actions on the population's health, the country needs to develop a clear conceptual framework and to have collaborative mechanisms in place.

2.6.1 Engaging private sector

The MMA plays a crucial role in providing continuing medical education for professional development of private general practitioners (GPs) and organizing them to get involved in public health activities. Population Services International (PSI) is also mobilizing private providers to become involved in public health services. Private providers are successfully engaged at a nationwide scale through networks of the MMA and PSI. In 2011, the MMA and PSI involved GPs in 194 and 115 townships, respectively. Together they identify 15% of TB cases nationally (MOH & WHO, 2012). PSI has worked in Myanmar since 1995 and is one of the largest providers of health care products and services in the country. PSI is applying social-franchising approaches, based on commercial franchising strategies, to respond to the health needs of communities; it builds on existing private-sector infrastructure and strengthens the capacity of private clinics, pharmacies and community providers to deliver quality services. Aiming to deliver equitable, at-scale and quality health care to low-income and vulnerable populations through cost-effective delivery mechanisms, PSI has developed Sun Quality Health network – a social franchising network of private health care providers. The network comprises Sun Quality Health (SQH), which serves urban and peri-urban areas, and Sun Primary Health (SPH), which serves rural regions. Founded in 2001, SQH is operating in 207 townships (2013) reaching 1525 providers and SPH (founded in 2008) is working with 1850 providers in 74 townships (Montagu et al., 2013). In a setting where people are relying more on the private sector when seeking health care, mechanisms such as SQH are

claimed to be useful. However, social franchising means that patients still incur OOP costs, even if the payments are made at subsidized rates. The extent of any remaining financial barriers that patients face in accessing these products and services has not been studied. Stronger coordination with the public sector could make public and private measures complementary and enhance efforts to reach the poor.

2.6.2 Reducing inequalities

The concept of equity has been included as part of the basic principles of the country, enshrined in successive constitutions. The National Health Policy (1993) also included an objective to extend health services to rural areas and to the border areas where the ethnic groups are living. In collaboration with the Ministry for Progress of Border Areas and National Races and Development Affairs, more health care facilities have been developed and incentives provided for the health staff working in these facilities . Rural health development was emphasized in the NHPs and, between 2001 and 2005, a Rural Health Development Plan was formulated. With the introduction of user charges in the 1990s, the poor are exempted from paying and other measures were included for protecting the poor. All the public hospitals in the country were instructed to raise and establish trust funds and to use the bank interest earned from these funds to cover the costs of waivers. However, these interventions did not raise sufficient revenue to bring down the OOP payment and financial burden faced by the poor. Consequently, a number of international and local partners designed and introduced community-based financing mechanisms to address this issue. These multiple health-financing schemes with specific project mandates and operational arrangements had limited coverage and were unable to generate sufficient revenues to cover the costs of the poor (DHP, MOH & WHO, 2012). Although there are policy and programmes to make health equitable, there is insufficient evidence indicating how effective they are. Programme monitoring data indicate that disparities still exist in service availability and health outcomes across regions and social economic status (MNPED & UNICEF, 2012b).

There is no formal coordinated social protection mechanism to protect and prevent families from falling into poverty. Only a small proportion of formal-sector workers are covered by the current social security system, which is now in the process of expanding its coverage. The government has started an initiative to introduce formal Social Protection

in the country and MOH is in the process of piloting and introducing some community-based and demand-side approaches as interim measures, while the Social Protection System is in the stage of development (see Chapter 3 for more details).

2.7 Health information management

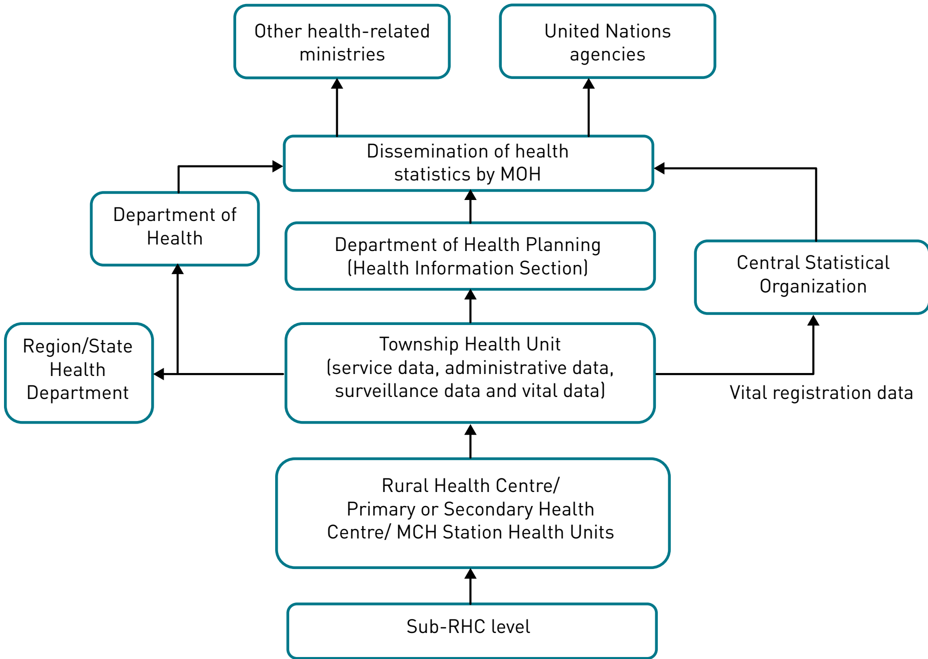
2.7.1 Information system

A health information system in the country began with the introduction of Medical Record System, for which morbidity and mortality situations in public hospitals were collected and reported. In 1978, along with formulating and implementing PHPs, a system of recording, registering and reporting of service activities using a standard format was introduced. The current Health Information System is based on that system, having the concept of a minimum essential data set to reduce the workload related to data management by the Basic Health Staff (BHS).[16]

Data are collected manually by individual BHS using standardized forms on monthly, quarterly and annual bases (depending on the nature of the data collected), and collated at the local facility. All the consolidated data are then sent through the Township Health Department to the DHP and respective Region or State Health Department. Compilation and analysis are done at the DHP (see Fig. 2.2). Dissemination of statistics is through publication of an annual public health statistics report. For better understanding of the definitions of data items included in the forms and for calculating the indicators from these data, BHS are trained and provided with a data dictionary prepared jointly by MOH and the United Nations Children's Fund (UNICEF). Hospital information is collected on a monthly basis from all public hospitals and disseminated through annual hospital statistics reports (see Fig. 2.3). Introduction of an electronic information system was one of the measures identified to strengthen the information system. However, there have been a number of constraints to overcome; namely inadequacy and stability of electricity supply, availability and speed of Internet services and, most importantly, data sensitivity in a setting where security considerations overwhelm everything.

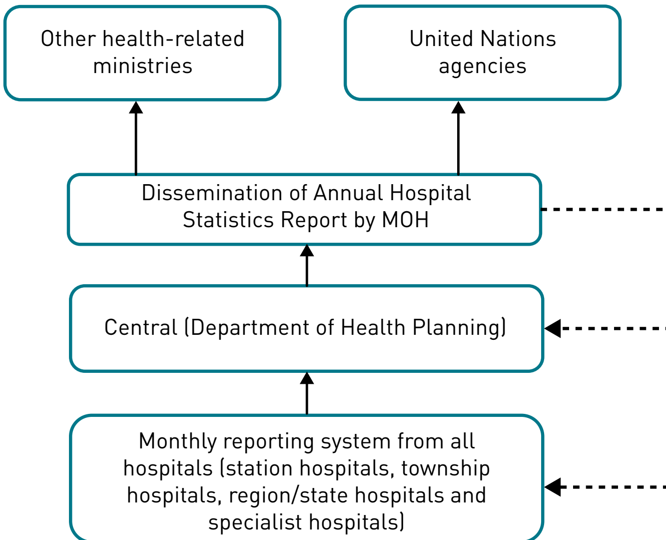
16 BHS are health staff deployed in the peripheral part of the health system (townships and below) to reach more of the population. They are mostly made up of, but not limited to, Health Assistant, Lady Health Visitor, Midwife and Public Health Supervisor.

Figure 2.2 Data flow of public health information system



Source: Asia Pacific Observatory on Health Systems and Policies

Figure 2.3 Data flow of hospital information system



Source: Asia Pacific Observatory on Health Systems and Policies

The current Health Information System comprises hospital information, public-health information, human-resources information and logistical information. The Central Epidemiology Unit (CEU) of DOH is responsible for disease surveillance and the National Surveillance System. According to the Central Statistical Authority Act 1952, the Central Statistical Organization (CSO, which is under the Ministry of National Planning and Economic Development, MNPED) has the responsibility for collecting and compiling, analysing and disseminating statistics for the country.

Assessment of the Health Information System in 2006 indicated that the System has the potential to generate adequate indicators of an acceptable quality. But the System still needs to have adequate policy support and resources, and the information generated needs to be disseminated and used more (DHP & MOH, 2011).

Health care providers in the public sector are mandated to submit the monthly reports by the System. The big gap lies in getting information from the private sector – mechanisms are need to obtain data and information from the private sector. The three departments of medical research under MOH (3DMRs in Fig. 2.1) are also conducting health-related research and there is a policy objective to include health-system research as well. Due to lack of adequate resources and capacity, population-based surveys could not be carried out as frequently as needed. Public participation is attempted through training and deployment of volunteer health workers. These volunteers are required to assist BHS in collecting data and are trained to be able to detect disease outbreaks in their villages.

The Information system can provide both primary and hospital information. Both public-health information and hospital information can provide data disaggregated by regions, and data by gender are available in hospital information. Plans are now in place to include information from the private hospitals.

2.7.2 Health technology assessment

Health technology assessment is an area where the health sector needs to significantly develop and strengthen its capacity. Introducing the concept of essential medicine and rational prescription into the country, along with compiling an Essential Medicine List in the late 1970s can be regarded as a precursor of health technology assessment in the country.

The Myanmar Essential Drugs Programme has, since its inception, developed and revised the National List of Essential Medicines (Table 2.2). Complementary components were larger than the essential list in the first three revisions – this may indicate that the revision process has improved with experience, listing more essential than complementary items in later revisions.

Table 2.2 National list of essential medicines, number of items, 1979–2010

Version	Year of review/ revision	Essential	Complementary	Total
1.	1979	122	132	254
2.	1984	116	124	240
3.	1987	89	122	211
4.	1998	158	26	184
5.	2001	239	80	319
6.	2010	243	100	343

Source: MOH (2010a).

The Essential Medicines List could be (in theory but not yet implemented) used as the basis for procurement and distribution of medicines and for developing National and Hospital Formularies. It could also be used to identify product areas for selective support to the National Pharmaceutical Industry for targeted quality assurance. The Central Medical Store Depot (CMSD) procured a subset of 92 medicines from the essential medicine list in 2010, but the Ministry of Finance did not provide enough funds to procure all the needed essential medicine (Holloway, 2011).

2.8 Regulation

As part of fulfilling the responsibility to improve and protect the health of its citizens, the government has enacted some health laws to provide a legal framework and support for carrying out the activities needed. A majority of the current health laws are related to the public health law promulgated in 1972. Existing health laws may be categorized as: health laws for promoting or protecting health of the people; health laws concerned with standards, quality and safety of care; and laws relating to social organization (see Chapter 7). The national level (i.e. MOH and DOH) takes the role of setting policy and standards, while the responsibility for monitoring and enforcement is at regional and local levels.

2.8.1 Regulation and governance of providers

The DOH is the main organization designated to regulate health care providers. The Medical Care Division of the Department is the focal point for overseeing this function for curative services (hospitals), while the Public Health Division is responsible for overseeing the BHS providing promotive and preventive services. As mandated by the Law relating to Private Health Care Services enacted in 2007, DOH is the central body, and the Medical Care Division is the working unit, responsible for all private health care facilities, including issuance of licenses and supervision. The objectives of the law include: enabling private health services to be carried out systematically as an integrated part of the national health system, and to ensure quality services are provided at fair cost with assurance of accountability. The tasks of monitoring and enforcement of the law are assigned to supervisory committees formed as mandated in the law at various levels of administration. As the public and private health sector are growing fast, the current organization set-up of the Medical Care Division needs to be strengthened in both the number of staff and their technical capacities. Supervisory committees at regional/states and township levels also need to be strengthened.

Continuing professional development (CPD) is organized by the teaching hospitals for the public providers. MMA provides continuing medical education for doctors in the private sector. Relicensing for medical professionals is more of a formality and still does not apply a CPD credit system. Individual interest for self-improvement may be the only incentive for CPD. MMA, in coordination with Myanmar Medical Council (MMC) and MAMS, is proceeding to establish an accreditation system in renewing of licences for medical practice in the country.

2.8.2 Registration and planning of human resources

All universities and training institutes for medical and allied professionals and technicians are under the supervision and control of DMS. Organizations responsible for registration and licensing of the medical and allied professions and the legal basis are described below (see Table 2.3). Note that licensing requirement does not include paramedics and ancillary professions. The respective laws provide bases for licensing and regulation in relation to practices of medical, dental and oral medicine, nursing and traditional medicine. The laws are also meant to enable the public to access qualified and effective health care assistance, to maintain and upgrade the qualification and standard of the health care assistance

(provision) of the practitioners concerned, to maintain and promote the dignity of the practitioners, and to "supervise the practitioners observing" (i.e. ensure that practitioners observe) moral and ethical conduct.

Table 2.3 Registration and licensing of medical and allied professions

Type of profession	Registration and licensing body	Legal basis
Medical doctors	Myanmar Medical Council	Myanmar Medical Council Law (2000)
Dentists	Myanmar Dental and Oral Medical Council	Myanmar Dental and Oral Medical Council Law (1989) Revised (2011)
Nurses and midwives	Myanmar Nurse and Midwife Council	Law relating to the Nurse and Midwife (1990) Revised (2002)
Traditional medical practitioners	Traditional Medical Council	Traditional Medical Council Law (2000)

Source: MOH (unpublished information, 2012b).

The objective of training HRH is to attain an appropriate mix of competent human resources to deliver quality health services. There are 14 medical and allied universities and 46 nursing and midwifery training schools under DMS. Postgraduate training courses are conducted for higher learning. There are no such training institutes in the private sector. Medical education seminars are convened periodically to review, revise and update the training curricula as required.

2.8.3 Regulation and governance of pharmaceuticals

Regulation of pharmaceutical products

According to the National Drug Law 1992, the MFDBA is the highest authority of food and drug regulation and control. The FDA is responsible for enforcing the National Drug Law. Supervisory committees exist at each administrative level – region/state, district and township. The TMO (head of township health department) is a member of the township supervisory committee, which undertakes inspection of all drug outlets in its area. The FDA has delegated authority to the Township Food and Drug Supervisory Committees for issuing and revoking licences for drug outlets in their areas. The FDA has its own Drug Testing Laboratory; approximately 150-250 premarket and 15-30 postmarket drug samples are tested per month. Currently, the lab is not able to do bio-equivalence

testing. The FDA has been upgraded to the level of a Directorate along with expansion of FDA set up at region/state and border trade zone. New staff and inspectors have been recruited to strengthen enforcement and labarotory works.

Pharmacovigilance

Pharmacovigilance is undertaken by the DMR and the FDA and there were three or four adverse drug reactions (ADRs) reported in 2010. The FDA collects and distributes the product safety update information to health care professional and also distributes the ADR forms to heads of teaching hospitals, region/state hospitals, DAC members and MMA. Most hospitals were not undertaking any pharmacovigilance (Holloway, 2011), resulting in low level of ADR reports. Pharmaceuticals are categorized as over-the-counter (OTC) drugs, prescription-only drugs, natural health care products, and controlled drugs.

There is legal provision for preapproval of the advertising of OTC medicines and preapproval for package information inserts for all medicines at the time of registration. There is no dedicated committee to monitor drug promotional activities.

Regulation of wholesalers and pharmacies

By law, a pharmacist is only required to be present in a retail pharmacy if controlled drugs are sold. All pharmacies are supposed to receive a visit at least two times a year from the relevant local supervisory committee and need to renew their licence every three years. If they sell controlled drugs, pharmacies should be visited quarterly and renew their licence annually. A checklist for retail pharmacy inspection covers premises and storage conditions, stock management, drug labelling, presence of banned or expired drugs, knowledge of the retailer and documentation on controlled drugs. Township supervisory committees are supposed to examine all these and report quarterly to the central level (i.e. the Central Food and Drug Supervisory Committee).

Product registration for old molecules already on the market only requires review of all the specifications within a dossier by the FDA, as per ASEAN guidelines. Prior to being considered for registration, new molecules require prior review by a Technical Advisory Committee once information about the product is received by FDA staff. New molecules will only be considered for registration if they are already registered in

the United Kingdom, the United States, Australia, Thailand, Indonesia or Singapore (Holloway, 2011).

Cost-effective use of pharmaceutical-prescription practices

The 2010 essential medicine list, unlike previous versions, has not been subdivided by level of care (primary, secondary, tertiary) beyond a division between the tertiary level and all other levels below the tertiary level. It no longer distinguishes which types of health worker can prescribe which types of drug. There are indications that the districts, townships and primary care facilities to a large extent comply with the list in their prescription practices, while this is not the case with the specialist hospital doctors or doctors in private practice. Prescription practices of many specialist doctors are determined by their perception of the quality of generic products and compliance of the Myanmar Pharmaceutical Factory (MPF) with good manufacturing practice (GMP). It is more likely that higher-level facilities tend to prescribe a greater number of drugs per patient and a lower proportion by generic name or from the national essential medicine list. Prescription by generic name is very low in the tertiary referral hospitals and in the private sector. Existing National Standard Treatment Guidelines published in 2006 are aimed at primary care medical officers and providers (BHS) (Holloway, 2011). All this may indicate that although national medicines and the essential medicine list are in place, effective measures are still needed to influence prescription practices and adherence.

BHS focus public education more on maternal and child health, treatment of childhood illness and vaccination, rather than on improving the use of medicines. While some staff have distributed messages not to request or demand an unnecessary injection, the focus of their messages has generally not been on ensuring compliance with the use of prescription medication.

Drug pricing

Base prices for drugs – imports and drugs manufactured by MPF – are reviewed by the Myanmar Pharmaceutical and Medical Equipment Entrepreneurs Association (MPMEEA) in collaboration with the Ministry of Commerce. Wholesalers are allowed a 5–7% mark-up and retailers a further 5% mark-up for vitamins and 10% for other drugs. In remote areas transport fees will also be added. There appears to be little supervision of prices charged. Currently, about US$ 600 million worth

of drugs is imported every year and it has been stated that the prices of imported drugs are at least four times that of locally produced drugs (Holloway, 2011). Similarly, experience has indicated that the price of anti-TB medicines in the Global Fund programme purchased through the Global Drug Facility was one quarter of the cost of drugs imported and sold locally by the private sector. Sanctions imposed on the military regime resulted in lack of access to international markets, and the poor banking system and foreign-exchange-rate policy had negative impact on the availability of pharmaceuticals at reasonable price.

2.8.4 Regulation of medical devices and aids

CMSD (of DOH) – located in Yangon with two sub-depots, one in Mandalay and the other in Taunggyi, and 11 transit camps – is responsible for: procurement of all medical supplies and medical equipment for all DOH health care facilities; storage and distribution of the medical supplies procured with the government budget; supplies of the various projects with WHO, UNICEF, United Nations Population Fund (UNFPA) and Japan International Cooperation Agency (JICA), and supplies received from national and international donors; and installation and maintenance of hospital equipment.

In procuring, priority is given to direct purchase of drugs produced by state-owned enterprises. If the items are not available or not adequately available from state-owned enterprises, procurement is made from the private sector. Open tender is commonly used. CMSD buys medicines that are in line with the national list of essential medicines.

The tender committee is headed by the Deputy Minister of Health with members including the Director General of DOH, Deputy Director General of Medical Care, and directors from the DOH, particularly Medical Care, with the Deputy Director of CMSD as secretary. Opinions of relevant specialists or experts are also considered in the tender selection process.

2.8.5 Regulation of capital investment

The DOH is responsible for regulating facility development, which is made according to the NHP (i.e. the NHPs are developed within the framework of the overall comprehensive national development plans). Consequently, the Ministries of National Planning and Economic Development and Finance and Revenue are also involved in the regulation of capital investment. Other factors considered in facility development

are population size of the catchment area, distance to the nearest facility, and utilization rate if the facility is to be upgraded. A standard set of equipment, plan of the building and workforce requirement are specified for each type of facility. For equitable distribution of facilities and to ensure that border regions and remote areas are not disadvantaged, facility development in these areas are made according to the projects for 24 special development regions[17] and border area development.

2.9 Patient empowerment

2.9.1 Patient information

There are still no uniform and formal mechanisms in place for providing information to patients to help them make decisions about accessing health services. However, hospital administrators and management committees provide the necessary information when need arises. Most of the time, patients rely on the health staff for the decisions. For ethnic minorities, translation of the information is usually provided by local health staff who can speak the same language and dialect. The habit of seeking for information on the part of the patients and the willingness of the health staff to take time to provide information are to be cultivated along with other means of imparting health information, e.g. brochures and posters.

2.9.2 Patient choice

Patients are totally free to choose the providers and even (geographic) location of facilities. The type of treatment chosen depends on the education level of the patient. People with low education status tend to rely on the health care provider to make the choice. An unpublished study by Nyein Foundation found that those from middle or high social groups tended to seek treatment from health care providers in the town, either private clinics or public facilities. For the poor, the majority of the key sources of care in initial phases of illness include drug shops, traditional practitioners, witchcraft healers, and other traditional practices like *mae-kalaung* scratching, and volunteer health workers or quacks.

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17 Twenty-four special development regions have been designated in the country where health and education facilities are developed or upgraded along with other development activities. Some towns and villages in these regions have also been upgraded to sub-township level with development of infrastructure to ensure proper execution of administrative, economic and social functions.

2.9.3 Patient rights

All the constitutions, past and present, have acknowledged that the state has the duty to fulfil the rights of the citizens to health, not unconditionally but as provided in the policy and as arranged by the state. All these statements seem to fall short of a situation where the state stands as duty bearer and the citizens as right holders. On the other hand, the patient–doctor relationship used to be more of a principal–agent relationship, where the doctors were regarded as representing the interests of patients, which often does not hold true. It will take some time for the citizens (patients) to become aware of their entitlement and claim their legitimate rights.

2.9.4 Complaints procedures

There are no uniform and formal mechanisms and procedures in place for listening to and settling patients' complaints. However, if the patients or their attendants feel that they are being mistreated they can lodge a complaint with the local administration, regional and central health authorities, or even at a higher level including the President. In case of mortality due to negligence, they can file a complaint to the court of justice. Another source they can rely on to express their dissatisfaction is news media. Whenever there is a complaint made by a patient or when the authority concerned has the knowledge that there is a problem, an enquiry is undertaken. With more opportunities for freedom of expression and the advent of social media, patients will have more channels and mechanisms to express their grievances (see also Box 7.2 on user experiences of health care).

2.9.5 Public participation

Public participation used to be mainly in the form of making contributions in cash, kind or labour for the welfare of staff and development of the facilities (see section 3.6.3 for more details). Local well-wishers and dignitaries can become members of the hospital management committee. Donation boxes are kept in all public hospitals, and patients and families used to make donations on being discharged from hospitals. There is insufficient evidence that the public are influencing purchasing decisions. However, there have been instances of the public trying to influence the decision on placement of health staff, specifically doctors, who have good relationship with them. (See also community involvement in planning in section 2.5, and the role of township health committees in section 2.6 on intersectorality.)

3 Financing

Chapter summary

Total health expenditure in Myanmar, 2.0–2.4% of its GDP between 2001 and 2011, is the lowest among countries in the World Health Organization (WHO) South-East Asia and Western Pacific Regions. General government health expenditure (GGHE) as a percentage of general government expenditure (GGE) is low, at 1% between 2003 and 2011. GGHE as percentage of GDP amounted to 0.2–0.3% over the same period. GGHE as a percentage of GDP and of GGE in 2012–2013, increased significantly to 0.76% and 3.14%, respectively; however, this level of health investment is still low compared to the demand for health care. The statutory financing system is very limited: only 1% of population is covered by Social Security Scheme, spending by Social Security was low at 1.3% of GGHE. Inadequate government expenditure on health care over the past decade resulted in high out-of-pocket payments by households, which became the dominant source for financing for health care (accounting for 79% of total health expenditure). Expenditure by other ministries on medical care for their employees is small; while donor contributions remain substantial, at 7% of total health expenditure in 2011 (half what the government spends on health). As a result of economic sanctions, official development assistance is relatively low compared with other developing countries, and mostly channelled through global partnership programmes. Aid flows increased in the late 1990s and peaked in 2009 and 2010 in response to Cyclone Nargis. Challenges emerge when donor funding is managed by nonstate actors through numerous parallel programmes often not in line with government policy priorities and not sustainable in the long term. Nonadherence to the Paris Declaration is a policy concern. Donations by households and communities for health care and support to the poor are often inadequate to meet the high demand. In light of the 2012 Social Security Law providing comprehensive social and health protection for formal-sector employees, challenges remain on how the government will introduce financial-risk protection for the majority of the population who are poor and those engaged in the informal sector. At the least, the government should offer universal access to free essential

generic medicines as an immediate step in moving closer to universal health coverage. Measures, including tax reforms, are needed to expand the fiscal space and enhance government expenditure on health. All categories of public-sector health workers are government employees. While salary is low in relation to the living standards, self-motivation and earnings from secondary jobs (clinical or nonclinical) are the main incentives keeping them in government service.

3.1 Health expenditure

The National Health Account was established which details sources of finance, type of spending, and type of health-care providers, and was available for 1998 to 2011, although the World Health Organization (WHO) had longer series of estimates. Total health expenditure increased consistently between 2001 and 2011 (Table 3.1). Per-capita health expenditure has increased steadily by an average of 28.5% annually in nominal terms (18.1% in real terms). The constant producers' price has been revised three times, in 1995–1996, 2000–2001 and 2005–2006. Total health expenditure in Myanmar was about 2.0% of gross domestic product (GDP) between 2001 and 2011 – the lowest among countries in the WHO South-East Asia and Western Pacific Regions (Fig. 3.1). As a result of low government spending (just 13.6% of total health expenditure in 2011), household out-of-pocket (OOP) payments became the major source (79.3% of the total health expenditure). Donors also played a substantial role (7.1% of total health expenditure, half of that spent by the government).

The Ministry of Health (MOH) spending on medical goods is inadequate to meet demand, at about 3–5% of the budget between 2001 and 2011 (Table 3.2). A larger share was given to health-related functions, including capital formation,[18] education and training of health personnel, research and development, nutrition promotion and education, food and drug control, and environmental health. The curative and rehabilitative services had a larger share of the government health spending between 2006 and 2011. Expenditure on prevention and public health services[19] was 10–20% between 2001 and 2006, and had increased to 24–32% between 2007 and 2011.

18 Capital formation for health care provider institutions (HCR 1) is used to build (or rebuild) the physical facilities of hospitals and other providers of health care (World Bank et al., 2003, p. 23).

19 As defined by World Bank et al. (2003), prevention and public health services include maternal and child health (MCH), school health, prevention of communicable diseases, occupational health, health education and all other miscellaneous public health services.

Table 3.1 Trends in health expenditure, 2001–2011

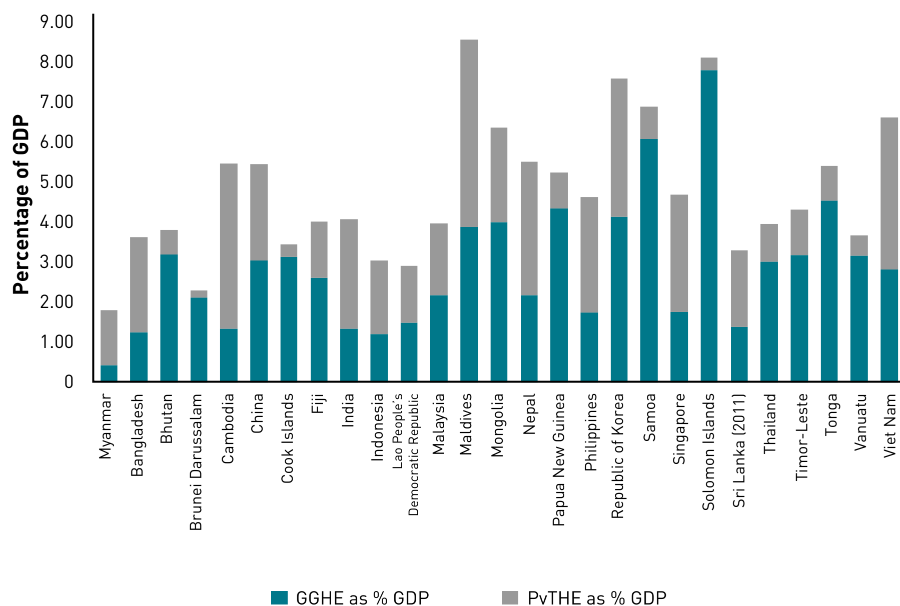
Selected key indicators	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total health expenditure per capita (in kyat at current prices)	1442	2550	3291	3799	4684	6113	7890	10 179	12 095	12 800	13 419
Total health expenditure per capita (in kyat at constant prices)	406a	1443[a]	1546	1722	1782	5039[a]	5409	5981	6873	6711	12 163
Total health expenditure per capita (in PPP international $)[b]	18	20	20	20	20	22	22	25	27	26	28
Total health expenditure (billion kyat)	73.7	133.1	175.1	206.3	259.5	345.5	453.7	594.2	715.2	765.2	810.3
GDP (billion kyat)	3523	5625	7717	9079	12 287	16 853	22 683	29 165	33 761	39 847	46 344
Total health expenditure (% of GDP)	2.1	2.4	2.3	2.3	2.1	2.1	2.0	2.0	2.1	1.9	1.7
Public	11.3	13.8	10.6	11.6	7.8	12.7	10.1	8.2	8.5	13.47	13.62
Private	87.6	84.0	86.5	85.4	90.8	81.8	84.5	85.3	82.3	77.10	79.26
External	1.1	2.2	2.9	3.0	1.4	5.5	5.4	6.5	9.2	9.43	7.12
Others											
Social security fund (% of GGHE)	3.1	2.5	2.2	1.5	2.1	1.6	1.6	1.4	1.3	1.3	1.3
GGHE (% of GGE)[b]	7.0	10.3	1.6	1.7	1.0	1.3	1.1	1.2	1.3	1.3	1.3
GGHE (% of GDP)[b]	0.2	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.3
OOP exp (% of private exp)[b]	99.9	98.8	98.6	98.6	99.6	95.3	95.6	96.7	92.7	92.7	92.7

Notes: GGHE: general government health expenditure; GGE: general government expenditure; NA, not available; OOP: out-of-pocket; exp: expenditure; PPP: purchasing power parity.

a 1995–1996 Constant Producers' Price, 2000–2001 Constant Producers' Price, 2005–2006 Constant Producers' Price. b WHO (2013).

Sources: Myanmar National Health Accounts 2001–2011, Department of Health Planning, MOH.

Figure 3.1 Health expenditure as share (%) of GDP, selected countries, 2012



Source: WHO Global health expenditure database. Accessed 27 March 2014 [http://apps.who.int/nha/database/DataExplorerRegime.aspx]

Table 3.2 Distribution of Ministry of Health expenditures by functions 2001–2011 (%)

Functions	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Curative and rehabilitative	29.6	11.5	15.2	15.1	21.1	37.0	37.7	32.0	31.6	36.5	33.6
Ancillary services	0.2	0.2	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.2	0.2
Medical goods dispensed	6.5	3.5	3.8	3.1	4.7	3.7	3.4	3.6	3.2	2.6	4.9
Prevention & public health	9.4	11.1	17.7	17.6	20.7	21.6	24.0	30.6	32.3	21.2	22.3
Health administration	3.7	7.0	7.5	11.3	12.8	3.7	3.9	3.6	2.9	3.2	2.8
Health-related services	50.6	66.7	55.7	52.7	40.5	33.7	30.7	29.8	29.4	36.3	36.2

Source: Myanmar National Health Accounts, 2001–2011, MOH.

General government health expenditure (GGHE) accounted for only about 1% of general government expenditure (GGE) during the years 2003 to 2011. GGHE as a percentage of GDP was very low, 0.2–0.3% between 2001 and 2011 (Table 3.1). Significant increase in the current government budget allocation in fiscal year 2012–2013 was observed: GGHE had increased to 0.76% of GDP and 3.14% of GGE (Table 3.3). This level of health investment is still low compared to the demand for health care by the people.

Table 3.3 General government health expenditure (GGHE) as share (%) of GDP and of general government expenditure (GGE)

Financial year	GGHE/GDP (%)	GGHE/GGE (%)
2010–2011	0.20	1.03
2011–2012	0.21	1.05
2012–2013	0.76	3.14

Source: MNPED & UNICEF (2012b).

3.2 Sources of revenue and financial flows

Sources of health financing have varied over the last six decades. Between 1948 and 1962, Myanmar followed the public-financed public services model (MOH, unpublished information, 1977). Government taxation was also the major source of health finance between 1962 and 1974, including international assistance. The private sector started to grow in this period, so that licensed doctors provided services in patients' homes. Community donations also played a role, not only for building of station hospitals, but also some of the buildings in central hospitals (MOH & WHO, 2008a).

National Health Committee (NHC) mandated the government to investigate and develop alternative health-financing sources. This triggered major health-financing reforms in the mid-1990s, consisting of: (1) introducing paying rooms and wards in public hospitals; (2) introducing user charges for Government Drug Supplies by Central Medical Store Depot (CMSD) and user fees for diagnostic services such as laboratory analyses and X-rays; (3) developing Revolving Drug Fund (RDF) for essential drugs; (4) introducing private service in public hospitals; and (5) establishing trust funds. The principle underlying these reforms was to encourage the community to take some share of health care costs (Community Cost Sharing) while at the same time protecting the poor from the cost burden through setting up trust funds (MOH, unpublished information, 1993, 1997, 2000 and 2007).

In line with the new health policy, the paying rooms and wards were introduced in all government hospitals, where fees were set according to quantity and quality of services rendered. Rules on the use of revenue collected were established.

In 1994, the Department of Health (DOH) introduced user charges for selected items of medicines supplied by MOH through CMSD, first for 20 items and later 23 more items were included. Full-cost recovery was applied, where patients in all public health facilities were charged at an ex-factory price quoted by the Myanmar Pharmaceutical Factory; however, exemption for the poor at the discretion of the medical superintendent or township medical officer was offered, but there was no MOH budget line to subsidize these exemptions. All revenue, except for a small margin for overheads and handling, was fully remitted to government accounts – it was not allowed to be retained in the hospitals. The revenue generated from selling medicines supplied by CMSD in 1999 was 19.9 million kyat.

In 1993, user fees were enforced on certain diagnostic services, such as laboratory tests and radiography. Income from diagnostic services at Yangon General Hospital in 1997 was 28 million kyat, equal to 90% of the Hospital's recurrent budget in that year.

Following the introduction of Myanmar Essential Drug Programme (MEDP) in 1989, a cost-recovery scheme was established in 1994, which resulted in patients paying for essential medicines. Prices were set based on the purchase price on the private market and the revenues from a cost-recovery scheme were used of drug replenishment of a revolving drug fund (RDF) (WHO, 1997). In 1994, some 25% of the total revenue generated from the community cost sharing, was remitted to government account. A further 25% each was allocated to each of hospital maintenance, drug and medical equipment replenishment, and staff welfare. In 2007, staff incentives were abolished, so community cost sharing income was redistributed: 50% to government account, 25% for drug and medical equipment replenishment, and 25% for maintenance (MOH, unpublished information 1994, 2007).

The Revolving Drug Fund piloted in 1990 in nine townships of Bago Division using seed funding from WHO, United Nations Children's Fund (UNICEF) and Nippon Foundation, had expanded to 100 townships in 1995, and nationwide (i.e. all townships) following a decision by the 18th

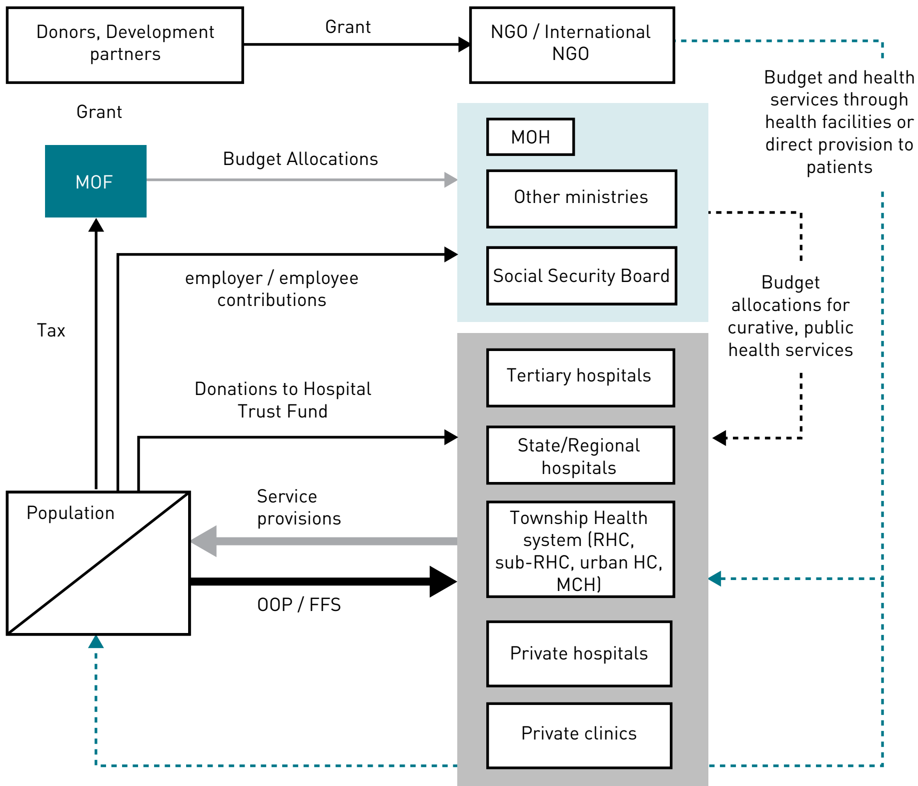
meeting of the NHC. Individual hospital trust funds, funded by community donation, emerged as a result of the "one bed one lakh [100 000] kyat" campaign. The fund is deposited in the Myanmar Economic Development Bank in the area – the interest generated from the trust fund, managed by the hospital committee, is used to subsidize the cost of hospitalization for destitute patients. In 1999, a total of 139 hospitals across all states and divisions had established trust funds with a total value of 135.7 million kyat. In 2012, there was a total of 824 hospitals in all regions and states with trust funds of total value of 8937.8 million kyat (MOH, unpublished information, 1993, 1995, 2000 and 2013).

To date, there is no comprehensive health insurance system in Myanmar. A social security system was established in 1956 under Ministry of Labour as mandated by the 1954 Social Security Act. This system covers social services including health care for insured workers who are employed in the private sector, it is mandatory for enterprises having more than five employees. Benefits provided by the scheme are free medical care during illness, payment of 75% of basic salary during maternity leave, full salary for one year for severe injuries, cash payments for death and injury, and survivors' pension. Two sources of financing to the scheme are contributions from employees and employers, while the government supports the programme management. The scheme covers less than 1% of the population, hence social health insurance expenditure was small, 0.15% and 0.48% of total health expenditure in 2008 and 2010, respectively.

The recent Social Security Law (enacted on 31 August 2012) aims to expand mandatory and voluntary coverage. It is noted that the Social Security Board (SSB) is responsible for the social security scheme. Services are provided to its members by its own three hospitals and 92 clinics, and 42 enterprise clinics countrywide under other ministries (e.g. railways and industries). Insured workers needing tertiary health services outside these hospitals have their bills reimbursed by the SSB. Under the new law, SSB will purchase services from existing MOH hospitals and also private pharmacies.

In conclusion, the mid-1990s major financing reform resulted in increased responsibility of households for their own health care via significant increase in the proportion of OOP financing in health care.

Figure 3.2 Financial flows



Abbreviation:

NGO – Non-government Office

OOP –Out of pocket

FFS – fees for service

RHC – Rural Health Center

HC – Health Center

MCH- Maternal and Child Health

MOH – Ministry of Health

Source: Asia Pacific Observatory on Health Systems and Policies

3.3 Overview of the statutory financing system

The dominant component of health financing systems in Myanmar is clearly household OOP payment, while the statutory financing system is in the very early stages of development. For example, the payroll tax contributory Social Security Scheme covers less than 1% of the population engaged in the formal sector. The vast majority of people are engaged in the informal non-employed sector, i.e. agriculture; while 26% of population lives in poverty (MNPED & UNDP, 2007) – none of these

are covered by the statutory social security system. As described earlier, the major health financing reform in the 1990s resulted in OOP being the dominant source of health finance.

However, the Social Security Law enacted in August 2012 will gradually expand coverage to the public (government agency and state enterprise) employees, and private-sector employees. The Social Security Scheme, financed by employees and employers, follows a typical International Labour Organization (ILO) type of comprehensive coverage to a small fraction of formal-sector employees, providing not only medical treatment, but also maternal care, cash benefit for sick, maternity leave, old-age pension after retirement, family assistance, invalidity and funeral grants, and unemployment benefit.

In the light of expanding comprehensive coverage to the formal sector, the challenges facing the government are to provide financial-risk protection to the poor and the informal sector, as the exemption from community contribution scheme (CCS) and payments into the Revolving Drug Fund (RDF) are not effective mechanisms, and there is no budget line to subsidize the poor. There is also a need for rapid scaling up of institutional capacity of the SSB to enforce premium collection, their purchasing function and to ensure health-care providers are acting for the interests of the social security members.

Taking into consideration the sheer size of the informal economy and the fact that the Social Security Scheme is still in the early stages of widening coverage from the small fraction of the formally employed, it will be a daunting challenge for the government to find ways and means to raise and pool adequate financial support to provide universal access to health care, unless policy and strategic approaches are far-reaching and considered beyond health.

In November 2012, the MOH hosted a multiagency workshop, Consultation on Health Systems Assessment for Universal Coverage in Myanmar. Following this workshop, a clear direction emerged in the light of current health systems' capacities. Two parallel strategies were proposed: first to strengthen supply-side capacity, in particular the township health systems as a strategic and reliable hub in providing primary care services, easily reachable by the majority of people; and second to offer universal free essential generic-quality medicines in public health facilities at all levels, regardless of the socioeconomic

status of the patient. These two synergistic parallel strategies will gradually minimize the size of OOP expenses, improve health equity, and enable the poor to gain better access, and at the same time scale up government and donor funding. Following extensive discussion it was agreed that this could become a specific policy goal (MOH & WHO, unpublished information, 2012):

"Policy Goal of universal access to free generic essential medicines: Universal access to free and rationally prescribed medicines in the national essential list by all population, by the end of (2014) for outpatient and inpatient services, using government budget and contributions by development partners in order to reduce household OOP payment on medicines, improve utilization rate and contribute to the reduction in the incidence of catastrophic health expenditure and impoverishment."

3.4 Out-of-pocket payments

From 2009 onwards, OOP as share of total health expenditure was declining (Table 3.4). However, it is still significant and high, at over 75%.

Table 3.4 Health expenditure by financing agents as share (%) of total health expenditure, 2001–2011

Financing agent	2001	2005	2007	2008	2009	2010	2011
Ministry of Health	11.3	7.8	10.7	10.1	10.3	11.4	11.6
Other ministries	0.8a	1.1a	0.9a	0.8a	0.9a	3.7b	3.8b
Social Security Scheme	0.4	0.2	0.2	0.2	0.1	0.5	0.5
Private household OOP	87.4	90.6	84.3	85.1	82.2	76.6	78.8
Nonprofit institutions serving households (including INGOs)	0.1	0.3	3.9	3.8	6.5	7.8	5.3
Total health expenditure (million kyat)	73 729.8	259 491.8	453 670.4	594 241.8	715 182.6	765 167.5	810 318.9

Notes: a excludes health spending by MOD; b includes health spending by MOD.

Source: Myanmar National Health Accounts, 2001–2011, MOH.[20]

The private sector continues to be the dominant source of health financing, accounting for more than 80% of the total health expenditure between 2001 and 2009 (Table 3.1). The OOP expenditure was nearly 100% of private health expenditure between 2001 and 2005, and more than 90% between 2006 and 2011. This demonstrates the limited prepayment

20 Myanmar National Health Accounts documentation has included the health expenditures from the Ministry of Defence in the "other ministries" health expenditures since 2010.

mechanism in the health care financing system. The social security funds as share of GGHE between 2001 and 2011 accounted for only 1.3–3.1%.

There have been no studies, but personal observation suggests that most OOP is used for self-prescribed medicines, diagnostics and private clinics; consultation in the public sector is free, but medicines and other services have to be purchased.

3.4.1 Direct payment and its poverty impacts

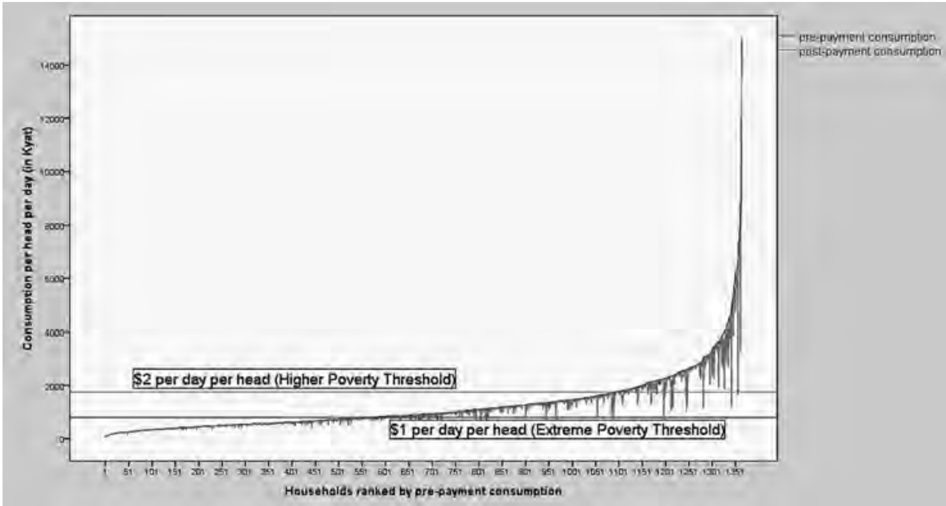
User charges at the point of use for goods and health services are applied in all public facilities, and for purchase of medicines and medical supplies from outside vendors if there are out of stock. Consumers also pay in full for services and goods in the private sector, pharmacies, clinics and hospitals, as well as for consultations with traditional healers.

Surveys indicate that the incidence of catastrophic health expenditure – defined as expenditure on health exceeding 40% of household nonfood expenditure – is 34% of urban and 28% of rural households in Yangon, 23% of urban and 32% of rural households in Mandalay, and 36% of urban and 21% of rural households in Mon State (MOH & WHO, 2008a).

One study in 2010 indicated that over 30% of sampled households could not afford the health-care expenses and had to resort to various coping mechanisms; the majority of them (82.4%) had to pawn goods and/or borrow money (MOH & UNICEF, unpublished information, 2012). A study in 2007 estimated that 28.6% of 476 sampled households had suffered catastrophic health payments (MOH & WHO, 2008a). Various studies in Myanmar have indicated that 12–18% of households encountered catastrophic health expenditure (Nyein Foundation unpublished data, 2012; MOH & UNICEF, unpublished data, 2012).

Household health expenditure as a proportion of household consumption is presented in Fig. 3.3, where the x-axis represents households ranked in ascending order by level of total consumption before health expenditure, and the y-axis represents the total prepayment consumption per head per day. The extreme poverty threshold (consumption below US$ 1 per day) and higher poverty threshold (consumption below US$ 2 per day) are represented by two horizontal lines; (the US dollar rates were converted to kyat by applying the current exchange rate without adjusting for PPP.) (MOH & UNICEF, unpublished information, 2012.)

Figure 3.3 Household consumption before and after spending on health care



Source: Unpublished study by MOH and UNICEF (2010). (Reproduced with permission.)

The point where the curve intersects with the lower threshold indicates the number of people among the study population living in extreme poverty, and gives a rate of approximately 40%. Similarly, the graph indicates that the proportion living under the higher poverty threshold was nearly 80%. The figure also shows how the richest can afford larger health expenditure compared to those living in poverty.

The vertical lines below the curve represent the households' spending on health, and shows how they risk being pulled below the poverty line without any social protection mechanism. Health impoverishment incidence is the number of households that were nonpoor, but being pushed under the poverty line after payment for medical care.

In this study, very few households in either urban or rural areas had heard about health insurance. On further explaining the pre-payment concept and asking for their opinions on such a scheme, the majority of participants expressed their full support for such health protection of the community members in general and the poor in particular. At the same time, the poor, health-care providers and health committee members expressed concerns that that the majority of the community is too poor to make contributions (MOH & UNICEF, unpublished information, 2012).

3.4.2 Informal payments

Although concrete evidence is lacking, anecdotal evidence suggests that informal payments are commonly taking place in government health care facilities. However, as payment is made to health care providers in kind or cash as a gesture of gratitude is a common practice among patients or their families, it is difficult to differentiate this from coercive payment conditional on services rendered.

3.5 Voluntary health insurance

Private voluntary health insurance is at a very early stage of development in Myanmar; the size of population coverage by private voluntary insurance is unknown, but is believed to be very low. In the upcoming market economy, and potential expansion of the middle class, demand for private health insurance should increase – there is as yet no government policy for this. Social Security Law 2012 will also cover the nonemployed sector through voluntary coverage (see section 3.6.1).

3.6 Other financing

Other sources for financing include some ministries that are providing medical care for their employees, external sources and the community.

3.6.1 Parallel health systems

As mentioned in Chapter 2, there are a number of ministries providing medical care for their employees. The Ministry of Defence provides comprehensive services and financial coverage to the armed forces and their family members. Not only does it operate military hospitals, but it also trains its own health personnel including doctors, nurses and other in its own academy and schools. Though military personnel are the priority, they also provide outreach health-care services to civilians in remote areas (TV programme of the Ministry of Defence, frequently aired on public TV), and join civilian counterparts whenever need arises, such as rescue after natural disasters. With its scope of services and substantial geographical coverage, MOH, through intersectoral action, may make use of MOD in a complementary role, in particular providing services to hard-to-reach populations.

Other ministries, such as the Ministry of Transport, provide general medical care only to their employees, and those requiring higher and specialized care are referred to MOH hospitals. These ministries have to rely on MOH

for deploying their medical staff, doctors and nurses. The MOH may have to face some challenges in managing its workforce in terms of placement and career advancement among staff across ministries.

One important ministry in relation to financing health is the Ministry of Labour, Employment and Social Security.

3.6.2 External sources of funds

Official development assistance (ODA) gradually increased from 1% of total health expenditure in 2001 to the peak at 9% in 2009–2010 with the humanitarian-assistance response to Cyclone Nargis. ODA dropped slightly to 7% in 2011, but it was still significant at half of the level of government investment in health (14% of total health expenditure in 2011).

There are many challenges posed by the current aid modalities. One is to strike a balance between aligning development assistance with national programmes and policies, and respecting conditions imposed by donor countries. To date, funding mechanisms have bypassed the government, rather directly supporting INGOs and NGOs and external development partners, which will lead to fragmentation and further weaken of an already fragile health system. This may also lead to the creation of parallel health structures and programmes that do not necessarily follow national norms and standards (WHO, 2008a). Unless the MOH steps in with full commitment, the financing of public health services and the maternal and child health (MCH) programme will remain donor dependent. The MOH needs to strengthen its capacity to ensure its own health agenda and take the steering wheel to ensure aid coordination and effectiveness.

3.6.3 Other sources of financing

Cash or in-kind community donations to hospital trust funds and hospitals (beds, water tanks, etc.) though not significant on a national level, are meaningful (even essential) locally and contribute to supporting the poor and common good in the society. About 90% of the Myanmar population is Theravada Buddhist. In Buddhist philosophy, the practice of donation known as *Dãna* in Pali is a virtue. *Dãna*, as well as other Buddhist values like *metta* (loving-kindness) and *karuna* (compassion), are often mentioned as reasons for engaging in philanthropic activities. *Sayadaw*, a Myanmar word designating venerable monk(s), are also actively involved

with monastic groups in the collection and distribution of cash and in-kind donations. Charity work is also undertaken by non-Buddhists, including Christians, Hindus and Muslims. Compassion towards fellow human beings, as well as religious principles and attachment to one's ethnic or geographic community, rank high in the motivations to engage in relief (MMRD, 2011).

Active and venerable monks have a very high capacity to mobilize and raise funds for humanitarian activities, including health care. There are a number of hospitals and clinics established on this basis, where members of the medical profession provide their services free. It is also a common practice for the community to make donations and contribute their labour in building health care facilities. There are also instances of community members organizing social activities to provide financial protection for the poor. Some well-to-do business people are another source for covering costs for hospitalization of poor patients (MOH & UNICEF, unpublished information, 2012).

Founded in 1998, the Hospice is providing palliative care for cancer sufferers and improving their quality of life. Situated in Yangon and Mandalay, the two major cities, the Hospice covers costs for patients, family attendants, nurses and some staff, bereavement and burial. Cash assistance to the bereaved families is also extended (U Hla Tun Hospice Foundation, 1998). There is no information on the level of awareness and uptake of the Foundation and Trust Fund by patients including the poor who cannot afford to pay, and no information on the efforts of hospital staff to advise them to apply for assistance.

Inadequate budget allocation for daily hospital operation has led to increased reliance on the community for donations, with subsequent emergence of different financing schemes implemented by townships, NGOs and community-based organizations. However, these fragmented sources of financing are small and not sustainable (DHP, MOH & WHO, 2012).

Traditions, culture and religious belief may have provided a certain extent of protection for the poor in the face of low government spending on health. However, this is not a reason for the government to be complacent. Measures, including tax reforms, are needed to expand the fiscal space to enhance government health expenditure to improve the health-care coverage.

3.7 Payment mechanisms

3.7.1 Paying for health services

Health services in the public sector are funded by government budget, though mainly from household OOP (formal and informal) payment for services rendered in public facilities; and external sources. Spending on public health services has been very low and has mostly relied on external aid (see also section 3.6.2); there is inadequate allocation of operational budget for prevention and health-promotion activities. Table 3.5 describes two distinct payments: services provided by public facilities are based on salary; and services in private sector are fully fee for services.

As reflected in the National Health Accounts, OOP is 80% of total health expenditure. Outpatient care, inpatient care and medicines provided by public facilities are mostly paid for by the patients, as is food for inpatients where there is no hospital catering service. However, interest from the hospital trust fund is earmarked to subsidize the poor, but cannot accommodate the large demand. Services provided by private clinics and hospitals, dispensing of over-the-counter medicines, and traditional healers are fully paid by users. In rural communities, in-kind payment in gratitude for services rendered by traditional birth attendants, auxiliary midwives and community health workers, as well as midwives is a common practice. Until 2013, MOH kept significant supplies of essential medicines and medical supplies, though still low in relation to people's health needs.

The dominant role of OOP in financing health services is a policy concern. The poor who cannot afford to pay either end up with catastrophic health spending or health impoverishment (see section 7.2.1) on deciding not to use services, resulting in preventable mortality and disability. There is a need to establish effective mechanisms to regularly monitor the level and distribution, across socioeconomic groups, of catastrophic health expenditure and impoverishment.

Table 3.5 Provider payment mechanisms

Provider	Payers			
	Ministry of Health	Other ministries	Social Security Board	Direct payments
GPs	NA	NA	NA	Fee for service (FFS)
Hospital outpatient and inpatient care	Salary	Salary	Salary	FFS
Hospital dispensary	Salary	Salary	Salary	FFS
Pharmacies	Salary	Salary	Salary	FFS
Dentists	Salary	Salary	Salary	FFS
Public health services	Salary	Salary	Salary	No

Source: Asia Pacific Observatory on Health Systems and Policies

3.7.2 Paying health workers

All categories of public-sector health workers are government-salaried employees. The salary is set by the Ministry of Finance and Revenue as stipulated in the rules and regulations relating to the civil service. Salary adjustment is made every two years, and limited to 10 years in each rank. Private clinical and nursing dual practice during off-hours is allowed for public-sector health workers to earn additional income.

Financial incentive has been introduced: all health workers posted in hard-to-reach areas are entitled to an additional 100% hardship allowance of their respective basic salary. Since salary is standardized across ranks (see Chapter 5), salary across different professional in health sector, and across ministries are similar for the same rank. However, health-sector incomes are considered low; for example, a senior township medical worker gets an average of US$ 150–200 a month. It is believed that self-motivation and the prestigious image of being a government officer, dedication and sense of professionalism are the main intrinsic factors for health workers to remain in the low-paying public service. However, low salary can be compensated by private practice after office hours or earnings from other second jobs (or both).

4 Physical and human resources

Chapter summary

There has been an increase in the number of public hospitals since the early 2000s, in total an additional 140. Ayeyawady Region has received the most, followed by Sagaing Region; however, there was no change in the number of hospitals in Chin State. Coinvestment by the local community in building rural health centres and sub-rural health centres is widely practised. The number of private hospitals increased within this decade, but at a lower rate than public hospitals. Hospital equipment is usually provided by the government budget and MOH's share of government expenditure was increased four-fold in 2012. In terms of human resources for health, recruitment of doctors, nurses and midwives have been increasing since the early 2000s, but have not yet reached the global standard of 2.28 doctor, nurse and midwife positions per 1000 population. There is also underproduction of dental surgeons, pharmacists and technicians as compared to doctors and nurses. In order to improve the health workforce situation in the public sector, a Human Resources for Health Master Plan was prepared in 2012 for the next 20–30 years. Voluntary health workers from the community have been recruited and trained since the 1980s. Even though there is some attrition, training and assigning community health workers (CHWs) on special jobs by vertical programmes and providing social recognition, moral support and incentives to CHWs and auxiliary midwives have motivated them to remain as voluntary health personnel for the benefit of their own communities. The existing health management information system (HMIS) needs to be strengthened, and an e-health care system developed from primary level to tertiary hospitals.

4.1 Physical resources

4.1.1 Capital stock and investments

Current capital stock

The Department of Health (DOH) is mainly concerned with the current capital stock in buildings for the public sector. Primary care infrastructure

starts from the sub-rural health centre (Sub-RHC) at the grassroots levels, to rural health centre (RHC) where ambulatory services including delivery care are provided by the basic health staff (BHS). Hospitals in the rural areas are 16-bed station hospitals with 17 health staff headed by a Station Medical Officer, who provide emergency care alongside general medical care. In townships there is usually a 25-bed township hospital operated by 55 staff, which provides emergency care and treatment, primary care for prevalent diseases, general administrative and auxiliary services, and clinical care such as general medicine, surgery, obstetrics and gynaecology and paediatric care. Urban areas of some townships have an urban health centre, which provides ambulatory care and dental care for general patients and also a maternal and child health (MCH) centre that takes care of pregnant mothers and children under five years old. According to population coverage some township hospitals have been upgraded to 50 or 100 beds. Table 4.1 shows the standard positions of hospital staff according to the number of hospital beds, notified by the Ministry of National Planning and Economic Development (MNPED) for upgrading of hospitals. The ratio of doctors to nurses has been set as 1 specialist to 2 medical doctors and one doctor per three nurses.[21]

Table 4.1 Standard staff positions of government hospital

	Size of hospital (no. beds)						
Type of position	16	25	50	100	150	200	300
Doctors	2	6	8	29	29	106	107
Nurses	6	16	23	87	92	298	301
Technicians	2	8	17	22	29	55	74
Others (Clerical & Auxiliary staff)	7	25	33	63	87	135	162
Total	17	55	81	201	237	594	644

Source: Planning Division, DOH (personal communication, 2012).

Between two and six townships are under the jurisdiction of each district and there is a general rule that the district hospital should have 100 beds. District hospitals provide the same services as township hospitals plus nine speciality disciplines: medicine, surgery, obstetrics and gynaecology, paediatrics, anaesthesia, orthopaedic, eye, dental and pathology – these hospitals are therefore regarded as the secondary level. Some district hospitals, including those in the 24 special development zones defined during the period of the State Peace and Development Council (SPDC),

21 Ministry of Health, Department of Health, internal document (3 February 2004).

have 200 beds. Between two and six districts form one region/state, where there is a general rule of having a 200-bed general hospital. A few regions/states have 300-bed general hospitals. At the region/state-level hospital, there are 17 speciality disciplines: medicine, surgery, obstetrics and gynaecology, paediatrics, anaesthesia, orthopaedic, eye, ear–nose–throat (ENT), radiology, pathology, psychiatry, dental, forensic medicine, microbiology, physiotherapy, neuromedicine and neurosurgery. Together with these specialties they have supportive radiology and clinical laboratory. Tertiary hospitals exist in Yangon, Mandalay and Nay Pyi Taw and in these 1000-bed hospitals there are over 20 disciplines of specialty, fully equipped for tertiary care including intensive care. Tertiary hospitals also run as teaching and training hospitals for both undergraduate and postgraduate doctors. Speciality hospitals such as the central women's hospitals, children's hospitals, orthopaedic hospitals, eye–ENT hospitals and psychiatry hospitals are situated in Yangon, Mandalay, Taunggyi and Nay Pyi Taw. There is a total of 827 primary care hospitals, 81 secondary care hospitals and 36 specialist hospitals for tertiary care.

Between 2004–2005 and 2012–2013, there was a 17.4% increase in the number of hospitals under MOH across all regions and states, and a 12.6% increase in the number of RHCs (Fig. 4.1). Ayeyawady Region had the highest increase in hospitals (29.9%), followed by Sagaing Region (22.1%). In contrast, there was no increase in the number of hospitals in Chin State (Fig. 4.2) and also no increase in the number of RHCs in Kayah State. Chin State has a population density of 15 people per square kilometre with 24 hospitals (MOH, 2011a); due to the geography (hills) there are physical barriers to access.

Government hospitals have been constructed over many years. Some hospitals are over 100 years old –for example, Yangon General Hospital (YGH, built 1900), Lady Dufferin Memorial hospital (at present Central Women's Hospital, built 1897). The national plan in 1954 aimed to have 401 hospitals by 1960 – some 380 operated by the government and the rest in the private sector (Government of the Union of Burma, 1954). With this information, most of the township, district and state/regional hospitals are assumed to be over 50 years old.

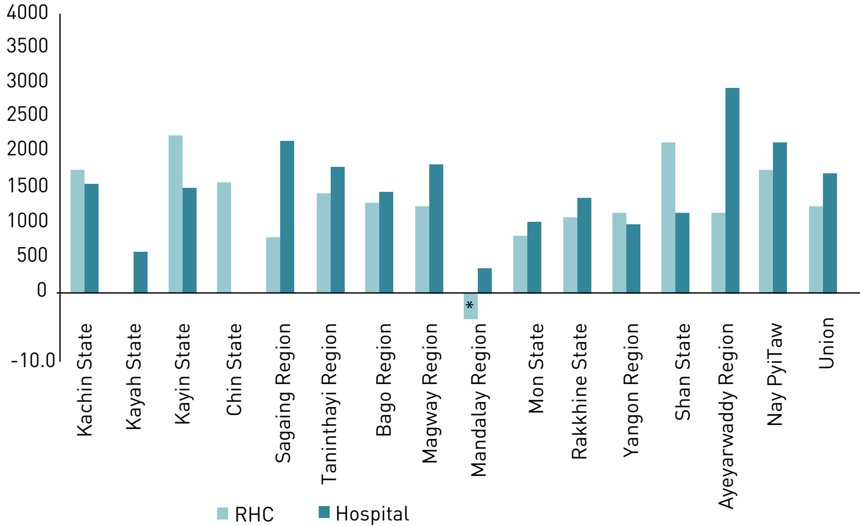
Table 4.2 Distribution of MOH health care facilities and beds by regions/states in 2012

Region/state	Ambulatory care				Hospital care						
	RHCs	Sub RHCs	Urban HCs	MCH centres	Primary curative care			Secondary curative care	Tertiary curative care	Total no. hospitals	Total no. beds (avail)a
					16-bed station hospitals	25-bed Township hospitals	50-bed township hospitals	100-, 150-, 200-& 300-bed district/ region/state hospitals	500-& 1000-bed specialist hospitals		
Kachin State	59	254	1	19	28	12	5	4	2	51	1989
Kayah State	28	119	1	6	9	5	1	1	0	16	577
Kayin State	59	329	1	8	21	4	1	4	0	30	1 068
Chin State	65	276	0	9	15	4	1	4	0	24	840
Sagaing Region	197	192	1	41	68	24	3	10	0	105	3 320
Taninthayi Region	47	868	1	12	21	5	3	3	0	32	1 239
Bago Region	179	950	4	35	64	17	6	6	0	93	3 465
Magway Region	169	784	3	33	50	15	5	5	1	76	2 864
Mandalay Region	152	688	16	33	45	14	9	7	12	87	5 979
Mon State	65	290	3	15	22	6	1	3	0	32	1 479
Rakhine State	110	483	1	18	32	11	2	4	0	49	1 468
Yangon Region	86	418	49	22	31	16	8	6	15	76	10 249
Shan State	183	752	3	52	89	40	9	12	1	151	5 591
AyeyawadyRegion	218	1054	3	42	71	16	5	8	0	100	3 684
Nay Pyi Taw	18	124	0	3	6	1	6	4	5	22	1 534
Union	1635	7581	87	348	572	190	65	81	36	944	45 346

RHC: rural health centre; Sub-RHC: sub-rural health centre; HC: health centre; MCH: maternal and child health; avail: available.

Sources: Planning Division, DOH (personal communication, 2012); a DHP (2011).

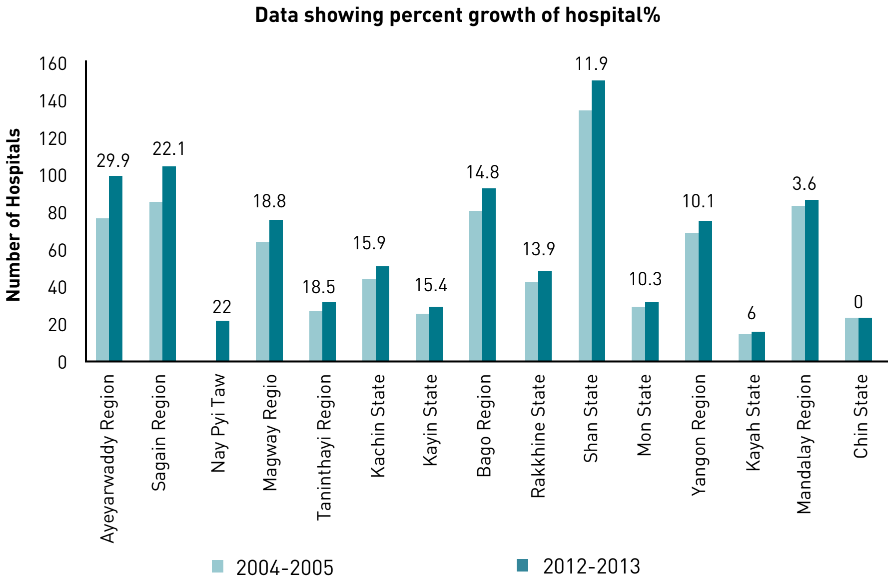
Figure 4.1 Growth of MOH health care facilities by region and state, 2004–2005 to 2012–2013



* Moved to Nay Pyi Taw.

Source: MOH data produced by Department of Health Planning, June 2013.

Figure 4.2 Growth of MOH hospitals by region and state, 2004–2005 to 2012–2013



Source: MOH data produced by Department of Health Planning, June 2013.

The physical condition of the hospitals has been assessed periodically by individual hospitals and also at the time of natural disasters when major renovation is needed. Renovation and construction of new extensions and new wings to old buildings have been carried out according to need, some contributed by DOH and some by community donors.

Investment funding

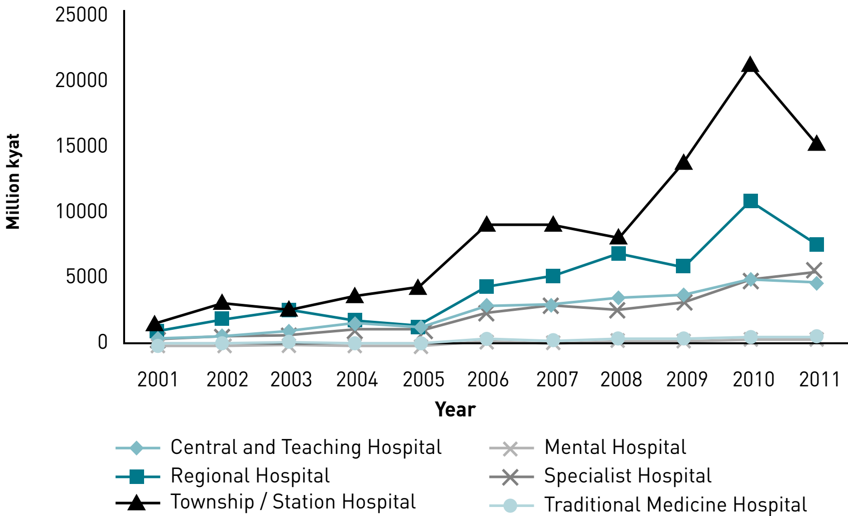
Capital investments are funded by the central government according to the bottom-up need of the township, district and region/state, as well as MOH's decision to build hospitals or invest in big medical devices. Yearly (in August), the capital and current budget proposal is submitted to the DOH and relayed through MOH to the Ministry of Finance and Revenue. The total budget allotted to all the ministries (including MOH) is decided by the head of state. Usually, the budget allotment does not come from the service delivery or sin tax, but from the general revenue of the government. The government's contribution was seen in the building of a totally new psychiatry hospital on the outskirts of Yangon in 2001, a 1000-bed hospital in Nay Pyi Taw in 2003–2004, and many others.

For decades the capital investment for hospital construction or renovation, especially at the township level, has usually depended on private donations. Individual and group donations have been made for constructing hospital extensions, new building for X-ray, maternal and child wards and monk's ward. The most remarkable of these was the construction of five-storey extension buildings by private donors at Mandalay General Hospital (MGH). During his eight-year tenure, the Medical Superintendent of this hospital built one two-storey emergency unit in 2005, two five-storey buildings with extension wards in 2008 and 2012, and started a nine-storey building in early 2013 financed solely by donations from the community totalling to 15 750 million kyats (far more than the government could contribute) (Medical Superintendent, MGH, personal communication, 4 June 2013).

Looking at MOH expenditures by type of hospital during 2001 to 2011, provision to township and station hospitals increased after 2005, though data amalgamate capital and current expenditure, followed by regional hospitals, with the least share to mental hospitals (Fig. 4.3). The spike in 2010 was due to capital expenditure assigned for hospital construction, renovation and extension.

The government has invested in building RHCs and Sub-RHCs. However, because of limited government resources, local communities were the main contributors for constructing these buildings when the posts were approved to be allocated in those areas. In most cases the DOH provided the staff with RHC kits, Sub-RHC kits and Midwife kits (each kit contains basic instruments and supplies for the related service), and operational costs to the newly established RHCs and Sub-RHCs. It is customary practice that Sub-RHCs are built by the local community, which means that construction depends on the economic development of the village. Midwives are normally based at the Sub-RHCs. However, some have to stay and work at the villager's house where there is no Sub-RHC because the local communities could not afford to build it. This co-contribution of the local community is widely practised throughout the country, illustrating communities' responsiveness towards government health workers. Assessment of 20 townships in the Global Alliance for Vaccine Initiative (GAVI) Health System Strengthening programme showed that 117 midwives did not have an Sub-RHC building (MOH & DOH, unpublished information, 2011). At present, apart from donor contributions (UNDP, JICA and some INGOs) to the construction of Sub-RHCs in the villages, DOH has also allotted budget to build Sub-RHCs for midwives and even housing for midwives and Public Health Supervisors (2) in 2013.

Figure 4.3 MOH expenditures by type of hospital



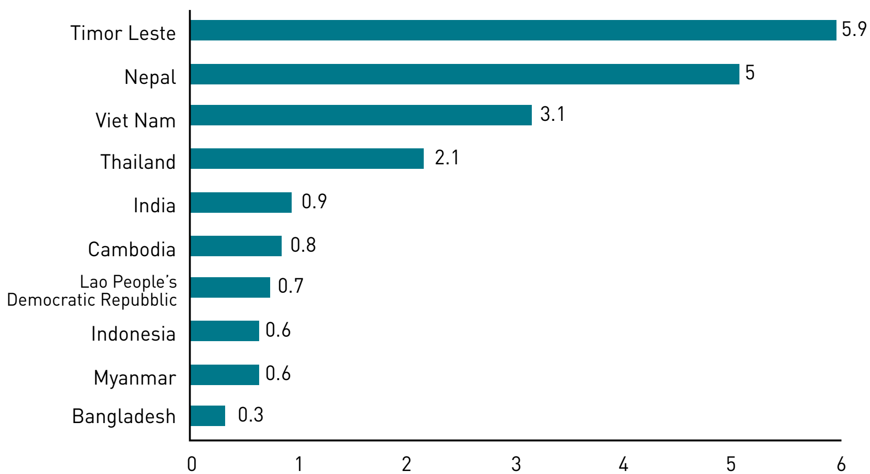
Source: Myanmar National Health Accounts 2001–2011 (MOH, Department of Health Planning, Nay Pyi Taw).

4.1.2 Infrastructure

Hospital beds

Myanmar had 0.6 hospital beds per 1000 population in 2010 (World Bank, 2011a) to cover inpatients for both acute and chronic care available in public and private, general and specialized hospitals including rehabilitation centres. In contrast, Timor Leste, Nepal, Viet Nam and Thailand had more than two hospital beds per 1000 population (Fig. 4.4; WHO, 2013c).

Figure 4.4 Hospital beds per 1000 population, 2005–2012



Source: WHO Global health observatory. Accessed 9 March 2014 [http://apps.who.int/gho/data/view.main.1860]

Apart from the MOH, other ministries (Ministries of Railways, Labour, Mines, Industry, Energy, Cooperatives and Home Affairs) have a total of 26 hospitals and the Ministry of Defence (MOD) has 40 hospitals. Growth in numbers of private hospitals and clinics has been booming recently, with highest numbers in big cities with high populations. In general, government hospitals have more beds than private hospitals, the average number of sanctioned beds in MOH hospitals is 44 120 and from other ministries including MOD is 11 185; and total registered beds in private hospital is 5092 (Medical Care Division, DOH, unpublished data, 2013) (Table 4.3). Hospitals in Myanmar generally provide acute care, except the mental health hospitals in Yangon and Mandalay and the National Rehabilitation Hospital in Yangon, which are long-term care institutions. Yangon and Mandalay have more beds available for mental health services (2.5 beds per 100 000 population) than other regions and states (0.3 beds per 100 000 population) (WHO & MOH, 2006).

Distribution of hospital beds

Table 4.3 Distribution of public hospitals and sanctioned beds and private hospitals and registered beds, 2012

Region/State	Pop (million)[a]	Public hospitals						Private health care facilities				
		MOH		Other ministries		MOD		Hospital		Poly-clinic	GP clinic	Dental clinic
		Hosp	Beds	Hosp	Beds	Hosp	Beds	Hosp	Beds			
Kachin State	1.27	51	1 823	0	0	1	300	10	160	27	184	26
Kayah State	0.29	16	519	1	25	1	100	0	0	0	9	0
Kayin State	1.46	30	986	0	0	3	300	3	48	17	31	11
Chin State	0.44	24	990	0	0	0	0	0	0	0	4	0
Sagaing Region	5.24	105	3 238	4	85	3	500	16	435	35	251	23
Taninthayi Region	1.37	32	1 111	1	16	4	400	6	164	0	42	16
Bago Region	4.81	93	2 649	3	57	2	200	14	285	22	284	46
Magway Region	4.51	76	2 425	5	190	3	150	4	64	0	38	3
Mandalay Region	5.79	87	6 445	5	296	3	1 300	29	863	41	747	75
Mon State	2.51	32	1 052	1	25	1	300	7	112	19	244	0
Rakhine State	2.65	49	1 387	0	0	2	400	1	16	31	17	0
Yangon Region	5.63	76	9 514	5	416	6	3 100	44	2 249	238	2 173	451
Shan State	4.54	151	4 774	0	0	9	1 700	19	304	11	270	36
Ayeyawady Region	6.44	100	3 086	1	25	0	0	5	80	1	306	35
Nay Pyi Taw	0.96	22	4 121	0	0	2	1 300	8	312	2	38	4
Union	47.90	944	44 120	26	1 135	40	10 050	166	5 092	444	4 640	726

MOD: Ministry of Defence; Hosp: hospitals; GP: general practitioner; Pop: population.

Sources: Planning Division & Medical Care Division, Department of Health (4 July 2013); a population data produced from World Bank (2011a).

Looking at the distribution of health care facilities and beds across the country inequities are evident. There are more than 2 beds per 1000 population in Chin, Kayah and Yangon. A discrepancy index lower than 1.0 means that a region or state has fewer beds per 1000 population than the national average (1.0) (Table 4.4). High discrepancy index in Chin and Kayah states could be because hospitals are allotted according to geographical terrain to cover people in the physically hard-to-reach areas with sparse population in those states. There are more hospitals in Yangon, but still not enough to cover the dense population. Ayeyawady Region has the second lowest discrepancy index – more beds are still in need to bring the ratio closer to the national average. In future, this MOH hospital bed per 1000 population and discrepancy index could highlight the need to increase hospital beds or to stop expansion for some years in a specific region/state when the availability of hospital beds from other sources, i.e. MOD, other ministries and private hospitals, are taken into account. The distribution of the health workforce across regions/states should also be assessed to guide equitable allocation.

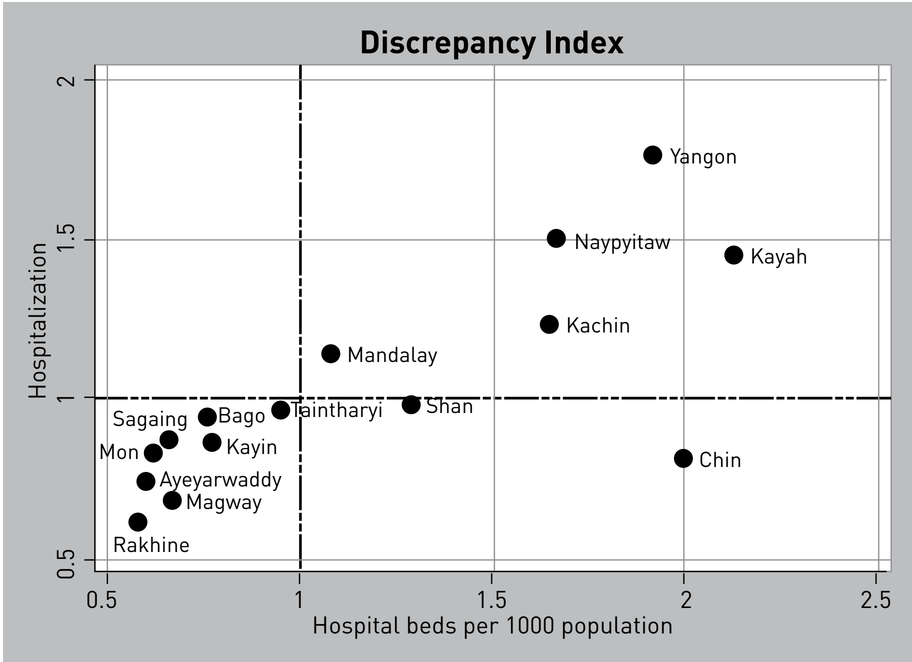
Figure 4.5 compares the discrepancy index between hospitalization (discharges and deaths) per 1000 population with beds per 1000 population. Yangon, Mandalay, Kachin, Kayah and Nay Pyi Taw had more beds per 1000 population and also higher utilization of hospital than the national average. Chin State had high bed availability but low utilization. This raises concerns over the effectiveness of static health care facilities and the efficiency of hospitals, particularly in sparsely populated hilly settings. There may be other factors in addition to geographical barriers that are worth exploring further, for example, sociocultural norms that effect the acceptability of services.

Table 4.4 Distribution of available beds per 1000 population and discharge, 2011

Region/State	Population (million)	MOH hospital beds (available)	Beds per 1000 population	Discrepancy index: beds per 1000 population	Discharges and deaths	Discharge and deaths per 1000 population	Discrepancy index: discharge and death
Kachin State	1.27	1 989	1.57	1.65	42 923	33.93	1.23
Kayah State	0.29	577	2.02	2.13	11 416	40.06	1.45
Kayin State	1.46	1 068	0.73	0.77	34 616	23.79	0.86
Chin State	0.44	840	1.90	2.00	9 918	22.39	0.81
Sagaing Region	5.24	3 320	0.63	0.66	125 464	23.94	0.87
Taninthayi Region	1.37	1 239	0.90	0.95	36 451	26.55	0.96
Bago Region	4.81	3 465	0.72	0.76	124 239	25.83	0.94
Magway Region	4.51	2 864	0.64	0.67	85 186	18.91	0.68
Mandalay Region	5.79	5 979	1.03	1.08	182 816	31.60	1.14
Mon State	2.51	1 479	0.59	0.62	57 917	23.04	0.83
Rakhine State	2.65	1 468	0.55	0.58	44 382	16.75	0.61
Yangon Region	5.63	10 249	1.82	1.92	273 515	48.61	1.76
Shan State	4.54	5 591	1.23	1.29	122 250	26.96	0.98
Ayeyawady Region	6.44	3 684	0.57	0.60	131 112	20.35	0.74
Nay Pyi Taw	0.96	1 534	1.59	1.67	39 848	41.38	1.50
Union	47.90	45 346	0.95	1.00	1322 053	27.60	1.00

Source: Health Management Information System, Department of Health Planning, Ministry of Health (4 July 2013).

Figure 4.5 Scatter plot showing discrepancy index of hospital beds and hospital utilization



Source: Health Management Information System, Department of Health Planning, MOH (4 July 2013)

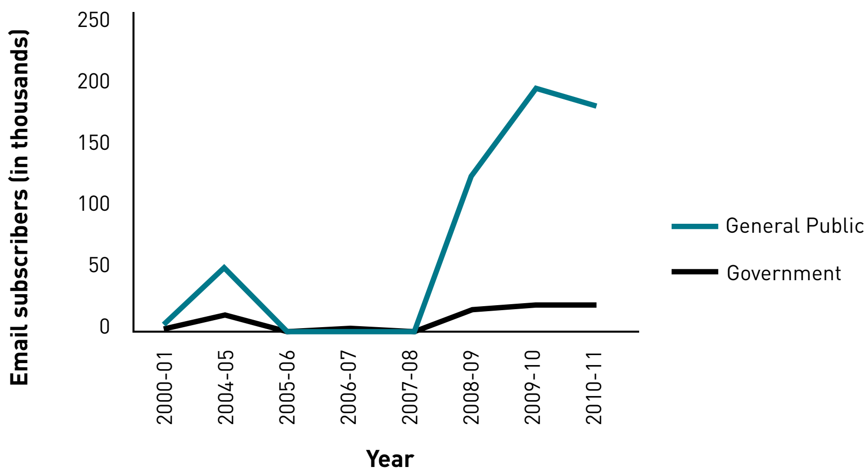
4.1.3 Medical equipment

Major pieces of medical equipment are funded by the government capital budget, prioritized according to need. The Central Medical Store Depot (CMSD) usually runs a tendering process yearly to the pharmaceutical companies for medicines and medical equipment, usually under the government tendering system. General radiography (e.g. X-ray machines) represents as most basic equipment available at township and station hospitals across the country. Computed tomography (CT) was previously only available in Yangon and Mandalay General Hospitals. Recently, MOH has procured 30 CT scanners and by the end of 2013 they will be available in the general hospitals of all regions and states. Five magnetic resonance imaging (MRI) scanners are operated – in Yangon General Hospital, North Okkalapa Teaching Hospital, Thingangyun General Hospital in Lower Myanmar,and Mandalay General Hospital and Nay Pyi Taw 1000-bed hospital in Upper Myanmar. However, there is a need to strengthen regular maintenance mechanism of medical devices at the hospitals, for which the Medical Care division of DOH has oversight.

4.1.4 Information technology

Myanmar Posts and Telecommunications provided Internet service to some government agencies and private users with an initial capacity of 400 dial-up lines (1998) and in order to promote information and communications technology (ICT) in the country. Internet and email service was introduced by Myanmar Teleport in March 2002 and can be used with any digital telephone line. There is 42% telephone line coverage in Yangon and 58% in other parts of the country; while mobile phone (cellular, CDMA and GSM) coverage is 43% in Yangon and 57% for the remainder of the country. Email subscribers and Internet usage of government agencies and general public (private use) increased sharply during 8 years of utilization between 2000 and 2010. The use by general public has been far greater than that of the government use since 2008 (CSO, 2012).

Figure 4.6 Trends of email subscribers in government sector and general public (private use)

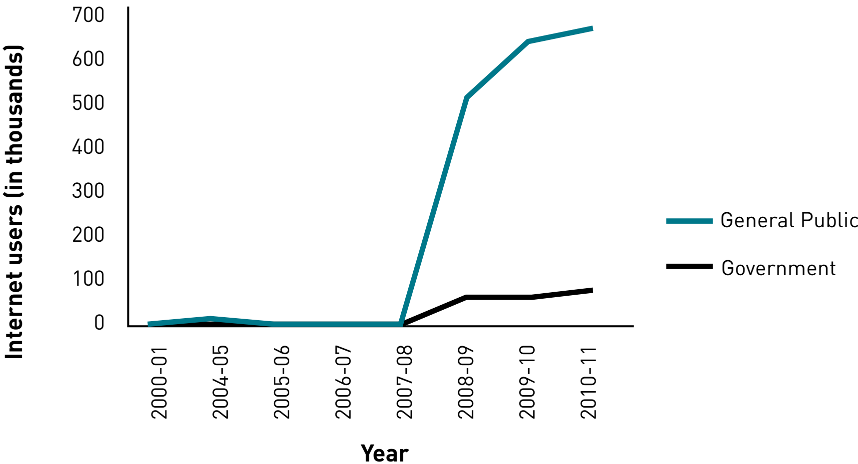


Source: CSO (2012).

The Health Management Information System (HMIS) under the Department of Health Planning (DHP) is the sole health information system of MOH, with data for both public health and hospital care at all levels. HMIS depends mainly on the health staff and health care facilities at the village and ward, township, district and region/state levels. Supplies of computers and development of fibre-optic lines and asymmetric digital subscriber line (ADSL) between central and regions/states had been instituted, but ICT infrastructure is not well established

in some distant townships. Computers are available at the townships, but the medical record system and compilation of information at the RHC and Sub-RHC levels are still manual. Only at the region/state level are there assigned statisticians to compile data and send to the central HMIS unit. Communication through mobile telephone links is established down to township level, so that email and Internet access are available, but are not yet used for health-information mobile networking. ICT equipment maintenance support is available only at the central level and the health information section at central level is currently running an integrated database containing data from routine service statistics, some vital registration and some surveillance data only. The medical recording system running with computers in the medical record department is seen in some tertiary-level teaching hospitals and some regional/state hospitals. This is an area that needs to be expanded and improved. Information gathering from the private sector was initiated in January 2013 in all 166 registered private hospitals. Training in medical records has been given to the responsible persons in these private hospitals and a system has been developed linking hospital license extension at the end of each year to completeness of reporting medical records to HMIS.

Figure 4.7 Trends of Internet use in government sector and general public (private use)



Source: CSO (2012).

At the central level, DHP has started a process of nationwide GIS mapping of health infrastructure, including geographical reference maps down to village level and mapping of the regions/states to cover the whole country will be completed by the end of 2013 (MOH &WHO, unpublished

information, 2012).This system is constrained by lack of village-level population data, but that problem could be solved by an upcoming census.

More technical and financial support is needed for the development of tools, hardware and software for communication, data transfer, data processing and analysis, and establishment and maintenance of database. An e-health strategic plan is to be drawn up in the near future.

4.2 Human resources

4.2.1 Health workforce trends

The MOH has no central database for the health workforce, but different MOH departments have their own databases. There was human resources for health (HRH) situation analysis in 2011. The MOH is now in the process of developing a central database system specifically for medical doctors. The total health workforce increased 20% between the fiscal years 2006–2007 and 2010–2011. Doctors, nurses and midwives per 1000 population increased from 1.27 in 2006–2007 to 1.49 in 2010–2011 (Table 4.5). These figures are similar to the World Health Statistics 2013 of 1.36 physicians, nurses and midwifery personnel per 1000 population from 2005 to 2012 (WHO, 2013c). Although the number of health workers in Myanmar increased, it was still far below the global standard of 2.28 health workers (doctors, nurses and midwives) per 1000 population.

Table 4.5 Health workers at national level, 2006–2007 and 2010–2011

Health occupational categories/cadres	2006–2007		2010–2011	
	Total	HW/1000 population (46 605 278)	Total	HW/1000 population (47 963 012)
Medical practitioners/physicians/ doctors/ Medical officers	20 501	0.44	26 435	0.55
Health assistants	1 778	0.04	1 899	0.04
Graduate/registered/professional nurses	21 075	0.45	25 644	0.53
Midwives	17 703	0.38	19 556	0.41
Dental surgeons	1 732	0.04	2 562	0.05
Dental technicians and assistants	165	0.00	287	0.01
Lady Health Visitor	3 137	0.07	3 344	0.07
Public health supervisors 1&2	1 923	0.04	2 621	0.05
Traditional medicine practitioners	5 841	0.13	6 627	0.14
Total	73 855	1.58	88 975	1.86

HW: health workers.

Source: MOH (unpublished data, 2012).

Regional allocation of sanctioned posts of doctors and nurses (per 1000 population) is high in Yangon and Mandalay regions, where most tertiary and teaching hospitals are located (Table 4.6). Doctor and nurse posts are most concentrated in Kachin, Kayah and Chin states. However, Kayin, Mon and Rakhine states, and Sagaing, Taninthayi and Ayeyawady regions have fewer doctors and nurses per 1000 populations than the Union (national) average; this may be due to the fact that they have fewer hospitals than the Union average. Mandalay and Yangon regions have fewer midwives per 1000 populations than the Union average – an effect of urbanization.

Table 4.6 Distribution of sanctioned health-worker posts by region and state

Region/ State	Doctors per 1000 population	Nurses per 1000 population	Midwives per 1000 population	Doctors, nurses and midwives per 1000 population	Discrepancy Index
Mon	0.06	0.10	0.17	0.33	0.48
Kayin	0.07	0.12	0.22	0.41	0.60
Bago (West)	0.06	0.10	0.25	0.41	0.60
Rakhine	0.07	0.12	0.27	0.46	0.68
Sagaing	0.08	0.19	0.24	0.51	0.75
Bago (East)	0.09	0.20	0.22	0.51	0.75
Ayeyawady	0.09	0.21	0.22	0.52	0.76
Taninthayi	0.11	0.22	0.22	0.55	0.81
Shan (North)	0.10	0.24	0.22	0.56	0.82
Magway	0.13	0.20	0.24	0.57	0.84
Shan (East)	0.16	0.28	0.25	0.69	1.01
Shan (South)	0.15	0.33	0.31	0.79	1.16
Mandalay	0.23	0.39	0.18	0.80	1.18
Kachin	0.18	0.38	0.32	0.88	1.29
Yangon	0.46	0.55	0.15	1.16	1.7
Kayar	0.26	0.45	0.65	1.36	2.00
Chin	0.59	1.60	0.89	3.08	4.53
Union	0.17	0.28	0.23	0.68	1.00

Source: MOH & DHP (2010).

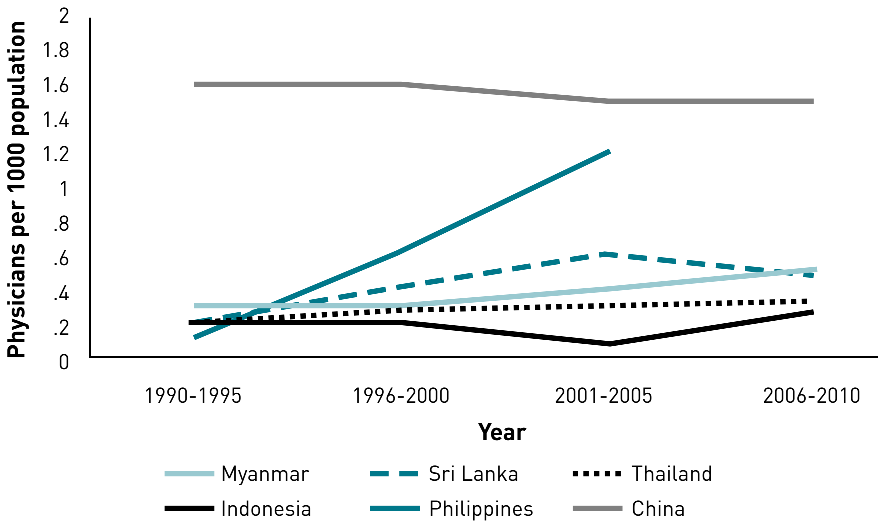
These data relate to sanctioned posts and indicate the attempt of the government to give priority to remote areas with difficult terrain although their population size is relatively small. If available posts were used, the

ratio would be slightly worse, as not all posts were filled especially in poorer regions and states.As difficulty in placing and retaining health workers in remote, border and less-secure areas often results in the posts being vacant, there is a big challenge in guaranteeing access to services in those areas.

Health workforce density

The density of physicians has been increasing in Myanmar as in other countries in Asia. According to available data (WHO, Undated), China has the most physicians per 1000 population, followed by the Philippines. The number of doctors in Myanmar from both public and private sectors gradually increased from 0.1 per 1000 in 1990 to 0.5 in 2010. The Philippines had a sharp increase in physician-to-population ratio from 1990 onwards, reaching to more than one doctor per 1000 population by 2005.

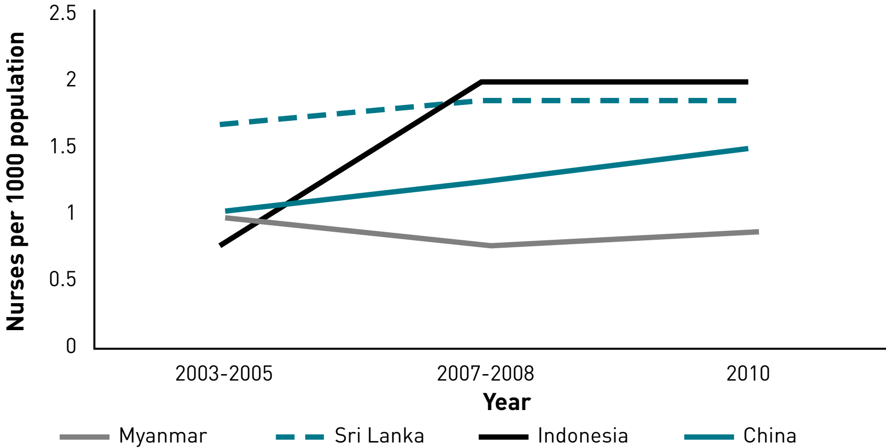
Figure 4.8 Number of physicians per 1000 population, selected countries, 1990–2010



Source: WHO (Undated).

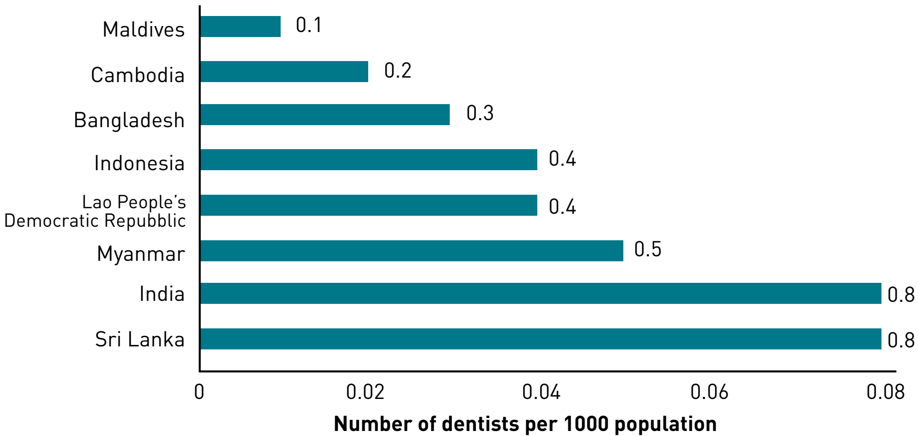
For nurses, data are available only from 2003 in the Global Atlas of the Health Workforce (WHO, Undated); the trend of nursing density was increasing in Indonesia and China from 2003 to 2010. In Myanmar, density of nursing was increasing, but less than 1 per 1000 population.

Figure 4.9 Numbers of nurses and midwives per 1000 population, selected countries, 1990–2010



Source: WHO (Undated).

Figure 4.10 Number of dental surgeons per 1000 population, selected countries, 2005–2012



Source: WHO (2013c).

Comparing the dentist–population ratio from 2005–2012 among the South-East Asian countries, Sri Lanka and India had 8 dentists per100 000 population and Myanmar just 5 dentists per 100 000 population, which is still below international norms (Fig. 4.10).

4.2.2 Professional mobility of health workers

In the early 1970s, newly trained doctors were deployed in the public service after sitting for interview at the Public Service Commission (PSC, now the Union Civil Service Board, UCSB) and appointment was given by MOH. At that time, all new graduates got a doctor's registration number (Sa Ma in Myanmar) from Burma Medical Council immediately after completion of their internship (house surgeon). New graduates who are not able to enter government employment are allowed to work in the private sector or move abroad. The majority enter the public health workforce, but as medical officer posts are only filled as positions become vacant, resulting in some graduates having to wait years before being called into service. After the 1988 crisis in the country, all schools and universities closed for some time, many doctors left the workforce and migrated abroad, medical graduates became scarce and very few entered the public health workforce. In the light of this, a notification was put in newspapers in 1994 for compulsory entry into public service after graduation for at least three years, and only after three years of compulsory service would they be allowed to released from service and emigrate. Registration procedures were changed accordingly, with Sa Ma only after three years of public service. After some years with the increased number of entry intake for medical doctors, the number of graduates had increased and deployment responsibility had to be shifted back to the Union Civil Service Board (UCSB). Newly trained doctors have to sit another examination set by the UCSB; 500 doctors were recruited in 2011 and 1500 in 2012. At present, all medical doctors are registered (Sa Ma) by Myanmar Medical Council (MMC) after completion of their internship. The MMC has been developing a database system of all medical doctors throughout the country through Sa Ma system.

The MMC is offering limited registration for foreign doctors to work in Myanmar with limited scope of work for providing medical and surgical care as joint teams with public-sector physicians, surgeons and ophthalmologists or in the private sector. In 2012, a total of 281 foreign doctors were registered and practised in the country, half in private practice and another half in charity services (mainly at government hospitals).The main nationalities involved in the private medical sector in Myanmar are Singapore (47%), Republic of Korean (15%), Thailand (12%), the United Kingdom (12%), Italy (9%) and Malaysia (6%). Countries' participation for charity service include humanitarian missions from Australia (25%), Germany (23%), Belgium and Japan (16% each), the United States (8%), Singapore and Republic of Korea

(6% each) and Israel (3%). These perform general medicine, surgery, obstetrics and gynaecology, as well as specialty services, e.g. cardiac surgery, cardiology, ENT, gastroenterology, neurosurgery, oncology, ophthalmology, orthopaedics, and plastic surgery and aesthetics.

The MMC, Myanmar Dental and Oral Medicine Council (MDC) and Myanmar Nurses and Midwife Council (MNMC) are working in alignment with Association of Southeast Asian Nations (ASEAN) member countries through the ASEAN Mutual Recognition Agreement (MRA). To comply with MRA, the laws and rules of Myanmar will have to be changed to focus on standard setting in order to align with other ASEAN member states by 2015 (MMC, unpublished information, 2013).

4.2.3 Training of health workers

Training of health workers is usually conducted by the MOH Department of Medical Science (DMS), which is also responsible for setting educational standards and revalidating qualifications to ensure medical competency. There are four civil medical universities offering seven-year courses for bachelor degrees of MB and BS; they also offer postgraduate diploma, master and doctoral degrees in different medical specialities. Annual national medical educational seminars are conducted where concerned academicians, rectors and responsible persons from DMS and DOH participate to upgrade curricula. Apart from this there is one Defence Services Medical Academy (DSMA) producing military doctors.

The Universities of Dental Medicine, Yangon and Mandalay are training dental health professionals. Each offers a 5.5-year Bachelor of Dental Science, Master of Dental Science and a Diploma in Dental Science. The University of Dental Medicine, Yangon also offers a Doctorate of Dental Science and a Diploma in Dental Technology. Each year, approximately 150 students are accepted into each university's Bachelor-level course. The Universities of Pharmacy, Yangon and Mandalay both offer a Bachelor of Pharmacy and Master in Pharmacy; and the Universities of Medical Technology, Yangon and Mandalay each offer a Bachelor of Medical Technology and a Master of Medical Technology.

The University of Public Health, Yangon was established in 2007 and offers a Diploma in Medical Science (Hospital Administration), Master of Public Health (MPH) and PhDs in relevant disciplines. Previously, MPH courses were only for medical doctors, but other professionals such as

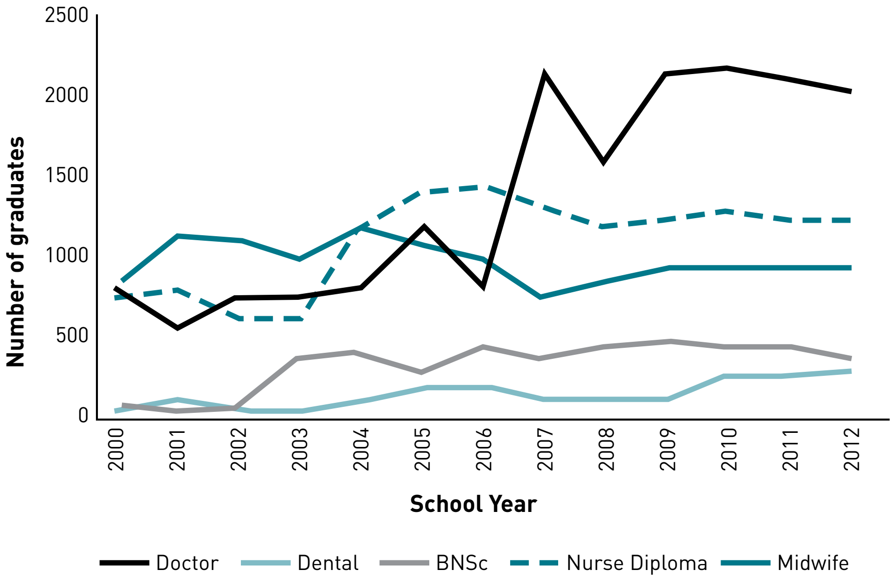
dentists, nurses and health assistants are being considered for admission in 2013. The University of Public Health also offers studies towards a Diploma in Medical Education for university teachers to improve the quality of teaching.

The University of Community Health, Magway offers a four-year Bachelor of Community Health (BComH). Graduates of this course become health assistants who provide primary health care in rural areas as team leaders at RHCs.

For nursing, there are total of 46 nursing, midwifery-related and lady health visitor (LHV) training schools. During 2010, a Nursing and Midwifery Educational Seminar was held at MOH, attended by faculty members from all universities and training schools, senior staff concerned with nursing and midwifery education from DOH and other departments, where review and revision was done on both the three-year Diploma in Nursing and the 18-month Certificate in Midwifery curricula. Following recommendations from this seminar, the 18-month midwifery certificate course was upgraded to a two-year diploma course. Twenty-three nursing training schools offer a three-year nursing diploma and 20 midwifery training schools offer the two-year midwifery diploma. Outstanding diploma nurses may develop their careers by joining bachelor degree courses through a two-year nursing bridge course. At the university level, there are two nursing schools offering undergraduate (4-year bachelor course) and postgraduate formal qualifications. LHV Training school in Yangon offers nine-month certificate course and qualified experienced midwives who pass the entrance exam are eligible to attend this course (DMS, personal communication, 2013). Nursing Field Training Schools and Domiciliary Midwifery Training Schools do not confer formal certification from their nine-month courses.

Production of doctors, nurses, dental surgeons and midwives is shown in Fig. 4.11 for 2000 to 2012, showing a significant increasing trend of production of doctors in 2007. Dental surgeon and BNSc nurse production have less than 500 graduates a year. Pharmacists and other technicians follow the same trends as dental surgeons (Fig. 4.11). In order to improve the health workforce situation in the public sector, a Human Resources for Health Master Plan was prepared in 2012 for projection of human resources for health for the next 20–30 years.

Figure 4.11 Trends in numbers of graduates of different categories of health professionals, 2000–2012



Source: Data from the Department of Medical Science (28 May 2013).

Postgraduate training

DMS provides 6 diploma training courses, 29 master's courses, 8 PhD courses and 36 DrMedSc courses each year; a Diploma for Medical Emergencies started in the 2012–2013 academic year.

4.2.4 Doctors' career path

Medical officers are allowed to sit for a postgraduate training exam after two years serving in their first public-service posting. After postgraduate training, medical officers become a specialist assistant surgeon, while those without postgraduate training continue service in townships. At the time of the Socialist Republic of the Union of Burma, the State Council set policy and procedures for the promotion of all levels of staff in June 1980 – MOH is still using this policy for promotion of all categories of staff. Set rules go according to pay scale, counting service years, advancement in education and performance appraisal. Performance appraisal of staff for promotion purpose (Wa Pha 1–4) was set by the central government in 1980 and is still in use (Socialist Republic of Union of Burma, Ministries Office, 1980, letter no. 2/82 wa pha 80 (53)).

Those having an additional degree, with seven years total service and five years after obtaining their postgraduate qualification are entitled to sit for a promotion exam to become junior consultants. With experience of 5–7 years as junior consultant they are entitled to become senior consultants if there is a vacancy. This whole process is managed by DOH. Similarly, DMS has its criteria setting for promotion of demonstrator to assistant lecturer and lecturer on the academic side. With additional years of experience and academic background, senior consultants may become associate professors and professors, with DOH and DMS working together for this promotion as the professors have to both provide services and perform an academic role. For the administrative line, the same principle is used for promotion to assistant director, deputy director, director and deputy director general up to the post of director general (MOH letter no. 24 Ma Kha (Ga) 80/958 dated 8 April 1981: Regulations for promotion).

Medical doctors posted in the townships as heads of the township health department (TMOs), used to be rotated every three years to and from townships with both good and poor socioeconomic status with the aim of achieving equity in serving the rural community; but this practice of transfer of TMO every three years has negative effects on health system development in the locality as it results in less TMO adaptation and sense of belonging to the community. In some cases, TMOs have dropped out of the health workforce because of rapid transfer of posting from one place to another or even with promotion transfer to another township. This applies not only to TMOs, but also to other categories of doctors, specialists, nurses and BHS. Usually BHS are less likely to be transferred once posted and they would be transferred only when considered for promotion.

4.2.5 Other health workers' career path

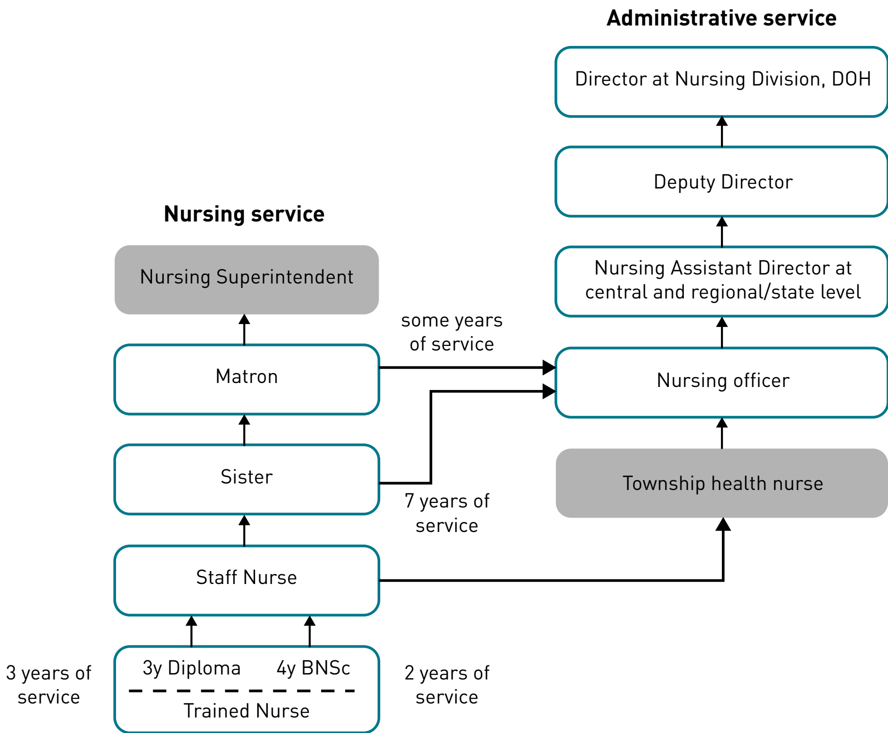
Myanmar has a unique health system based on the township health system, which provides curative health care by hospital staff and preventive and promotive care by the BHS serving in the community. Typical staff complement at an RHC is 13 BHS, one health assistant (who is the leader), one LHV, 5 midwives, 5 Public Health Supervisor 2 (PHS-2) and one watchman.

Career path of nurses

When nurses enter the workforce, they have to serve in public health facilities throughout the country, DOH and other sectors like Ministries

of Mines and Railways. First, they are posted as trained nurse wearing red sarong (long skirt). Diploma-trained nurse after three years of service and BNSc trained nurse after two years of service can become staff nurse (blue sarong). After seven years, staff nurse can become sister (green sarong). Staff nurse can also be promoted to township health nurse (green sarong)) as public health professional and can then be promoted tonursing officer (administrative post) and carry on as nursing assistant director. Sistersin hospitals after some years can be promoted to matron (light blue sarong) and final position in hospital is nursing superintendent(yellow sarong). From matron post they can change professional line to administrative role to become nursing officer, promoted to nursing assistant director at central and regional/state level, and deputy director up to director in the nursing division of DOH (see Fig. 4.12). On the administrative side, nursing school principals from DMS could later become nursing officer, assistant director, deputy director and director in either DMS or DOH.

Figure 4.12 Nursing profession career advancement



Source: Asia Pacific Observatory on Health Systems and Policies

For posting, transfer and promotion, nurses also tend to leave the public sector more frequently than doctors as they can practice as special nursing carers in private hospitals. Some nurses who choose not join the public service after training pay a fine to compensate for having signed a bond for public service after training and practise in the private sector.

Career path of health assistants

The government stopped the formal health assistant course (2 years and 3 months) in 1973 with the policy decision that medical schools had to increase production of doctors and doctors have to replace health assistants. In 1976, the government sanctioned 30 rural health doctors posts and 2–3 batches of doctors were deployed in 1977–1979.The concept behind the assignment of medical officers at the RHC as rural health doctors was also to prepare those RHC likely to become station hospital or station health unit in the future (this was also in the era of enhancing rural development in the People's Health Plan era). After two years, those 30 rural health doctor posts were taken by the Medical Care division of DOH and doctors were no longer appointed as rural health doctors as it was decided to keep doctors at station hospitals to at least perform emergency surgical care, facilities for which were not available in RHCs.

By 1980, deployment of doctors in RHC was stopped and a Condensed Health Assistant course was started in 1980. This course started as part of a career development programme opened for the LHV and PHS-1 after some years of service to become health assistant.

The formal Health Assistant course (2 years 3 months) restarted in 1984. The Health Assistant Training School was then upgraded to School of Health Sciences and later to University of Community Medicine, and the formal Health Assistant course became a four-year degree course. While basic education requirement and total training period changed overtime, the graduates are still health assistants, with their functional roles unchanged. Health assistants, after serving in the community for seven years can become health assistant-1 and later could be promoted to township health assistant (THA) which is an officer.

Career path of midwives

A midwife could attend either a nursing diploma course or an LHV training course after serving three years in the public sector. From LHV

after another three years of service she can become health assistant and follow the career ladder up to township health assistant or become township health nurse up to nursing officer post. However, if she chooses to take a nursing diploma and become a nurse she can then go along the nursing career path.

Career path of public health supervisor-2

Public health supervisors-2 (entry level: high-school 'graduate') can become public health supervisor-1 after three years of service and after attending training for a year. From public health supervisor-1 they could become health assistant, health assistant-1 up to THA.

Career path of pharmacists

After completing Bachelor of Pharmacy, pharmacists become medical technician (pharmacy) grade 2 at entry into service and assigned to the hospitals under DOH and departments under FDA. After 3–5 years in service, depending upon post availability they could be promoted to technical officer (pharmacy).

Career path of medical technicians

When graduated with a bachelor degree, other technicians like laboratory technicians, radiology technicians and physiotherapist normally start working at medical technician grade 2 at a public hospital. Subsequently, and according career ladder openings, they can climb to technical officer level.

Voluntary health workers

In the hospital setting, doctors, nurses, technicians, pharmacists and social workers work in coordination for the medical care of patients. Similarly at the township level, the TMO has the responsibility of hospital care as well as for the public health services – where they have to lead the vertical team leaders and staff of disease control campaigns, work well with the BHS at the RHC level and also get the strength of the community volunteers and local NGOs for social mobilization in the community. Since 1980, CHWs and AMWs have been trained as voluntary health workers (VHW) selected from the villages, given training for one month for CHW and six months for AMW mainly with the support by WHO, USAID and UNICEF. They have to serve in their own community as

a bridge between the midwife and the community. Previously, most of the CHWs helped midwives by fetching children for immunization, and also in environmental sanitation and health education. Nowadays, mothers in the communities have gained more understanding of child immunization and CHWs can perform other higher-level services such as nutrition surveillance, malaria case finding (using rapid diagnostic test, RDT) and treatment, case management of pneumonia and diarrhoea in children under five (with simple antibiotics) and referral, and identification of risk pregnancy for referral according to need. Villagers with at least middle school education were recruited to be trained as AMWs. Training of AMWs is conducted by township training team headed by TMO with the support of UN agencies, regional government, local Maternal and Child Welfare Associations and international development partners. Although many AMWs have been trained, some of them dropped out as a result of (e.g.) moving to other places, getting married or finding new jobs. Data for 2012 indicate a total of 18 505 CHWs and 19 808 AMWs over the country with 15–20% attrition for CHWs and 5–10% attrition for AMWs (BHS section, DOH, unpublished data, 2013). VHWs are given recognition by MOH once every two years by holding Outstanding BHS and Voluntary Health Worker's Tour where CHWs and AMWs who have performed well in the communities are selected and sent together with outstanding BHS for a one-week trip upcountry for site-seeing and the Minister of Health used to host dinner and present awards to the outstanding BHS and Health Volunteers during this trip. This social recognition is an effective motivation and morale support to retain them as volunteer health personnel for the benefit of their own community.

5 Provision of services

Chapter summary

The Ministry of Health (MOH) is determined to deal with communicable diseases, noncommunicable diseases (NCDs) and the high burden of maternal mortality in the country. The Department of Health (DOH) is mainly responsible for the management of public health activities through various national programmes and implementation in collaboration with development partners, civil service organizations and community-based organizations. Public health services in Myanmar are delivered to the communities by rural health centres (RHCs) and sub-rural health centres (Sub-RHCs) through corresponding township, district, and region and state health departments that provide technical assistance and support. Campaigns and implementation of specific national programmes such as those for tuberculosis, malaria, HIV/AIDS, leprosy, and prevention of blindness are systematically delivered at all levels. Maternal and child health (MCH) services and prevention of vaccine-preventable diseases through the expanded programme on immunization are delivered together with nutrition promotion, health education and environmental sanitation services in the community. While the disease surveillance system is well established in the public sector, there is still room for improvement in getting information from the private sector. International health regulation core capacities have been strengthened at eight points of entry into the country, but there are gaps in human-resource and infrastructure development. There will be more challenges in this area with the new airport, sea ports and border-crossing projects. Occupational hazards are taken care of by the Occupational Health Department. Services provided for NCDs not only cover treatment, but also prevention, control, and reduction of disease, disability and premature deaths due to chronic disease and conditions. Primary ambulatory care is usually provided by all outpatient departments at the hospitals, urban health centres, MCH centres, school health teams, RHCs and Sub-RHCs that handle outpatient care. Emergency, specialized ambulatory and specialized inpatient care are handled by the hospitals at all levels according to their capacity. Specialized inpatient care is

conducted in both public tertiary hospitals and private specialist clinics and hospitals. The Central Medical Store Depot procures and distributes medicines to hospitals all over the country, but supplies are insufficient; management of the supply chain needs to be strengthened. Meanwhile, private pharmacies and drug stores are reaching consumers, who then incur out-of-pocket expenses. The country has institutional care like homes for long-term care of the aged and also community-based care by volunteers implemented in over 150 townships supported by Help Age Korea, and DOH is implementing an elderly health care project in another 150 townships opening weekly clinic for care the elderly at the RHC level. Though dental care is based on clinical institutional care, it is also concerned with public health where oral health programmes are conducted in schools for schoolchildren. Traditional medicine of Myanmar also has an important agenda as regards service delivery as many rural people still rely on traditional herbal medicines.

5.1 Public health

Under the Department of Health (DOH), specific national programmes have set strategies to reduce morbidity and mortality from communicable diseases such as tuberculosis, HIV/AIDS, malaria, dengue haemorrhagic fever (DHF) and some neglected tropical diseases. Also maternal and child health, nutrition and immunization services are provided for the reduction of maternal and child mortality. Public health is provided through regional/state health departments, where there is a regional/state-level public health section, disease control campaigns and surveillance sector working in collaboration with the regional/state-level organizations and under the guidance of regional/state governments implementing up to the township level. As 70% of the country's population resides in rural areas and the basic structure of the national health system lies at the township level, the so-called township health system serves as the backbone of health care provision taking the major portion of the public health service delivery component through a primary health care (PHC) approach.

5.1.1 TB and TB–HIV coinfection

Myanmar is among the 22 TB high-burden countries, 27th in the list of multi-drug resistant (MDR)TB high-burden countries and 41st in TB–HIV high-burden countries in the world. National TB control activities have been implemented since 1966–1967 and were integrated with PHC activities in 1978. A National TB Programme (NTP) is operating with 14

regional and state TB centres and 101 TB teams at district and township levels. In 1994, the standard regimen used for TB patients was replaced by short course chemotherapy (SCC) and the implementation of a directly observed therapy – short course (DOTS) strategy in 1997. By 2003 all townships had been covered by the DOTS strategy. The Stop TB Strategy was initiated in Myanmar in 2007 and was embedded in the five-year National Strategic Plan (NSP) (2011–2015) (DOH-NTP, 2011). TB patients are treated by patient kits with fixed dose combination drugs according to the type of TB.

The National TB/HIV Coordinating Body has been built up since 2005 and joint training is regularly given to different levels of health staff from both NTP and the National AIDS Programme (NAP). Activities were initiated in collaboration with international nongovernmental organizations (INGOs), particularly UNION in Mandalay in 2009. Altogether 136 townships are implementing TB–HIV collaborative activities in 2014 – scaling up is limited by the availability of antiretroviral therapy (ART). The MDR-TB management pilot project was started in 2009 at 2 TB hospitals and in 10 townships, and expanded to 68 townships in 2014 with collaborative efforts by NGOs and INGOs. Public–private mix DOTS (PPM-DOTS) activities have been implemented since 2004 in collaboration with Myanmar Medical Association (MMA), Population Services International (PSI) and Japan International Cooperation Agency (JICA). PPM-DOTS was initiated at 4 general hospitals in 2007, expanding to 23 hospitals by 2013. In 2014, PSI implemented PPM-DOTS in 198 townships with 923 active private practitioners under Sun Quality Health clinics. PSI also trained 2610 PHC volunteers working under Sun Quality Health clinics of PSI, of which 1827 also actively participated in PPM-DOTS. MMA also implemented PPM-DOTS in 122 townships with 1286 active general practitioners (GPs). Community-based TB control activities were initiated in 2011 (Program Manager, NTP, DOH, Nay Pyi Taw, personal communication, 2013).

5.1.2 HIV/AIDS

HIV/AIDS prevention and care activities have been implemented in Myanmar as a national concern since 1989 with high political commitment. National response to HIV and AIDS is being implemented in the context of the NSP (2011–2015) developed with participation of all stakeholders, under the guidelines given by the multisectoral national AIDS committee (formed 1989), and is monitored according to the National Monitoring and Evaluation Plan. Myanmar has scaled

up the implementation of the 100% Targeted Condom Promotion (TCP) programme since 2000 and has covered 170 townships through coordination meetings, advocacy meetings, syndrome management training on sexually transmitted infections (STI) for basic health staff (BHS), peer education and awareness-raising activities. Increased access to condoms with high condom use among risk groups has been achieved through distribution of over 35 million condoms in 2011. Methadone maintenance therapy (MMT) started in 2005 and covered 18 drug-dependence treatment and rehabilitation centres in 2012. A Needles and Syringes Exchange Programme has been implemented with some INGOs in Kachin and Shan states with distribution of more than 9 million needles in 2011. HIV/AIDS prevention activities among the youth are under the auspices of the Ministry of Education and related programmes under MOH (e.g. School Health and Adolescent Health in collaboration with local and international NGOs).

ART started in 2005 and covered 48 hospitals for adults and 28 paediatric hospitals in 2012. Through coordinated efforts of 15 implementing partners, at the end of December 2012, some 53 709 patients were being provided with ART. However, the gap between the need for ART and availability of resources remains wide and training in integrated management of AIDS and related illnesses was conducted during 2011 and 2012 in various regions and states. An integrated HIV care (IHC) programme has been started with UNION covering 18 sites. Through IHC, ART has been provided in public hospitals to AIDS patients with and without TB coinfection.

Prevention of mother-to-child transmission (PMTCT) of HIV was initiated in 2001 and already covered 253 townships and 38 hospitals (including region and state hospitals) by 2012. Multidisciplinary regional/state PMTCT training teams were formed and conducted advocacy meetings, training in townships, and community mobilization at township level. Two of the weaknesses of the PMTCT programme are lack of partner testing and lack of follow-up of children born to HIV-positive mothers. People living with HIV (PLHIV) networks are trained to play an essential role in pre- and post-test counselling, couple counselling, and tracing of defaulter cases, to help improve compliance across the continuum of care.

A donor deferral system for the Blood Safety Programme has been introduced with JICA support and a National External Quality Assessment

Scheme (NEQAS) of HIV testing was established. Although Myanmar has successfully gained a Global Fund Round 9 Grant for scaling up of activities in the coming years, the next NSP (2011–2015) needs to be fully funded by both international and domestic sources for achievement of Millennium Development Goals (MDGs), Universal Access and achieving the Three Zeros –zero new HIV infections, zero stigma and discrimination, and zero death (Program Manager, NAP, DOH, Nay Pyi Taw, personal communication, 2012).

5.1.3 Malaria

The National Malaria Control Programme (NMCP) positioned within the National Vector Borne Diseases Control (VBDC) Programme under DOH has been responsible for policy and strategy development and programme evaluation. At the regional/state level, malaria control is integrated into the general health services. The NMCP has a cadre of staff at the regional/state level which complements the region/state and district health system staff in the implementation of prevention and control of malaria and other vector-borne diseases. At the township and village levels, malaria services are delivered by highly motivated township-level BHS.

Preventive measures have been conducted by malaria risk area microstratification and identifying 80 endemic townships from 12 regions/states in 2007 applying stratification guidelines that had been developed through collaborative efforts between the United Nations Children's Fund (UNICEF), WHO, Japan International Cooperation Agency (JICA) and Vector Borne Diseases Control (VBDC/MOH) and expanding to 50 townships each in 2011 and 2012 making a total of 180 townships in 2012. Restratification of the first 80 townships was conducted during 2009-2010, validating by malariometric survey in some targeted townships; (61.8% of the population resides in malaria-transmission and the remaining 38.2% in malaria transmission-free areas in 2012). Long-lasting impregnated bed nets (LLIN) were provided free of charge since 2001. Based on three years cumulative LLIN coverage, the total population covered by the Insecticide Treated Net (ITN) programme was over 2 million in each of 2009 and 2010, and nearly 3 million in 2011. But there is still a large gap to scale up LLIN coverage.

Dissemination of key information and messages on malaria is done through various media channels: TV, radio, video, newspapers, magazines and individual health talks with special emphasis on regular use of bed nets and early seeking of quality diagnosis and prompt appropriate

treatment. A total of 0.14 million posters and 3.6 million pamphlets were distributed to malaria endemic areas from 2009 to 2011, all in Myanmar language and heavily illustrated for providing health education.

For early diagnosis and treatment, according to the new antimalaria treatment policy, case management with artemisinin-based combination therapy (ACT) was introduced all over the country in 2009. In 2013, approximately 1.7 million people were tested for malaria parasites. Of these, 0.32 million tests were positive, giving a malaria positivity rate of 18.98%. Malaria microscopy was the only diagnostic tool in Myanmar until 2006 before the Three Diseases Fund (3DF) was launched. From 2007 onwards, rapid diagnostic test (RDT) kits were available for early detection of malaria.

NMCP has also been partnered by several international and local NGOs; however, a very large part of the service delivery for malaria control operations, including monitoring and supervision, are being carried out by the public-sector health services greatly strengthened over the past six years mainly at the RHCs, Sub-RHCs and village health volunteers resulting in well-functioning service delivery for malaria in villages.

The Three Millennium Development Goals (3MDG) Fund started in 2013 to fill the gaps in the Global Fund to Fight AIDS, Tuberculosis and Malaria support. Global Fund new funding model and Regional Artemisinin Resistant Initiative are being developed for further improvement of the malaria situation in Myanmar (Retired Deputy Director General (Disease Control), NMCP, DOH, Nay Pyi Taw, personal communication, 2013).

5.1.4 Leprosy

Leprosy is a chronic infection that was eliminated in Myanmar in 2003 and is no longer a public health problem. However, it still requires attention in terms of sustaining leprosy control activities such as new case finding and treatment in areas with high prevalence (pocket areas)[22] and hard-to-reach areas, and providing quality leprosy services focusing on prevention of disability (POD) and rehabilitation of persons affected by leprosy. POD has been carried out in 147 townships with regular follow-up case assessment, self-care training and provision of necessary drugs, aids and services at the end of 2013.

22 A leprosy pocket area is an area where at least 5 new cases are detected within a 5 year period.

Mental illness, drug abuse and avoidable blindness are also emerging health issues in Myanmar for which prevention and control measures have been started.

5.1.5 Disease surveillance

The Central Epidemiology Unit (CEU) is the national focal point for communicable disease (CD) surveillance and response, working in collaboration with related ministries, departments and organizations. The national surveillance system focuses on the surveillance of the epidemic-prone CDs (severe diarrhoea, cholera, dengue haemorrhagic fever and plague), 17 Diseases Under National Surveillance (DUNS) (including diarrhoea, dysentery, food poisoning, typhoid and paratyphoid), emerging infectious diseases, post disaster CDs, climate-related CDs, vaccine-preventable diseases, and early warning, alert and response system (EWARS). Private sector routine reporting of CDs needs strengthening, although some in the private sector are actively participating in CD prevention and control programmes and collaborative effort is seen between CEU and private hospitals.

Myanmar actively participates in the Mekong Basin Disease Surveillance (MBDS) and Greater Mekong Sub region (GMS) for disease control activities along the borders with Yunnan province of People's Republic of China, Lao People's Democratic Republic and Kingdom of Thailand. Cross-border check points have been established between Myanmar and each of the other three countries for CD surveillance, including new emerging diseases like severe acute respiratory syndrome (SARS) and avian influenza. However, areas that still need to be strengthened are: community-based surveillance, epidemiology, information and communications technology (ICT), laboratory, risk communication and research. Myanmar is strengthening International Health Regulation (IHR) core capacities at designated points of entry to the country, and is also making progress in conducting Field Epidemiology Training Programme (FETP) training, joint Rapid Response Team (RRT) training for health professionals at airports, sea ports and land crossings, holding regular border-control committee meeting and sharing information with neighbouring countries in the context of the ASEAN +3 Field Epidemiology Training Network (FETN), MBDS. However, gaps continue in human-resource quantity and capacity, and inadequate infrastructure, lab and medical facilities at land border crossings. With the limited resources available, new points of entry, such as the new airport in Nay Pyi Taw,

new seaports at Kyaukphyu, Sittwe, Dawei and Thilawa, and the new land crossing to China (Muse-Shweli), it is still necessary to build up the core capacity at point of entry to meet the requirements for implementation of IHR. (Assistant Director, CEU, DOH, Nay Pyi Taw, personal communication, 2013).

5.1.6 Preventive services

The Myanmar Expanded Programme for Immunization (EPI) was launched in 1978, introducing bacille Calmette–Guérin (BCG for TB), diphtheria–pertussis–tetanus (DPT) and tetanus toxoid (TT) vaccines, and oral polio (OPV) and measles vaccines from 1987. The new vaccine for hepatitis B was added to the routine immunization programme from 2003 to 2009. EPI has been running with support from WHO, UNICEF, Global Alliance for Vaccine Initiative (GAVI) and other partners to reduce the morbidity and mortality of the children from vaccine-preventable diseases thereby achieving MDG 4. With the change of the government and health financing, the government cofinances (US$ 1 million) the cost for the new Pentavalent vaccine (DPT + Haemophilus influenzae + hepatitis B), which was introduced into the routine immunization schedule in 2012. The EPI is largely implemented by midwives trained at PHS-2 status and who ensure coverage in their catchment areas. A "crash immunization" activity is carried out in hard-to-reach areas within three consecutive months particularly in open seasons. The national average of DPT3 coverage was fairly high during 2009–2012, but there are pockets of low immunization coverage in border areas, physically hard-to-reach areas, in urban slums and among migrant communities. Comprehensive data analysis has been conducted for all regions and states up to the health centres under the township health department based on 2011 achievements: 179 townships showed RHCs having less than 80% DPT3 coverage (Program Manager, EPI, DOH, Nay Pyi Taw, personal communication, 2013). In 2012, the year of Intensification of Routine Immunization (IRI) was launched, setting the objectives of reaching the unreached, reducing the gap, ensuring that no one is left behind and all have equitable access – i.e. achieving universal coverage of routine immunization. Even so, the distribution of health services is not equal everywhere, as a result of shortage of basic health workers in hard-to-reach areas and conflict areas, lack of cold chain or inability to reach inaccessible areas (coastal or hills).

Maternal and neonatal tetanus was eliminated in 2010 and the measles mortality reduction goal reached, and the country is on track for measles, rubella and congenital rubella syndrome elimination. It is assumed that

poliomyelitis will be eradicated in early 2014 not only in Myanmar, but also in neighbouring countries. The high-level advocacy and communication strategy is used with participation of members of the NHC as well as local ministers of health and education from all regions and states – immunization has a high level of political commitment. Routine and supplementary immunization activities have also been strongly supported by local and international NGOs and other stakeholders, as demonstrated in the Mass Measles Campaign 2012.

Strategic plans for reproductive health, adolescent health and child health are directed towards achieving the MDG goals under the guidance of NHP. The five-year Strategic Plan for Reproductive Health (2009–2013) was successfully developed in 2009 by the reproductive health programme of DOH with the support of all implementing partners as a continuation of first five-year strategic plan for reproductive health 2004–2008 (DOH, 2009). The Plan sets core strategies for improving antenatal, delivery, postpartum and newborn care, providing quality services for birth spacing and prevention and management of unsafe abortions, preventing and reducing reproductive tract infection (RTIs), STIs (including HIV), cervical cancer and other gynaecological morbidities, and promoting sexual health, including adolescent reproductive health for both females and males. The United Nations Population Fund (UNFPA) is the main agency providing support on reproductive health to DOH and it also supports the Health Education Bureau for Behaviour Change Communication programme targeting community support groups to aid referral of at-risk pregnant women to midwives and also targeting youth centres for prevention of HIV/AIDS among out-of-school youths by peer education. Even with these efforts, there are still significant gaps in coverage of maternal health care: the proportion of deliveries with skilled birth attendance is 64%, a gradual improvement from 58% in 2005. Women in rural areas still prefer home delivery (80%) and the unmet need for family planning is 18% (DOP &UNFPA, 2009). Childhood stunting is a significant public health problem, with 35% moderately stunted and 13% severely stunted (MNPED, MOH & UNICEF, 2011).

The Five Year Strategic Plan for Child Health Development (2010–2014) and the National Plan of Action on Food and Nutrition (2011–2016) address: child health care; organizing the national coverage to prevent and reduce food, water, vector-borne and infectious diseases; preventing and treating pneumonia; ensuring exclusive breastfeeding of infants up to six months; promoting nutrition for prevention of micronutrient-deficiency

diseases; and intensifying programmes to treat acute moderate and severe malnutrition (MOH, 2012). In terms of combating micronutrient deficiency, vitamin A coverage is more than 90% as there is a twice yearly nationwide vitamin A supplementation campaign. The country's iodine-deficiency disorders elimination status was not maintained as there was only 81% iodization at factory level due to the salt-producing factories not following regulations and instructions for iodization. According to UNICEF's progress report (DOH & UNICEF, 2012), at least 60% of children under five, pregnant and lactating women nationwide received iron/folate and vitamin B1 supplementation to prevent anaemia and beriberi. Home fortification with micronutrient sprinkles was piloted in three townships and then implemented in another 17 townships. For severe acute malnutrition, Hospital Nutrition Units (HNU) were created in 14 hospitals in 2012, with a target of reaching 20 hospitals in 14 regions/states by 2015. The National Nutrition Centre (NNC) is working for Scaling Up Nutrition (SUN) together with UNICEF, Food and Agriculture Organization of the United Nations (FAO), World Food Programme (WFP), WHO and other development partners, as well as other line ministries. Nutrition promotion is not the responsibility of health sector alone and needs highly ambitious intersectoral and multisectoral cooperation and collaboration.

A nationwide deworming campaign has been conducted.

All these service-delivery activities are delivered at the township health department and there has been some integration in vertical programmes. It is believed that the best model would incorporate all activities in a coordinated township health plan with inter- and intra-departmental coordination and collaboration by all vertical programmes.

5.1.7 Occupational health

The Occupational Health Division (OHD) has been providing training on occupational health and safety, including occupational first aid, to employers, workers, supervisors, Basic Health Staff (BHS), nurses, and medical officers from factories. Screening factory workers for TB has been conducted in collaboration with NTP. OHD also investigates industrial accidents. It also assesses the environmental and health problems and impacts of industries in the various regions and states to prevent pollution of the environment (air, soil and water), yet it has been functioning with limited numbers of technical personnel and advanced instruments for on-site and confirmatory testing. Functions of OHD include the arsenic and fluoride mitigation project with UNICEF, air quality monitoring (AQM),

compilation of emission data on air pollutants in Yangon and Mandalay, surveillance of acute poisoning cases all over the country for the accident and poisoning database, and investigating heavy-metal poisoning. Even though the method and instruments of ambient air quality measurement are very old they are useful up to now and it is planned to upgrade both instruments and technology (Deputy Director (Occupational Health), DOH, Nay Pyi Taw, personal communication, 2013).

5.1.8 Sanitation

The Environmental Sanitation Division (ESD) of DOH supplies water for health institutions and promotes systematic utilization of sanitary latrines in both institutions and households. With the assistance of UNICEF, ESD implemented a latrine-construction project with free distribution of plastic pans and pipes from 1981 to 1995, and followed this up by conducting National Sanitation Week annually from 1998. Starting from 2011, ESD with the support of UNICEF has been pursuing Community Led Total Sanitation (CLTS) to free the open defecation status by mobilization approach of using community behaviour-change methods. Now it has been implemented at 282 villages in 21 townships aiming for the sustainability of the sanitary latrines constructed. In 2014, training of trainers programme and implementation of CLTS will be conducted at (220) villages of 4 townships in Magwe, Sagaing and Mandalay regions. (MOH 2012a).

5.1.9 Noncommunicable diseases

For noncommunicable diseases (NCDs), priority actions have been developed to prevent, control and reduce disease, and disability and premature deaths from chronic disease. These actions were: developing a comprehensive national policy and plan for prevention and control of major NCDs; establishing high-level national multisectoral mechanisms for planning, guiding and monitoring; implementing cost-effective approaches for early detection of major NCDs; and strengthening the human-resources capacity for better case management and to help people to manage their own conditions better. A population approach has been advocated to reduce the risk levels of smoking, drinking and lack of exercise in the population through community action and participation (MOH, 2013).

Public-health programmes in Myanmar are comprehensive and cover all the main health problems of the country. All programmes have clearly defined responsible persons/institutes. Public–private partnership and multistakeholder involvement has been observed in many programmes.

Services are adequately available for and accessible to the needy, e.g. LLIN in the high malaria transmission areas, while some programmes aimed for universal coverage, e.g. universal coverage of routine immunization. However, there is much room for improvement, in particular equity in immunization coverage and quality of services, e.g. ART adherence.

5.2 Patient pathways

Two cases of pregnant women who gave birth at a health care facility (Box 5.1) and at home (Box 5.2) are given as case studies.

Box 5.1 Delivery at health care facility

North Dagon township, situated north of Yangon, is a satellite peri-urban area with 25-bed hospital providing both ambulatory and inpatient care.

A 30-year-old lady married seven years previously missed her period for two months and tested herself with a UCG test strip, so knew that she was pregnant. She bought Furamin BC (iron and vitamins of the B complex) from a drug store by herself and had taken one tablet per day regularly up to seven months of pregnancy.

At seven months, at the suggestion of neighbours, she went to Dagon North outpatient department (OPD) for first antenatal care. She was asked for her last date of menstruation and the expected date of delivery was calculated by the staff as 29 June 2012. She was given a shot of tetanus toxoid, had her urine tested, was given an iron tablet and tablets for deworming. She was referred to Dagon East hospital for blood tests which she followed and was told the results were good. She went again to Dagon North OPD and was given second dose of tetanus toxoid.

Early on 14 July, she started to have labour pain and at 20:00 amniotic fluid passed out due to rupture of the membrane and she was taken to the hospital by taxi. As soon as she arrived at the hospital, she was examined and given a bottle of IV infusion (Synthocinon, i.e. oxytocin) and at 05:00 on the 15 July a baby girl (3 kg) was born by normal vaginal delivery. She was given medicines and said it cost about 33 000 kyats for medicines at the hospital and she was satisfied with the treatment from the hospital. She would like to have more knowledge on maternal and child health. (It is to be noted that the government is initiating a policy of providing delivery at health care facility free of charge.)

Box 5.2 Home delivery

Yedarshay township is situated in Bago East Region, has total population of nearly 200 000 people and the health service for this population is covered by the township hospital, two station hospitals (Swa and Myo Hla), Mother and Child Health, five RHCs and 25 Sub-RHCs.

A 25-year-old lady married for two years got pregnant; she knew when her abdomen was protruded. Her neighbours told her to see a midwife. As the midwife stays in a village near her home, she went there for antenatal care service for the first time. The midwife asked for her date of last menstruation, which she could not remember, so expected time of delivery was estimated through abdominal examination. The midwife checked her blood pressure, tested her urine, gave tetanus toxoid injection and supplied iron and vitamin B1 tablets. The follow-up visit was when the midwife came to the village for immunization of children and the mother was given another shot of tetanus toxoid. This time the midwife also gave her deworming tablets to take. She was given a booklet on what a pregnant mother should do during pregnancy, which the midwife read out for the pregnant women attending the session. The midwife also explained about eating nutritious food, the risks of pregnancy and referral in case of bleeding before pregnancy.

When labour pain came, the mother asked her husband to call the midwife and had to endure pain for nearly 8 hours before delivery of a healthy baby boy at her home. The midwife came and provided her services free of charge. Nonetheless, the patient and family gave the midwife some cash to show their gratitude for her help.

5.3 Primary/ambulatory care

In the public sector, RHCs, Sub-RHCs, MCH centres and Urban Health Centres provide ambulatory care and are patients' first point of contact with health staff. A total of 87 Urban Health Centres and 348 MCH centres cover urban areas of the country, while 1635 RHCs and 7581 Sub-RHCs provide primary ambulatory care to people in rural areas. Health promotion activities are conducted especially during antenatal care for pregnant mothers – nutrition promotion for mothers and children, exclusive breast feeding and safe motherhood measures – at the RHC, Sub-RHC and MCH centres. A total of 80 school health teams throughout the country provide general medical check-ups of school pupils, oral health care, personal hygiene and health education to different ages with different health topics.

In addition, all MOH hospitals, MOD hospitals, other ministries' hospitals and private hospitals (see Chapter 4) have OPDs for primary and ambulatory care. A total of 4640 private GP clinics and 444 polyclinics are available throughout the country. Patients can choose to go to see a doctor at any public or private health care facility, making their decision on the basis of acceptability, availability, accessibility and affordability .

5.4 Specialized ambulatory care, inpatient care and specialized inpatient care

Specialist OPDs exist in the general, specialized (e.g. Central Women's Hospital, Children's Hospital, Eye hospital, and Ear, Nose and Throat hospital) and teaching hospitals in big cities. Settings also differ according to the capacity of the general hospitals (see also sections 5.5 and 5.7). For instance, YGH has a well-established setting for ambulatory care including general medical care, minor surgery care attached to a minor surgery theatre, emergency cardiac care, orthopaedic care, laboratory, radiology and dental care. Moreover YGH also has radiotherapy, chemotherapy, and other sophisticated radio-imaging measures as ambulatory care services. Patients can be referred from lower-level health care facilities to get specialized ambulatory services in the general and specialized hospitals (requires a proper referral letter). Patients without referral letters can go to a general medical OPD, from where they will be referred to a specialized OPD if needed through the referral mechanism of that general hospital.

A specialized area of ambulatory care is mass operation of cataract surgery and intraocular lens replacement, which used to be conducted by public-sector eye surgeons in collaboration with private-sector eye surgeons especially from foreign countries. Chemotherapy is normally provided as specialized ambulatory care in both public and private hospitals.

Inpatient care is available in all public and private hospitals, and specialized inpatient care is available in tertiary public hospitals having specialities in over 17 disciplines. Radiation therapy for cancer patients as specialized inpatient care is available in three public general hospitals (YGH, MGH and Taunggyi Sao San Tun hospital). The 1200-bed Mental hospital in Yangon and the 200-bed Mental hospital recently established in Mandalay are the only hospitals for patients with long-term mental illnesses. Specialized inpatient care is available in central women's

hospitals, children's hospitals, orthopaedic hospitals, eye and ENT hospitals and Rehabilitation hospital. Central Women's Hospital Yangon has been upgraded to an 800-bed hospital, opening up posts for many obstetrics and gynaecology specialties like gynaecological oncology, fetal medicine and infertility. Sub-speciality staff have already been recruited and trained.

Specialized inpatient care is given not only at the public hospitals, but also in private hospitals as specialists in Myanmar are allowed to practise during out-of-office hours in private hospitals and clinics.

Specialized ambulatory care, inpatient care and specialized inpatient care are available throughout the country, but are still concentrated in the big cities. The needy can avail of specialized ambulatory and inpatient care depending upon their ability to access them (geographically) and pay for them. There is room for improvement, not only in terms of availability, but also in terms of the quality of specialized care with high concern for equity in utilization.

5.5 Emergency care

Emergency medical care in Myanmar is still being developed. The main organization leading emergency care to public is DOH through the emergency department of government hospitals. The centres providing emergency medical care exist only in major cities. At district and township levels, PHC centres receive patients with emergency illness and trauma and refer these to a higher level. The emergency department of most of the hospitals in Myanmar is not well organized compared to other developing countries. The modern emergency department occurs only in YGH, having been developed since the early 1990s. Specialist care for emergency patients by physicians, surgeons and trauma surgeons along with other allied departments like pathology, radiology and emergency operating theatre is available 24 hours a day, but a standardized emergency service system needs to be developed. In other cities and rural hospitals, there is no a separate emergency department due to lack of facilities and skilled staff; thus, the outpatient department has to provide both outpatient and emergency care. The emergency cases are received by a junior medical officer and referred to specific wards or other hospitals as there are no resuscitation facilities in most of the hospitals.

There is no Emergency Medical Service (EMS) system established yet for transporting patients from the district to a major hospital, only primitive

ambulance and other transport modalities are available. The transport of patients in cities relies solely on taxis, private cars and other vehicles rather than well-equipped ambulances. Even in Yangon city, no more than 3% of patients come to hospital by (poorly) equipped ambulances. DOH has procured 60 well-equipped ambulances in preparation for the 27th South-East Asia Games to be held in Myanmar in December 2013; after the games these ambulances will be distributed to states/regions for EMS (Medical Care division, DOH, Nay Pyi Taw, personal communication, 2013). At the same time, MRCS has been operating First Aid Stations at the 115-mile rest camp near Phyu township and the 285-mile Thegone rest camp near Meikhtila township on the Yangon–Nay Pyi Taw–Mandalay highway with the support of the Singapore Red Cross (SRC) Society. Teams of Red Cross volunteers from nearby townships and restaurant staff were trained, provided with mobile phones and walkie-talkies, and assigned at these first-aid stations. With provision of well-equipped ambulances from SRC, MRCS is helping reduce the number of deaths, injuries and impact from road traffic accidents by emergency management and necessary transfer (MRCS, unpublished information, 2013).

The new government has made efforts to improve the health system of Myanmar, including provision of emergency medical care throughout the country since 2010. MOH through DOH and DMS has planned and been implementing degree courses in emergency medicine as a new specialty in medical universities to produce emergency medicine specialists to lead the future development of standard emergency departments in major hospitals of Myanmar in 2012. The course consists of three stages: phase I delivers the diploma course (emergency medicine) to the specialists of various disciplines; phase II is the master degree course for M.Med. Sc (emergency medicine); and in phase III there will be expansion of the course to community doctors. At the same time, DOH is planning to upgrade the emergency departments of major city and district hospitals with modern equipment and facilities. The aim of this development is to provide emergency care free of charge to the community. Though there is no established national EMS system in Myanmar, public awareness on the need for emergency ambulance transport is increasing at community level. Many social-welfare societies are running their own local not-for-profit ambulance transport with their own funding in rural communities. Taking note of community awareness, the National EMS system in Myanmar will have to see cooperation between the government hospital-based ambulance system and the community-based system. Current problems are the lack of technical expertise in development of regional

system and the need for funds for the development of sophisticated emergency department and EMS system for Myanmar (Professor (Orthopedic), EMC, YGH, Yangon, personal communication, 2013). An example of patient pathway in an emergency care episode is given in Box 5.3.

Box 5.3 Emergency episode

A 39-year-old male, a taxi driver, residing in Sipaw township, Shan North, woke up in the middle of the night of 2 May 2013 with pain in his abdomen and vomiting sour fluid. He visited the general clinic opened by the Medical Superintendent of Sipaw Township Hospital about half a mile from his home by riding on motorcycle-carrier on the following morning of 3rd May. He was given an injection and three doses of medicine by the doctor. At first, the pain seemed to subside, but became worse on the 4 May with sweating. He again visited to the same doctor and was told that he had appendicitis and to go to hospital immediately.

When he arrived at the OPD, an abdominal examination was done and treatment was given. Intravenous infusion was given and he was admitted to the surgical unit.

He was operated on the morning of 5 May with spinal analgesia. The operation took half an hour, he did not suffer from any more pain after the operation, stayed in bed for the whole day of 6 May, and started to walk on 8 May. Stitches were removed on the 12 May and he was discharged from hospital.

He was satisfied with the doctors and staff of the hospital and, although an estimated 30 000 kyats was spent during his hospitalization, he was quite happy.

5.6 Pharmaceutical care

Myanmar Pharmaceutical Industry (MPI) of the Ministry of Industry (MOI) has five factories (seeTable 5.1). CMSD normally purchases pharmaceutical products and medical devices from the factories under MPI. On average, CMSD spends about 10% of total national pharmaceutical expenditure on purchases from MPI factories (Thida-Aye & Finch, 2000).

Table 5.1 Factories under Myanmar Pharmaceutical Industry, Ministry of Industry

Factory	Products	Items purchased by CMSD annually
Myanmar Pharmaceutical Factory in Yangon (MPF)	Pharmaceuticals and related products, including powders, liquids, ointments, tablets, capsules, injections and biological products, including snake antivenom and rabies vaccines (Thida-Aye & Finch, 2000)	100 pharmaceutical items
Pharmaceutical Factory, Inn Yaung, Kyaukse	Pharmaceutical items mostly injection, including Cefotaxime and Ceftriaxone injection which are not produced by MPF	15 injection items including Cefotaxime and Ceftriaxone injection
Paleik Textile Industry	Cotton wool, gauze, bandage, cloth, etc.	Many items of cotton wool, gauze, etc.
Sagaing Textile Industry	Cotton wool, gauze, bandage, cloth, etc.	Many items of cotton wool, gauze, etc.
Minsu Home Furniture Factory	Hospital equipment, instruments and devices	Many items of hospital equipment, instruments and devices

Source: Myanmar expert on pharmaceutical production (AD, CMSD, personal communication, 2013).

The medicines that cannot be acquired because of insufficient production by the MPI factories are purchased from private companies by open tendering. In 2012, some 25 companies competed for tender for medicines and medical products and in 2013 this increased to 50 companies registered with the Company Registry, Ministry of National Planning and Economic Development. Apart from government budget, United Nations agencies (mainly WHO, UNICEF and UNFPA) and INGOs supply medicines to CMSD and also support funding for their distribution. CMSD has warehouses to store the medicines and medical supplies that are procured or donated, but there is a need for more space for placing of medicines and medical products procured by increased health budget from 2012 onwards.

There are two distribution methods: personal collection and CMSD forwarding services. Personal collection is required for controlled medicines, snake antivenom and some instruments. The hospital officer

or responsible person has to collect these medicines in person and the hospital is responsible for transportation costs. CMSD forwarding services are for distribution of common medicines according to a schedule set by CMSD. CMSD calls for tenders for the transportation and contracts out to the winner to distribute medicines and equipment to all hospitals in all regions and states except Yangon. Distribution is made to all hospitals (station, township, district, region/state and specialist) from Yangon. For those townships not accessible by road, supplies are distributed via their respective Regional/State Health Department. Sixteen-bed hospitals, RHCs and Sub-RHCs are supplied according to the standard list directed from central through government budget and they have to take their quota from the respective township bearing cost for transportation themselves. Distribution of medicines is made twice yearly to the all townships on a schedule that takes note of those townships accessible in the rainy season and those accessible in the dry season. Subdepots take care of distributing to respective townships.

For the year 2012–2013, the medicines and medical supplies budget was increased 20 fold over the previous year (2011–2012), so CMSD has to procure more according to hospitals' needs, especially for emergency treatment and blood safety package.[23] Two main issues faced are inadequate professional staff for efficient pharmaceutical management and lack of storage capacity to store these purchased medicines properly before distribution. A medication procurement plan and door-to-door distribution of purchased medicines from private companies is one option for solving the problem of inadequate storage capacity. Private companies that win contracts can distribute directly to the hospitals, RHC and Sub-RHC (Assistant Director, CMSD, Yangon, personal communication, 2013).

PSI conducted a retail census in 2012 in Yangon, Mandalay, Pyinmanar, Monywar, Myitkyina, Mawlamyaing, Pathein and Myeik, identifying 3267 pharmacies (Han Win Htet, Marketing Manager, PSI, personal communication, 2013). According to FDA data, there are 10 000 drug stores and pharmacies (wholesale and retail) throughout the country and 202 drug importers/distributors registered with FDA. Not all pharmaceutical importers provide essential drugs on the essential drug list of DOH, and the majority of medicines come from China, India,

23 Blood safety package contains reagents for grouping and matching (Anti A, Anti B, Anti D), Anti Human Globulin, test kits for Hep B, Hep C, HIV, malaria, VDRL, glass tube (for blood collection), glass slides, syringe and needle, handiplast, blood giving set and blood bag.

Bangladesh and Thailand. In general, people can access pharmaceutical products through the private pharmacies if they can access and afford them.

The National Drug Law was promulgated in 1992 to ensure that medicines consumed by the community are safe, efficacious and of assured quality. The FDA, under the guidance and supervision of the Central Food and Drug Supervisory Committee, systematically ensures and monitors the availability of quality medicines. However, quality and rational use of medicines and pharmaceutical products are important areas for research and development.

5.7 Rehabilitation/intermediate care

5.7.1 Institutional rehabilitation

Myanmar has provided rehabilitation services for people with disabilities through institution-based rehabilitation since 1958. It was originally provided by the National Rehabilitation Hospital, which was handed over from the Ministry of Social Welfare to MOH in 1965. At present, there are 30 Physical Medicine and Rehabilitation departments under general hospitals with specialists providing rehabilitative services, of which Yangon General Hospital, National Rehabilitation Hospital in Yangon and Mandalay General Hospital are the main departments fully equipped with facilities for physiotherapy and also for having in-patients. In addition, there are 69 physiotherapy departments in different townships, each with physiotherapists only and not fully equipped to a total 99 all over the country.

Types of disabilities treated are hemiplegia, traumatic and nontraumatic paraplegia and quadriplegia, traumatic brain injury, post fractures and dislocations, arthritis and connective-tissue disorders(e.g. rheumatoid arthritis, osteoarthritis, gouty arthritis, ankylosing spondylitis), musculoskeletal pain in all regions of the body, rehabilitation of amputees, chest and cardiac diseases, leprosy and other skin diseases rehabilitation, rehabilitation of burns patients, rehabilitation of critically ill patients, rehabilitation of geriatric patients, and rehabilitation of paediatric patients (especially polio and cerebral palsy patients).

New institutions and departments have been established to upgrade physiotherapy education. Paramedical School, Yangon was upgraded to University of Medical Technology Yangon in 1992, and similarly in

Mandalay during the year 2000. These two universities have been producing medical technologists specialized in physiotherapy since 2000 (Associate Professor, Physiotherapy Department, YGH, personal communication, 2013).

5.7.2 Community-based rehabilitation

Introduction of community-based rehabilitation in Myanmar through a pilot study was started in 1980 and implementation initiated in 1982 with the support of the WHO. Myanmar has been one of the leaders of community-based rehabilitation in South-East Asia. The health service aims to provide a comprehensive rehabilitation service for disabled persons at grassroots level by fully utilizing community resources. The community-based rehabilitation programmes for physically disabled persons include home-based rehabilitation (such as physiotherapy exercises), formal education and nonformal education. Moreover, income-generating measures for the family, nutrition supplementation, medical treatment and necessary facilities are also provided. To improve rehabilitation services for persons with disabilities (PWDs) at community level, strengthening of community involvement and promoting inclusion of PWDs in all aspects of social life is crucial. In the rehabilitation team, a physiatrist (specialist in rehabilitation medicine) leads a team that includes physiotherapists, rehabilitation nurses, medical social workers, prosthetists and orthotists, all working together for the development of quality rehabilitation management in Myanmar.

There are three prosthetic and orthotic (P&O) clinics under MOH, which are also supported by the International Committee of Red Cross and Red Crescent Societies (ICRC): at NRH, MGH and Yay Nant Thar Leprosy Hospital in Madaya, Mandalay Region. This is an area where there is a great challenge as the human resource of P&O technicians for making prosthesis are becoming fewer and harder to replace as there was no in-country training and they were usually trained abroad (AP (Physical Medicine), personal communication, 2014). This challenge is going to be overcome by developing in-country training of P&O by DMS with assistance from Cambodia Trust, an International NGO for curriculum development and other support. Apart from the three P&O clinics, there is another clinic in Pa-an under the care of ICRC providing prosthesis services for amputees. Another is the centre for below-knee prosthesis opened by The Leprosy Mission International (TLMI) in Taungnoo and its mobile team also operates at the Leprosy Missionary Hospital in

Mawlamyaingtownship. The Ministry of Defence also has three P&O centres in Mingaladon, Pyin Oo Lwin and Aungpan townships.

For PWD to participate in sports competitions, the Myanmar Sports Federation for Disabled Persons was established and is conducting annual local sports competitions for the disabled. The International Day of Disabled Persons (3 December) has been celebrated yearly as a national-level ceremony and outstanding PWDs are honoured (Medical Superintendent, NRH, Yangon, personal communication, 2013).

5.8 Long-term care

Homes for the aged opened by the Ministry of Social Welfare are for long-term care. A total of 70 homes for the age are spread over the country covering about 2300 old persons; Hnin Si Gone Home for the Aged in Yangon is the largest institution of all. The government supports food, clothing and operational costs for running homes for the aged, but they are mainly sustained by donations from well-wishers.

Another activity is the launch the Republic of Korea–ASEAN Home Care for Older People project (Help Age Korea) with the involvement of the Department of Social Welfare, Relief and Resettlement, DOH along with YMCA and INGOs initiated in Insein and Hlinethaya townships of Yangon Region in 2004, the second phase was undertaken 2006–2009 and the third phase from 2009 to 2012 (Ministry of Social Welfare, Relief and Resettlement, unpublished information, 2013). This project focused mainly on the use of well-trained volunteers in the community and members of Myanmar Maternal and Child Welfare Association (MMCWA), MRCS and interested locals in providing care to the elderly in their homes. Aiming to raise the health and social status of the elderly is also contextually and culturally appropriate and now implemented in 154 townships.

The DOH introduced the project on health care for the elderly with WHO support in 1993. Making the care holistic and extending beyond the provision of routine basic health services, it provides promotion of healthy ageing, and prevention and early detection of chronic diseases common in older people. With this project, elderly health care is being provided to the general population through the RHCs and Sub-RHCs having one day dedicated to the elderly (Wednesday clinic). All BHS are trained to detect and manage common health problems of the elderly and

refer those with serious conditions to the nearest township hospital for advanced treatment and care. Capacity building also includes training in aspects of managing social and mental health problems of the elderly, developing counselling skills and health education to family members. Daily physical activity has been encouraged by teaching age-specific exercises to the elderly in the community. At present, the project is running in 158 townships (WHO Regional Office for South-East Asia, 2012; Project Manager, Elderly Care project, DHO, Nay Pyi Taw, personal communication,2013). Long-term care services are available but still inadequate in terms of availability (equal access to all the needy). At the implementing level, there has been a lot of collaboration between MOH and the Ministry of Social Welfare, Relief and Resettlement (MSW) as physicians from the hospitals in townships used to take care of the elderly from the homes provided by MSW. Wardens and caregivers from homes under MSW have to train in elderly care, and health professionals have to provide training for them. Apart from this, many elderly health care programmes are operated jointly by MSW and MOH.

5.9 Palliative care

In 1998, the U Hla Tun Hospice (Cancer) Foundation was founded in memory of U Hla Tun's only daughter who passed away with leukaemia in the United Kingdom. In 2000, Yangon Hospice 40-bed inpatient centre was successfully opened and Mandalay Hospice (a replica of Yangon) 40-bed inpatient centre was opened in 2003. The Myanmar Humanitarian Hospice was established with the purpose to serve humankind, catering for the poorest of the poor. Medical care has been provided by five retired oncologists and seven retired physicians both in Yangon and Mandalay make regular visits to the Centre. The centres are staffed by 3 matrons and 19 nurses.

Admission criteria have been set as: having a hospital discharge certificate; status as terminally ill; poorest of the poor with no home or family; free from any infectious diseases; with no discrimination on basis of race, religion or creed. Special features of the Myanmar Humanitarian Hospice are its focus on provision of quality of life at the terminal stage, effective symptom control in advanced cancer, appropriate therapy and pain control. There are Buddhist Prayer Rooms as well as Christian Chapels, and an electronic system is provided in all wards for listening to religious tapes. Religious pilgrim trips have been arranged for patients to several famous pagodas, Buddhist prayer meetings are held frequently

with reverend monks, offering food to monks, and also patient's last wishes are being granted. Apart from this, music therapy is also used at the centre with an entertainment programme by famous actors and vocalists. This lifts the patients' and staff morale (U Hla Tun Hospice Foundation, 2013).

5.10 Mental health care

In the past, mental health care in Myanmar was practised in hospitals based solely on the 1200-bed Mental Hospital in Yangon and 50-bed psychiatric unit in Mandalay. In 1990, mental health care began to be included in the NHP. The mental health policy was incorporated with the general health policy document and the last version of the mental health plan was revised in 2006. A disaster preparedness plan for mental health also exists and was last revised in 2006. Mental health legislation was enacted in 1912 and is currently under review and revision.

In 1990, the mental health project sponsored by WHO under the guidance of MOH was launched. Since then, community-based mental health care has been practised aiming to identify and care for people suffering from common mental disorders in the community. Integration of mental health care services into the pre-existing PHC delivery system is the main strategy for developing community-based mental health service. BHS have been trained to detect and manage mental health problems in the community so as to be able to provide a basic minimum level of mental health care in their routine PHC services. To date, this project has trained a total of 4760 people on mental health care including health staff, school teachers and local NGOs. In addition, 190 people received training on harmful use of alcohol. Before 2006, only three mental illnesses – psychosis, epilepsy and intellectual disability – were included in the PHC delivery system. The list was expanded to six, adding depression, anxiety disorders and alcohol dependence, after 2006. Following the 2008 Cyclone Nargis, training on psychosocial care after disaster were given to 2000 medical officers and BHS. Post disaster mental health teams were formed and sent to the disaster area to treat victims.

Recently, the Mental Hospital in Mandalay was upgraded and both Yangon and Mandalay Psychiatry hospitals become tertiary-level teaching hospitals for mental health problems. Both outpatient and inpatient services are provided mainly focused on curative aspects of mental health. Since 1992, mental health units attached to the general hospitals

have opened in all region- and state-level hospitals catering for both outpatient and inpatient services.

Despite efforts to integrate mental health in the general health services and the development of community-based programmes, the mental health treatment gap is still widening (to nearly 90%) due to various factors like stigmatization of the disease, lack of mental health knowledge and unavailability of psychiatric drugs at the primary care level. Psychotropic drugs are available at the mental hospitals and psychiatric departments where psychiatrists are posted and in a few townships, but are not available at primary care level. Outreach mental health clinics are available in Kyauktan, Hlegu and Nyaungdone townships and capacity building of the medical officers and BHS are conducted in three regions so as to narrow the mental health gap. Similar clinics will be opened in other areas in a phased manner. Back-to-back referral system between primary, secondary and tertiary centres will be put in place and a helpline will be established at the tertiary centre.

Although deinstitutionalization was tried, about 60% of the inpatient beds in mental hospitals are still occupied by chronic patients. Psychosocial rehabilitation treatment programmes for chronic patients are weak and there are no properly supervised home-care services for chronic patients.

The mental health hospital is being restructured, including establishing psychosocial rehabilitation services, to achieve comprehensive care of mentally ill patients.

Regarding the harmful use of alcohol, MOH recently conducted a national workshop on policy and interventions to reduce harm from alcohol use, and a multisectoral collaborative effort to reduce harm from alcohol is being implemented according to the recommendations of the workshop. Myanmar is now working closely with other ASEAN countries through the establishment of mental health network as a member of the ASEAN mental health task force and Mekong mental health partnership. For drug-abuse control, there is a total of 26 major drug treatment centres (DTCs), 40 minor DTCs and 3 youth correction centres throughout the country providing case detection, treatment and after care, health education on substance abuse to all levels of the population, case follow-up and management, training of health personnel in drug abuse, and registration of drug addicts. Apart from these, research on drug abuse and harm reduction has been carried out. A methadone maintenance

therapy (MMT) programme was launched in February 2006 in four major DTCs and has been expanded to eight treatment sites (Retired Project Manager, Mental Health, personal communication, 2013).

5.11 Dental care

Oral health conditions in Myanmar have gradually improved since the 1970s. However, dental caries are still a problem in preschool children and periodontal disease is still a problem in adults and the old aged (Myanmar Dental Association & Pathfinder, unpublished information, 2007).

Dental health services are provided by both the public and private sectors, but dental surgeons are more in the private sector than the public sector. The public sector consists of dental surgeons working in hospitals, school health teams and at the two dental universities. In 2012, there were about 379 dental surgeons posted in public hospitals. These included senior consultant dental surgeons, junior consultant dental surgeons who are specialists and dental surgeons (who are the same rank as medical officers). Services such as dental check-ups, tooth extraction, and dressing of carious teeth are available in public facilities. Minor oral surgery, fixed or removable prosthesis are available at the district, state and region levels with some contribution fees. Dental surgeons in school health teams provide free dental check-ups, dental health education, tooth extraction (of deciduous teeth), sedative dressing and atraumatic restorative technique with glass ionomer cements for appropriate cases.

The oral health unit of the DOH is responsible for the coordination of oral health activities in the country. The Primary Oral Health Care (POHC) project is included in the Community Health Care Programme and was initiated in 1991 with support from WHO. Up to 2012, some 120 townships had been covered by this project and five main POHC tasks are performed by the trained basic health workers – oral health screening, basic and emergency care, referral and feedback referral forms, health education and after-lunch tooth-brushing drills in primary schools. Emphasis is placed on prevention, and free distribution of educational pamphlets and booklets to schools was done as part of the preventive programme. Water fluoridation is not available, but fissure sealants and fluoride tablets are used (mostly in the private sector).

Instead of a national-level oral health survey, regional oral health surveys are conducted annually in selected regions. Furthermore, with

the permission of MOH, MDA in collaboration with Asia Oral Health Promotion Fund (Japan) conducted the Pathfinder Oral Health Survey during 2006–2007 in Yangon, Mandalay, Magwe, Taunggyi, Pa-an and Mawlamyaing townships to obtain oral health data representative of the delta, central, hilly regions and coastal areas. The survey report showed that decayed missing and filled teeth affected 0.8% of 12-year olds, 2.94% of 35–44-year olds and 6.94% of 65–74-year olds. Periodontal disease was also common, and bleeding and calculus scores were high (>80%) in adolescent groups. Among 65–74-year olds, shallow periodontal pockets[24] were found in 20.4% of the study group and deep periodontal pockets in 10.4% of the participants (MDA & Pathfinder, 2007).

Dental treatment is available for free at the OPDs of Yangon and Mandalay dental universities, and at the various specialty departments as part of the training programme for dental students. For dentures, a minimal contribution has to be paid by the patients.

Private dental clinics are mainly in the big cities and towns, and a patient has to pay user charges as out-of-pocket (OOP) expense. Mobile dental teams of the Myanmar Dental Council and MDA provide free dental treatment to people in remote and hard-to-reach areas. At the same time, they provide dental health education talks, toothbrushes and free toothpaste donated by private companies (Retired Rector, University of Dentistry, Yangon, personal communication, 2013). A dental health education programme, including promotion of tooth-brushing, is provided to school students by school health teams consisting of medical officer, dental surgeon, dental nurse, trained nurse and a compounder. People in rural and remote areas are able to access dental services provided by health assistants at RHCs. Locally produced fluoride toothpastes are available everywhere at prices affordable to most people, including those in low socioeconomic strata.

5.12 Complementary and alternative medicine

For traditional medicine, there are three 100-bed, six 50-bed and seven 16-bed traditional medicine hospitals, and 49 district and 194 township traditional medicine clinics providing services in the country. In addition, private traditional medicine practitioners also provide health care.

24 A pocket is a pathologically deepened gingival sulcus (a gap between gum and tooth).

The Department of Traditional Medicine (DTM) has established a series of nine herbal gardens in the country covering a total of over 124 hectares. The National Herbal Park, established in 2006, is one of the biggest department-owned herbal gardens, having area of 79.5 ha and is located at the centre of Nay Pyi Taw. Aiming to enable people to observe available resources of traditional herbal plants of Myanmar at a single place and to conserve the endangered species of medicinal plants, it has more than 900 species of medicinal plant. MOH works with Nay Pyi Taw Council, the Ministry of Agriculture and Irrigation and Ministry of Environmental Conservation and Forestry to establish nurseries of medicinal plants which are traditionally used for six major diseases – diabetes, hypertension, TB, malaria, diarrhoea and dysentery.

Traditional medicines are manufactured by both public and private sectors. DTM takes responsibility for public-sector manufacturing in two department-owned factories, in Yangon and Mandalay. Each factory produces over 15 000 kg of medicines yearly according to the standard national formulary. In addition, these factories also manufacture 21 traditional medicines in powder form, which are given free of charge to patients through public traditional medicine hospitals and clinics. The factories also produce 10 kinds of drugs in tablet form for commercial purposes.

The private traditional medicine industry is also developing and conducting mass production of potent traditional medicines according to good manufacturing practice (GMP) standards. There are more than 2500 registered private traditional medicine drug producers and about 15 traditional medicine factories in Myanmar, but only two factories work to GMP standard – Fame and U Thar Yin traditional medicine factories.

Scientific research projects such as botanical, chemical, pharmaceutical, pharmacological and clinical investigations are conducted on traditional herbal drugs. And there is a quality control system for department-owned traditional medicine factories and a post market drug survey of all traditional medicine drugs around the country is ongoing. As for the therapeutic efficacy of traditional medicine drugs, DMRs (Lower and Upper Myanmar) conduct research on safety and efficaciousness of these medicines and many have proved to be able to treat malaria, hypertension, diabetes, diarrhoea

and dysentery. Research papers are presented at the Myanmar Health Research Congress and also at the annual Traditional Medicine Conference.

"The traditional medicine kit for emergency use" project was launched in August 2007 as a pilot project in Nay Pyi Taw. A total of 150 kits were distributed to 44 villages in Nay Pyi Taw with a quota of one kit per 50 households. Kit holders selected from the villages were middle-aged middle-school graduates, preferably recommended by villagers, religious person, monk or school teacher and were given training on the use of medicines in the box for minor ailments. Seven standardized Myanmar traditional medicine drugs with cotton wool, spirit, bandage, plaster, thermometer, pamphlet, guidance manual and stickers on traditional medicine are put in the kit. Delivery is according to a distribution plan and kits are usually reordered when their supplies are low but not completely used up. The cost of each kit is about 10 000 kyats, medicine has to be provided free to the villagers and replenishment for sustainability is by village authority, NGOs and well-wishers of the village. The price has been made reasonable for medicines produced by department-owned factories. Regular supervision on the use of the kit is made by the traditional medicine practitioner of the respective township traditional medicine clinic. The initial investment of the cost of traditional medicine kits was financed by MOH and donations of well-wishers. With humanitarian assistance from Nippon Foundation, the traditional medicine kit distribution project is being expanded (since 2009).This project aims to distribute kits to every region and state. A total 15 156 kits had been distributed by March 2013 (Director, DTM, Nay Pyi Taw, personal communication, 2013).

5.13 Health services for specific populations

Jivitadana Sangha[25] Hospital in Yangon is the oldest hospital for monks and nuns. It has 150 beds, providing health services especially for monks and nuns, but also for the general public. It provides both OPD and inpatient care with specialists. Others are Sidagu Ayudana hospital (100 beds) and Wachet Jivitadana *Sangha* hospital (25 beds) situated in Sagaing, meant for monks and nuns but also for locals staying in the community especially poor people. Usually all township hospitals in the whole country have a separate *Sangha* ward for monks.

25 *Sangha* means monks.

For prisoners, the Ministry of Home Affairs operates two 50-bed hospitals – one in Insein, Yangon and one in Mandalay. For other prisons, medical care of prisoners has to be covered by the respective regions/state, district or township hospital.

For delivering services in conflict areas where there are tensions between government and local populations, the MOH works in collaboration with United Nations agencies, INGOs, local NGOs and associations. Routine services have been intensified in some areas and emphasis has been placed on emergency medical care, disease surveillance, prevention and control of CDs and health education, thus at this point no serious disease outbreak has yet been reported.

6 Principal health reforms

Chapter summary

Expansion of the health system, with the networks of public hospitals, rural and urban health centres, and sub-rural health centres, was most vibrant between the 1970s and 1990s. The health system can also be judged by its success stories: eradication of smallpox, elimination of leprosy, trachoma, poliomyelitis and iodine-deficiency disorders. The first in the series of reforms implemented since the 1990s was on improved access to essential medicines and the introduction of different financing mechanisms to recover and replenish the costs. Reforms in other health-financing mechanisms were added (e.g. Revolving Drug Fund, hospital trust funds, community cost sharing including exemption for the poor, and community donations) in all public hospitals. Some of these financing mechanisms continue today. Initially, these mechanisms aimed at ensuring continuous replenishment of essential medicines by mobilizing resources from households and communities in the face of insufficient government funding. Later the mechanisms were extended by introducing exemption for the poor and supporting them through other mechanisms like trust funds, to offer protection from financial risk. However, these interventions are not able to raise sufficient revenues to replenish the medicines, or to reduce the out-of-pocket expenses and financial burden of the poor. The work of the RHCs since the early 1970s has been focused on externally assisted programmes, concentrated in selected townships and only for specific programme priorities, such as tuberculosis, malaria and HIV, and reproductive health. Thus, those townships without any donor-supported programmes had to concentrate on their routine activities with little technical, financial or material support. With the low salary paid to health workers, the staff in these areas became off-hour private practitioners. Major improvements in the health status of the population are crucial for inclusive growth. Public budget allocation for health has increased considerably in the last few years. However, no relevant data are available on how much of this increase has resulted in significant improvement in equity and access to health services. Donor-coordination and fund-support mechanisms have evolved into integrated programme management with the principle of

Oneness in line with the Paris Declaration on Aid Effectiveness, but more effort is needed. The challenges of Myanmar are to overcome the limitations of the past (e.g. low investment in rural health services), inadequate funding for expansion of universal health coverage, and possible use for health of the funds generated from revenue on extracting natural resources. New opportunities should also be explored for filling the fiscal spaces in the national budget, and for increasing investment in rural health facilities.

6.1 Analysis of recent reforms

Since the 1950s, the health system of Myanmar has expanded, creating networks of public hospitals, rural and urban health centres, and sub-rural health centres throughout the country. Most of this growth occurred between the 1970s and 1990s, when Myanmar adopted the principles and strategies of Health for All (HFA) and primary health care (PHC), following the Alma Ata Declaration. This community-based policy had a great impact on health development, especially in the prevention and control of major communicable diseases, and reducing child and maternal mortality. Health development in Myanmar could also be judged from its success stories, such as eradication of smallpox, elimination of leprosy, trachoma, poliomyelitis, and iodine-deficiency disorders (Ko-Ko, Thaung & Soe-Aung, 2002). Myanmar received international recognition for its achievement in health development during the 1980s and 1990s. For example, the Ayadaw Township People's Health Plan Committee received the Sasakawa Health Prize at the 39th World Health Assembly in May 1986 (Tin-U et al., 1988). The Township Committee executed a successful health development programme using HFA and PHC, with the aim of total socioeconomic development in Ayadaw, within a short period. The township has maintained its momentum of health and development (Than-Sein, 2012). The Department of Health (DOH) received the International LIGURIA Prize for technology development in health and nutrition for the Joint Nutrition Support Programme (JNSP) of the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) in 1991 (WHO, 1992). The JNSP in Myanmar demonstrated that, despite lack of resources, improvement in child health and nutrition through PHC could be brought about for a large population over a short period of time and at low cost per capita.

A few of health reforms started in the 1980s and 1990s, during the period of the State Law and Order Restoration Council (SLORC) and State Peace and Development Council (SPDC) (see section 2.1), had great impact on health status, access to services and widening health inequity. Box 6.1 provides brief descriptions of the major health-sector reforms from 1988 to 2012.

Box 6.1 Major reforms in health sector in Myanmar, 1988–2012

Government	Major reform in health sector	Brief description and outcome of reforms by time period
SLOC and SPDC (1988–2011)	Introduced various health financing schemes, health legislation, and upgraded and expanded public hospitals; expanded private health system	1989: Launch of Myanmar Essential Drug Project (MEDP) to estimate drug requirement by each township based on health care needs, and to promote rational use of drugs, using the list of essential medicines 1993–1994: Introduced the concept of alternative health financing, and encouraged a greater role for the private sector and NGOs. Various health financing mechanisms (e.g. Revolving Drug Fund, hospital trust funds, Community Cost Sharing with exemption for the poor, and community donations) were developed in all public hospitals, initially aimed to ensure replenishment of essential medicines by mobilizing resources from households and communities in the light of insufficient government funding. Later the mechanism was extended by introducing exemption for the poor and using other mechanisms (e.g. trust funds for poor patients) to offer protection from financial burden faced by the poor. However, these interventions were not able to raise sufficient revenues to replenish the medicines, or to reduce the OOP expenses, and financial burden on the poor. 1989–2007: Adoption of a series of legislation related to health: (1) Dental and Oral Medicine Council Law (1989); (2) Myanmar Maternal and Child Welfare Law (1990); (3) Law relating to Nurse and Midwife (1990); (4) National Drug Law (1992); (5) Law relating to Control of Narcotics and Psychotropic Drugs (1993); (6) Law on prevention and control of communicable diseases (1995); (7) Traditional Medicine Act (1996); (8) Eye Donation Law (1996); (9) National Food and Drug Law (1997); (10) Myanmar Medical Council Act (2000); (11) Traditional Medicine Council Act (2000); (12) Blood and Blood Products Act (2003); (13) Body and Organ Donation Act (2004); (14) Law relating to control of consumption for Tobacco and tobacco products (2006); and (15) Private Health Care Services Law (2007). 1992: Establishment of health care facilities in border areas, and introducing incentives to work at expanded health services in the border areas. 1994–1995: Establishment of 10 new universities for graduate and postgraduate training for Medicine, Community Health, Nursing, Paramedical Sciences. 1995–2010: Expansion and upgrade of public hospitals (secondary and tertiary hospitals). 1990–2012: Expansion of private hospitals (to over 160) and clinics (to over 4600).
Government of the Republic of the Union of Myanmar (elected in November 2010 and formally took office in March 2011)	Reforms in health sector envisaged, but not yet implemented	2011: In his augural address to the Union Parliament in March 2011, President U Thein Sein indicated that the people would have to work harder than ever and the government would make amendments to financial and tax policies as necessary for the evolution of the market economy and improvement of the socioeconomic status of the people. The Parliament in turn needed to adopt various laws, e.g. legislation related to public health care and social security, and that related to promoting education and health standards. 2011: National Health Plan for 2011–2016 adopted. 2012: Social Security Act adopted, covering private-sector workers' pension and unemployment benefits scheme; social health insurance; maternity and sick leave; and compensation for ill-health, disability and death.

Source: Asia Pacific Observatory on Health Systems and Policies

The reforms might look like usual developmental work in the health sector and no major evaluation or impact study has been carried out so far specifically linked to these reforms. However, anecdotal evidence from various sources indicates the impacts of health system performance and health inequity. The following paragraphs discuss a few of these reforms, the experiences of which should provide policy-makers with lessons for present and future improvement of the health system.

6.1.1 Provision of essential medicines and use of different financing mechanisms

One of the reforms was on the provision of essential medicines and use of different financing mechanisms to recover and replenish the costs (see details on provision of medicines in section 5.6, and on health financing in section 3.2).

During the expansion phase of the National Health Plans (NHPs) in the 1970s and 1980s, it was found that the continuous supply of quality essential medicines and promotion of their rational use were essential ingredients for the provision of quality PHC to the population, the majority of which (→75%) lived in rural areas. This coincided with the global movement and advocation of the eight elements of PHC and HFA, in line with the 1977 World Health Organization (WHO) Goal of HFA by 2000 and the 1978 Alma Ata Declaration. With that background, MOH launched the national Myanmar Essential Drugs Project (MEDP) in 1989, with the technical and financial assistance of WHO and Finnish International Development Agency (FINNIDA).

The SLORC/SPDC government supported access to medicines by promulgating the National Drug Law in 1992, followed by the National Food and Drug Law in 1997. These policies have continued to be implemented: registration of imported medicines, issuance of the list of essential medicines for Myanmar (sixth edition in 2010), training government and private health workers on rational use of drugs, establishment of the Food and Drug Administration (FDA) Division within MOH (1994), and strengthening the FDA with more staff and facilities. However, there are a few major impediments to the availability and effective use of essential medicines: (1) limitation of availability, procurement and distribution of essential medicines at the most distant health care facilities; (2) emergence of fake/counterfeit and low-quality medicines and increasing prices; and (3) the different financing mechanisms for the purchase of these medicines by the consumers.

Provision of essential medicines for treating all ailments at the first point of contact of the patients with the basic health care facility is one of the most important steps in moving closer to universal health coverage. Myanmar had a single State-owned pharmaceutical industry (Myanmar Pharmaceutical Industry, MPI) responsible for the importation and production of medicines until 1992, and its production was able to meet the full national requirement for a few, but not for whole list of essential medicines. The Central Medical Store Depot (CMSD), which is the main procurement and distribution facility of MOH, bought almost 80% of its annual requirement from MPI before 2000. The supply of medicines for prevention and control of major communicable diseases, such as leprosy, malaria, tuberculosis and HIV/AIDS, has to be provided completely by purchasing from abroad with the funding of external donors. Basic packages of essential medicines to be used by the health centres and community-based volunteer health workers (enough for a year for simple ailments) were supplied through funding from United Nations Children's Fund (UNICEF), WHO and United States Agency for International Development (USAID) during the 1970s and 1980s. As soon as donor funding ceased for various reasons (including sanctions) in the late 1980s, these PHC units and health volunteers, which used to receive regular supply of medicines, faced major problems, and had to ask patients to purchase their own medicines. The patients and their families have to spend about 54% of their out-of-pocket (OOP) expenditure on medical goods alone (see section 7.2.1 and Table 7.1).

Under the national MEDP launched in 1989, MOH had attempted to estimate the annual requirement of essential medicines based on the actual health needs and standard treatment regimens. The required medicines for the pilot townships were procured through importation and financed by WHO and FINNIDA in the early years, since MPI could not assure regularity of supply, availability of all required items, quality and quantity, etc. For the period of the WHO project, the Revolving Drug Fund (RDF) mechanism was introduced for all health care institutions in pilot townships, whereby the costs of the certain prescribed medicines were collected from patients. Patients and their families initially accepted the idea of paying for the medicines, which they had otherwise to procure from outside markets, paying higher prices with no assurance of quality. The MEDP had also assured the continuous supply of basic essential medicines, till WHO support stopped in 1994. From 1994 to 2001, the Project continued with Nippon Foundation support, supplemented later with support from UNICEF, introducing various community cost sharing

(CCS) mechanisms in at least 132 townships. Initial budget for purchase of medicines was subsidized by UNICEF and Nippon Foundation, and the cost of medicines supplied (including mark-up price of 15–20% of original UNICEF–CMSD prices) were recovered and put into a central RDF.

The concept of alternative health financing was introduced in all public hospitals from the mid-1990s, encouraging a greater role for the private sector and NGOs (e.g. RDF, hospital trust funds, CCS with exemption for the poor, and community donations); some of these mechanisms continue to date. Initially these mechanisms aimed to ensure replenishment of essential medicines by mobilizing resources from households and communities in the light of insufficient government funding. Later the mechanism was extended by introducing exemption for the poor and using other mechanisms, like trust funds for poor patients, to offer protection from financial burden. However, these interventions are not able to raise sufficient revenue to replenish the medicines, or to reduce the OOP expenses, and financial burden on the poor. The issues found were:

- Lack of clear policy, guidelines and procedures for operating RDFs and CCS, as the key cost-recovery mechanisms;
- Lack of well-designed exemption mechanism;
- Irrational prescribing practices, especially at secondary and tertiary hospitals;
- Absence of meaningful public subsidies at the lower levels of the health system to support exemptions;
- Lack of a unified coordinating mechanism within DOH to formalize and coordinate the various RDFs and CCS;
- Lack of coordination among donors supporting/implementing CCS-based projects and activities;
- The understanding and involvement of community, and local leaders (Narula, unpublished information, 1998).

The issue of counterfeit, fake and spurious drugs has come up as major issue in Myanmar since the mid-1990s. A variety of issues led to this situation, including the existence of multiple drug importers and wholesale distributors, erratic supply from official importers from public agencies and private businesses, thousands of private local drug outlets, irrational use by health professionals, and an overburdened FDA with over a thousand products being registered every year. A WHO study on the counterfeit and substandard drugs in Myanmar in 1999 indicated that over 20 privately owned local pharmaceutical industries had been manufacturing medicines

within Myanmar without proper licence, not complying WHO good manufacturing practice (GMP) requirements, using workers without proper technical training, and without appropriate quality control (Wondemagegnehu, 1999). In addition, many counterfeit drugs were imported through cross-border trade from neighbouring countries (via land and sea routes). In the same study, it was found that at least 50% of the drugs seen in the markets, including those domestically produced, were not registered by the national FDA at the time of the study. Some 5–16% of the samples either contained substandard, low-quantity active ingredients or failed laboratory tests (not containing the stated ingredients) – this applied mainly to antibiotics. While the local community had to pay higher prices for the purchase of essential medicines, the fake and counterfeit drugs made them sicker and poorer.

6.1.2 Expansion of hospitals and bed provision

The second major reform in the health system was the allocation of public funds for the expansion of hospital infrastructure, at the expense of the limited expansion of health care facilities in rural areas. (The inadequate investment on rural health care facilities including staff is described in detail in Chapters 4 and 7.) While the proportionate number of hospital beds to the total population on average at national level may be low compared to other Association of Southeast Asian Nations (ASEAN) countries, the analysis of hospital returns on the investment showed that about 60% of the hospitals (covering the whole range of hospitals, but with 90% of them being township and station hospitals) were underperforming in terms of bed occupancy and average turnover of patient per bed (see section 7.5.2, Fig. 7.3 and Box 7.3).

The work of the rural health centres (RHCs) since the mid-1980s has been focused on programmes supported by external donors. These donor-supported programmes concentrated on selected townships and specific programme priorities. Thus, those townships without any national donor-supported programme being implemented in their area had to carry out their routine work with little technical, financial and material support. With the low salary paid to health workers, the staff in these areas became private practitioners. These staff had to take more time for private health care, charging for almost every service they delivered in public facilities. With the new government in 2011, investment in rural health services was improved, with increased budget to be used for building RHCs and sub-rural health centres (Sub-

RHCs), and for purchase of basic drugs for these centres. Tenders for purchase of medicines for health centres were devolved to the regional health departments. Private investors are yearning for this lucrative market of hundreds of millions of dollars worth of tenders. Analysis of this experience of purchasing mechanisms and of the utilization of medicines by the health care facilities in late 2013–early 2014 will help in future policy development. Many long-term vacant posts for rural health assistants, lady health visitors (LHVs) and midwives, have been filled.

Private health care providers have been mushrooming in recent decades. As a result of limited sanctioned posts by MOH, newly graduated medical, nursing and midwifery, and other health professionals resort to private practices. There are over 40 private hospitals and thousands of private health clinics in Yangon city, at least five private hospitals in the capital, Nay Pyi Taw, and thousands of such private health care institutions in the big cities (regional capitals and other cities), and even in rural villages. Myanmar amended the national laws relating to private health care, including private dental and oral health clinics and hospitals, in 2007. The law is supposed to control the quality of health care, including patient safety, and it also has provisions for control of physical location and zoning for establishing big hospitals with speciality services. No private hospital has employed full-time specialists (native or foreign).

With the establishment of peace agreements with some ethnic groups in north-eastern border areas around 1992, the government started to open new health care facilities and post staff in these areas where civil conflicts have made provision of basic social and health development services difficult for four or five decades. An incentive policy had been introduced by the socialist government in 1974 that all government staff who were assigned in these areas (about 70 townships) had been given double salary (routine salary plus living allowance equivalent to their salary) and also the promise of transfer to areas of their choice by end of one year of service. This policy aimed to legitimize the existence of the central government, by showing responsiveness to these difficult areas where the majority of the ethnic-minority populations live. Another policy in those days was to recruit secondary school students for professional and paramedic training from these areas without the application of conventional criteria such as high marks or selection exams. In this way, more doctors, nurses and midwives returned back to serve their home towns. The approach was reintroduced in 2013, but since there are more border-area townships (now about 110) there is room for further

improvement such as ensuring retention of health workforce, adequate supplies and basic equipment, and improved responsiveness of service provision especially in terms of language and cultural barriers.

During the 1990s, the government established 12 new universities for graduate and postgraduate medical doctors, graduate and postgraduate nurses, and similar degree courses for paramedical technicians, health assistants, etc., and the production of the graduates and postgraduates increased 2–3 fold over the decade. During the same period, the number of training schools for LHV (1) and midwives (about 30) remained the same. While regular 3-year 9-month training for diploma nurses was continued, the universities of nursing (2 in Myanmar now) delivered a four-year Bachelor degree course. Since 2000, the regular annual course for post-basic nursing diploma (training for speciality services for emergency cardiac, obstetrics, eye, ear, nose and throat, orthopaedics, etc.) was stopped. Many professionals graduated, but were not employed by the government. For example, in 2012, there were over 28 000 registered medical doctors, of which about 12 000 were employed by public agencies (MOH, 2013). Some of the remaining medical doctors out-migrate to practise abroad (both within and outside of Asia), and some remained as private practitioners within Myanmar. A similar situation exists in other health and paramedical professions. More than 1000 pharmacists were produced in 2010 from the two universities of pharmacy, but many public hospitals and even at the CMSD do not have enough pharmacists (Holloway, 2011).

6.1.3 Fungibility for government programmes supported through foreign aid

Issue of fungibility occurs when public resources for health are being diverted into other priority programmes, or possible use of public funds in case foreign aid stops for various reasons. Immunization of infants and young children to protect them from the major communicable diseases has been the national priority of all governments. In Myanmar, successive governments have implemented the national expanded programme of immunization (EPI) since 1985, and the funding for vaccines has relied on external funding. With the help of external agencies like WHO, UNICEF, JICA, Rotary International, the Global Alliance for Vaccine Initiative (GAVI), and Center for Disease Control (CDC, USA), the national EPI was able to achieve elimination of poliomyelitis by 2003, and prevent cross-border transmission and re-emergence of new polio cases within the country to

date. Similarly, elimination of certain communicable diseases like leprosy and trachoma has been achieved, with the larger donors' aid. To date, the government still uses foreign aid to maintain high coverage of vaccination or to have multidrug treatment for sustaining the disease-free status.

In the early 2000s, the government introduced a national effort for the local production of serum-based hepatitis B vaccine (HbV) as a local initiative, later producing the recombinant HbV with support from the Republic of Korea, with the aim of supporting the EPI. However, the locally produced vaccines have not been used in the EPI, so HbV needed was imported with support from GAVI. With the changes in the global policy on immunizing infants using multivalent vaccines (combination vaccines for multiple diseases in a single dose) and putting more pressure on collaborating governments to greater commitment in purchasing vaccines with their own funds in future years, Myanmar agreed with GAVI Alliance to have a new programme of support for introducing pentavalent vaccine (diphtheria, tetanus, pertussis, HbV and Haemophilus influenzae type B) and for the purchase of other vaccines (polio, measles, BCG, etc.), aiming to achieve a high coverage above 90%. Myanmar agreed to cofinance the pentavalent vaccine at the cost of US$ 0.20 a dose (about US$ 1 million total), with progressive increase in the proportion of this contribution in each year as per the Multi-Year Immunization Plan, 2012–2016 (MOH, 2011c).

In 2005, in order to support the national efforts to achieve the Millennium Development Goals (MDGs) and also with backstopping from the Global Fund for HIV/AIDS, TB and Malaria (GFATM), the external donors (in Myanmar) jointly agreed to cofinance the fund for control of HIV/AIDS, TB and malaria, under a new single-pooled financing mechanism, called the Three Diseases Fund (3DF) Program (3DF, unpublished information, 2006). The effectiveness of 3DF contributed significantly to the case for the return of the Global Fund (formerly known as GFATM) in January 2011, with accelerated support through its Round 9 Program (3DF, 2011). The consortium of seven development partners agreed with the Government of Myanmar to establish a new fund for health programmes addressing the MDGs, called the Three Millennium Development Goal (3MDG) Fund (3MDG Fund, 2012). The management of the 3MDG Fund of US$ 250–300 million would take steps to further strengthen adherence to the principles of Paris Declaration, i.e. country ownership, alignment and mutual accountability (3DF, 2013).

In addition to the 3MDG Fund, many other international nongovernmental organizations (INGOs, e.g. PATH, MSI, Save the Children, World Vision, Oxfam, Medecins Sans Frontieres, AMDA, ADRA, CARE International, Burnet Institute, Merlyn, Malteser) are working separately to finance specific health-development programmes that fall within their expertise. The majority of these INGOs came into Myanmar as part of their collaborative efforts for relief and rehabilitation of Cyclone Nargis in 2008. There are over 60 registered INGOs, 82 local NGOs and 455 community-based organizations actively working in the health sector, and the majority of local NGOs and community-based social groups are implementing partners for donor-supported projects. Some estimates indicate that there may be over 2000 local community-based social organizations, registered and unregistered (Saha, 2011). In 2011, through its bilateral aid programme, India supported a professional exchange programme and building health infrastructure along the border areas between India and Myanmar. China's bilateral aid programme does not yet address health development efforts. JICA's support to Myanmar since the early 1990s has been in the area of humanitarian assistance. Only in the last few years has JICA's assistance in the health sector, especially in human resources and facility development, been expanding (Than-Sein, personal communication,2011). The United States supported the health sector since the early 2000s through Centers for Disease Control and Prevention (CDC) and many other INGOs based in the United States. While USAID started negotiating its joint collaborative programme for the health sector, United States business companies are coming in to assist the health sector as part of their corporate social responsibility. In the light of the mushrooming of INGO, NGO and many other non-state actors in the health sector in Myanmar, there is an urgent need for the government to ensure that all their contributions are in line with the national priorities, responsive to the health needs of the people, and consider programmatic and financial sustainability when donor funds end.

6.1.4 Adoption of legislation related to the health sector

As part of its efforts for restoration of law and order, the SLORC/SPDC government promulgated a series of laws related to the health sector, numerically more than those adopted during all previous governments after independence. Some of them were updated and revised after a few years. All of them are under review by the Union Parliament, with a view to amending them in line with the 2008 Constitution and socioeconomic and political changes. These laws were adopted between 1988 and

2013 and relate to protecting and promoting health or preventing health hazards, to set standards, quality and safety of care, and to maintain and control standard of health professionals.

- Dental and Oral Medicine Council Law (1989) (revised in 2011), regulating professionals and their practice of dental and oral medicine, including duties and responsibility of the executive members of the Dental and Oral Medicine Council.
- Myanmar Maternal and Child Welfare Law (1990) (revised in 2010), for establishment of the Myanmar Maternal and Child Welfare Association (MMCWA), as a non-profit-making, nongovernmental organization, covering the objectives, structure, membership and formation of MMCWA, and the duties and powers of central council and executive committee.
- Law relating to Nurse and Midwife (1990) (revised in 2002), regulating the professional practice of nursing and midwifery personnel, including duties and responsibility of Myanmar Nurse and Midwife Council.
- National Drug Law (1992), enacted to ensure access to safe and efficacious drugs (medicines) through control of manufacturing, storage, distribution and sale, and establishment of Myanmar (National) Food and Drug Authority, and promoting rational use of medicines.
- Law relating to Control of Narcotics and Psychotropic Substances (1993), covers control of dangerous-drug and dangerous-substance abusers, establishment of Central Committee for Drug Abuse Control (CCDAC) and regional committees, and regulations related to registration, deregistration and medication of drug users.
- Law on Prevention and Control of Communicable Diseases (1995) (revised in 2011), covers the functions and responsibilities of health personnel and general citizens in relation to prevention and control of communicable diseases, reporting and control of outbreaks, and penalties for those failing to comply.
- Traditional Medicine Act (1996), covers labelling, licensing and advertising of traditional medicine, regulating for registration and control of traditional medicine under the National Food and Drug Authority.
- Eye Donation Law (1996) (revised in 2013), enacted to support corneal transplantation, measures to be taken on eye donation and transplantation, and establishment of National Eye Bank and its management committee.

- National Food Law (1997), enacted to protect people from consuming food that may cause danger or be injurious to health, by controlling food production, import, export, storage, distribution and sale, adding the functions and responsibilities of food control to the National Food and Drug Authority.
- Myanmar Medical Council Law (2000), enacted to regulate and control the professional practice of medicine, registration of national and foreign medical practitioners including specialists, and defining the duties and power of Myanmar Medical Council.
- Traditional Medicine Council Law (2000), enacted to regulate and control the professional practice of Myanmar traditional medicine, defining steps for registration of traditional-medicine practitioners, and the duties and power of the Traditional Medicine Council.
- Blood and Blood Products Law (2003), covers instituting measures for safe blood and blood products, including those measures to be undertaken in the process of collecting and administering blood and blood products, establishing the national blood bank, local blood banks and subsidiaries, and assigning duties and functions of the National Blood and Blood Products Committee.
- Body Organs Donation Law (2004) (revised in 2013), enacted to have safe transplantation of body organs, assignment of national committee on donation of body organs.
- Law relating to Control of Consumption of Tobacco and Tobacco Products (2006), enacted to control consumption of tobacco and tobacco products by establishing various measures for prohibiting smoking in public places, sale to minors, banning advertisement, labelling/warning messages, etc., according to WHO Framework Convention on Tobacco Control (FCTC), and the establishment of committees at various levels of administration for control of tobacco and tobacco products.
- Law relating to Private Health Care Services (2007), enacted to develop private health services in accordance with the National Health Policy, control of quality and safety of private clinics, hospitals, nursing and maternity homes, and assigning central committee and regional, district and township supervisory committees for private health services, who would control registration, licensing and functioning of those facilities.

While some legislation in the health sector was enacted to protect the consumers (the people) by assigning various intersectoral bodies and legal authorities to penalize those who fail to comply, the enforcement

actions were insufficient in many cases. For example, while the Myanmar FDA would issue notifications that certain medicines (both allopathic and traditional) were unsafe or unfit for consumption, the legal actions against those who violated the legislative measures were delayed or no actions were taken. Similarly, the law relating to the control of tobacco and tobacco products was enacted in mid-2007, but the enforcement actions for certain measures like enforcing smoke-free public places, adoption of pictorial and written health warnings, and the ban on advertising and promotion of sale of tobacco products, have still not been implemented. The regulatory capacity of various supervisory committees formed under these laws is weak, and the follow-up actions and guidance by the central committees, especially for intersectoral actions, are also insufficient, thus the original objectives of adoption of the laws could not be fulfilled to the desired level. In the light of transferring legislative power from Union to Regional Parliaments, implementation and enforcement capacity need significant strengthening.

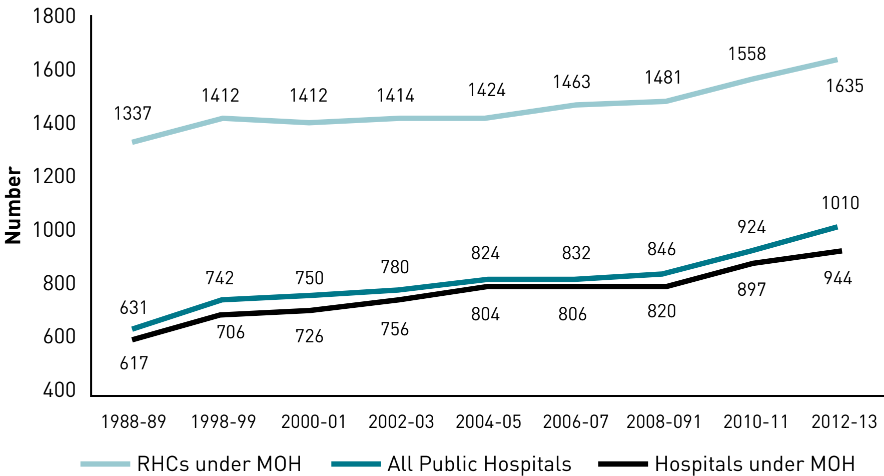
6.1.5 Failed reforms

As indicated earlier, Myanmar was able to achieve small-pox eradication by 1963, and poliomyelitis and leprosy elimination by 2003, receiving coveted international prizes for its successful implementation of a primary health care programme and nutrition promotion through community-based initiatives. However, due to continuous low investment in health since the 1980s (lowest per-capita health expenditure among ASEAN and neighbouring countries), Myanmar's overall development in health has stagnated (see section 1.4 and Table 1.6). Maternal mortality ratio (MMR, one of the MDG indicators) also remains at a high level, 3–4 times that of Viet Nam or Thailand. One of the main reasons for this is the low access of essential maternal health services such as delivery by skilled personnel, access to essential medicines, and access to care for obstetric and other medical and surgical emergencies.

Possible reasons for the failed situation include the low investment in rural health services, fungibility of government investment in the light of introduction of alternative financing mechanisms, and transfer of the financial burden to households. This was reflected by the fact that MOH stopped the usual annual budget for purchase of medicines, and CMSD stopped its usual annual supply to all MEDP townships (WHO, 1997). RHCs are the basic units of the township health system, which is the backbone of the national health system. Between 1962 (the time of the

Revolutionary Council [military] takeover of government) to 1988 (when the SLORC took over), the number of RHCs had increased from about 550 to nearly 1340, fully staffed with health assistants, LHVs, midwives and vaccinators. By 2011 (when SPDC handed over to the democratically elected government), RHCs numbered 1635 (a 22% increase from 1988), while the number of hospitals had increased from 631 to 1010 (60% increase). Investment for a hospital was 20–50 times more expensive than for an RHC. Population growth was estimated at 2–3% annually from 1990 to 2010; thus, without any real increase in the number of facilities and staff in the rural areas, the people would have had difficulty in accessing basic health care. Each midwife would have more pregnant mothers to take care of, and there would be more children to immunize, and more patients with TB, malaria, HIV or leprosy to be identified and treated. On top of this, there are millions of people living in nearly 100 townships along the border in mostly hard-to-reach areas, where civil conflicts are still prevalent, who will have less access to essential health care, especially mothers and children (MNPED & UNICEF, 2012b).

Figure 6.1 Growth of public hospitals and rural health centres (RHCs), 1988–2012



Source: Data from MOH (2010b, 2011a, 2012a, 2013).

6.1.6 Foreign aid negotiation and coordination

During the last few years, especially after Cyclone Nargis in 2008, Myanmar has experienced rapid increase in external aid and involvement of INGOs. Most external support has been provided through projects

financed and managed outside MOH, mainly through United Nations agencies and NGOs. The national NGOs and community-based social bodies are sub-recipients of these funds, directly carrying out the activities at the community level. Some of the reasons the donors gave for this funding mechanism were the lack of transparency and accountability under SLORC/SPDC, corruption and misappropriation. Other difficulties were the government's restriction on visas for short and long-term stays, restricted mobility of expatriates, short-term nature of funding, and limited capacity of local NGOs.

In order to manage the programme effectively in the country, many of the INGOs retained the programme management and administrative costs (about 20–30% of the project funds) in addition to the costs of professional staff who would worked on the programme. The national NGOs and civil society organizations also retained some proportion (20–25%) of the programme funds for their own management costs. Thus, less than half of the programme resources were used and thinly spread over across the country. Moreover, many of the programme activities were concentrated on a few specific diseases (based depending upon the donors' interest) or a few geographical areas (localized from programme or security perspective) (Risso-Gill et al., 2013). It is also a challenge how vertical and parallel implementation of heavily funded international aid programmes can be responsive to the overall health priorities in an effective and sustainable manner.

6.1.7 Barriers to township health development

While the quality improvement of the BHS working at the RHCs, especially in technical and managerial capacities, is the priority concern, there is also a need for quantitative expansion commensurate with the increasing population. Simultaneous improvement of the role played by township hospitals and their staff should also be considered, from point of view of comprehensive development of township health systems. Introduction of an overly frequent mandatory rotation/transfer system (every 2–3 years) for the heads of the township health departments (previously known as township medical officers, TMOs) in the 1990s in one way served the purpose of policy for rural retention, but also led to lack of understanding of the local situation and the community, reducing trust of and rapport with the local community, and weak working relationships with other sectors including local administration (see section 4.2.4). Longer duration of service and less-frequent transfer may be considered. Alternative

ways of mobilizing financial resources should also be considered, since reorientation and improvement of the health situation in Myanmar will require heavy investment.

Several thousands of voluntary community-level health workers, namely community health workers (CHWs) and auxiliary midwives (AMWs), introduced in 1980s to support the work of RHCs, remained active in their own villages. While some refresher courses and other supportive mechanisms (such as selection of best volunteers to be given annual prizes, provision of essential medical supplies and medicines) were usually programme specific, a national policy for retraining and retaining volunteers in the health workforce for the whole country did not materialize. Since the activities of these workers are based on the spirit of self-help and volunteerism, there could always be problems of attrition and defaulting. In recent years, as part of regional poverty-reduction initiatives, a few regional governments have launched the training and deployment of new AMWs with the objective of deploying one AMW per village. Regular supervision and support are needed to ensure their appropriate contributions on health development.

6.2 Future developments

6.2.1 Current political and policy debate on health and the health system

The current government is undertaking several sets of reform in various arenas – including political stability towards democracy, peace and tranquillity, law and order, poverty reduction, agriculture development, special economic zones, large-scale foreign investments mainly in the energy sector – to develop the country in line with democratic practice. The government adopted the Framework of Economic and Social Reforms (FESR), which was based on the existing priorities set in the Fifth Five-Year Plan (2011–2016), and other annual and mid-term sectoral plans and priorities. The Framework also set out the policy areas of how Myanmar will undertake necessary economic and social reforms by end of the five-year plan, i.e. 2016, while laying the basis for subsequent long-term reforms. The FESR took a people-centred approach with 10 priority areas: monetary-sector reforms, finance and revenue; relaxation of restrictions on trade and foreign investment; development of the private sector; education and health; food security and agriculture; transparency in government; emergence of effective and efficient governing system; the mobile phone and Internet system; and the development of basic infrastructure (MNPED, 2012).

Foreign investment for economic development is seen as a crucial channel for capital accumulation and growth. It also provides positive spillovers such as technology and skills transfer for the receiving end. Following the lifting of economic sanctions on Myanmar, the highly anticipated and lauded Myanmar Foreign Investment Law (FIL) was signed in November 2012. The reformed FIL contains significant changes, such as a streamlined process for registering foreign companies and the offer of a tax holiday. The new law also permits foreign investment through 100% foreign-owned investment companies and private–public joint venture contract with the government. The FIL allows for private hospitals (of all types) to be developed based on a private–public joint venture model. This green light has enabled many multinational firms to compete for opportunities to tap into this potential market of 60 million people, raising concerns about equity and regulatory oversight (Syailendrawati, 2013). Without sufficient regulation investment could go into industries that are detrimental to people's health like tobacco and alcohol. While the government promulgated the legislation for the control of tobacco consumption in 2007, there is no legislative control for alcohol consumption. Thus, there is a need for stronger government regulatory capacities to contain consumption of these harmful products. Since foreign investment enhances institutional capacity, Myanmar's government endeavours to bolster investment for human capital. Through this people-centric agenda, Myanmar can ensure that it channels foreign investment to achieve sustainable economic growth. Health and social development efforts need to link with private-sector development such as telecommunication, electrification and rural microfinancing systems, as well as possible funding through corporate social responsibility.

With the possible increase in inbound bilateral and multilateral grants and loans, international aid and foreign investment following the release of sanctions, the government formed the Central Committee for Management of Foreign Grants/Aid, the Work Committee, and the National Economic and Social Advisory Council, for effective management of foreign grants and aid. The government works with donor countries and international organizations (including United Nations agencies) in accordance with the five principles of the Paris Declaration. Myanmar hosted the Myanmar Development Cooperation Forum (MCDF) in January 2013, which was attended by representatives from United Nations agencies, delegates of ASEAN countries, bilateral donors, development partners, multilateral financial institutions and international organizations. Myanmar national plans and priorities, and requirements

of aid and loans for respective sectors and regions were discussed. The Nay Pyi Taw Accord for development cooperation envisioned ensuring effective cooperation between the government and the development partners (The President's Office, 2013a).

Box 6.2 Viable township health system

The network of basic health care infrastructure in 330 townships covering both rural and urban areas is strategically staffed with trained human resources. The health system at the township level is regarded as the fundamental unit of the health system of Myanmar, and it is the core of national health development. It has reached into the remote rural areas through the network of the volunteer health workforce and local community-based social organizations. It is a self-contained segment of the national health system that includes all health facilities and individuals (fixed and mobile, as well as public and private) providing comprehensive health services in a geographically compact administrative unit (within 20–30 km radius), and each is covering a population of about 200 000, about 50 village/ward tracts and 200 villages/wards. It is the place where the health needs of the community and national priorities and programmes can be reconciled. The township health system is governed by the Township Health Department, headed by the Township Department Heads, who work with the Township Health Committee for coordinating other sectors' work on health and for guiding the township's health development. In a typical township health system, there is a 25-bed township hospital with 2–4 doctors, 1 urban health unit/maternal health centre, 1–2 station hospitals, 4–5 rural health centres staffed by health assistants and LHVs, 20–25 Sub-RHCs staffed with midwives, and about 600 volunteer health workers.

Major improvements in the health status of the population are crucial for inclusive growth. Available information on health for various MDG indicators showed that Myanmar might not be able to achieve the Goals until and unless strenuous efforts are made in addressing health inequity, reducing under-five mortality and providing essential medicines. Provision of basic health services, especially in border and conflict-affected areas, is constrained by lack of access to and the poor state of health infrastructure, shortage and rapid turnover of health personnel, low pay, deteriorating morale and working conditions, and weakness in continuing training. The government budget allocation for health has been raised considerably (about 1% for decades to about 4% of total government budget in 2012) to improve equity and access to health services. Payment-free services for medical and surgical emergencies,

deliveries and obstetric emergency care at all hospitals have been available since mid-2012. Significant increase in supplies of essential medicines was witnessed at township health department, RHC and Sub-RHC levels in the financial year 2013. Health facilities in rural areas, such as station hospitals, RHCs and Sub-RHCs have been renovated and upgraded, though many more are needed. Necessary essential medicines and basic medical equipment have also been provided to all these health care facilities (MOH, 2013).

While the increased health expenditure by government in recent years has been used for employing new health staff to fill vacant posts and for purchasing essential medicines and equipment, various types of health financing mechanisms are still in place in many townships, such as subsidized emergency referral schemes, hospital equity funds, hospital trust funds, donation boxes, maternal voucher scheme, free direct care by NGOs, and treatment subsidies provided through local trusts/ foundations and community-based organizations across the country (MOH & WHO, unpublished information, 2012). Financing modalities of social health protection for the poor are still under debate in the political and professional arenas – how services are purchased and provided, and ensuring equitable access to care.

The Union Government is currently assembling the long-term National Comprehensive Development Plan (NCDP), consisting a set of four five-year plans covering the period 2011 to 2031, as part of the second stage of the reform process to enhance economic development and to raise the living standards of the people. MOH is involved in this process by contributing the health-sector component of NCDP. The Ministry has formulated and is implementing the mid-term five-year NHP for 2011–2016, that is directed at solving priority health problems of the country, rural health development, realizing the MDGs, strengthening the health system and improving the determinants of health (MOH, 2013). Beyond these immediate measures, the government also recognizes the importance of updating its overall health policy and strategies, including major review of how best to upgrade medical education, how to retain highly trained personnel in public service, how to develop an effective health information system, and how best to finance health care.

6.2.2 Developments outside the health sector that may have impacts on health policies

New legislation on social security (Social Security Law 2012) adopted by the *Pyidaungsu Hluttaw*[26] in August 2012 had an impact on health services delivery as well as financing (see section 3.3). This legislation has called for the creation of a Social Security Board and a Social Security Fund (managed in collaboration with the Ministry of Labour) to be collected through compulsory premiums from employees and employers, and also with capital and human investments from the government. The social security services would cover health and social insurance, pension benefits, maternity and sick leave, compensations for disability and death, and unemployment benefits (The President's Office, 2012). A major issue is how the public hospitals and health centres will have to work as contractual partners for providing health care to the insured workers under this new law. The purchasing of services by the social security and the way providers are paid (e.g. open-ended fee for services versus close-ended capitation payment or case-based payment) have ramifications on health-system efficiency, cost containment and value for money. At this critical moment of social health insurance expansion, the government should also, in parallel, expand financial risk protection to the poor majority in rural areas. Necessary bylaws, regulations and ministerial orders are under negotiation and development, expected to be in place by mid-2014.

NHC, previously chaired at the level of Prime Minister, is now chaired by the Union Minister for Health, with the participation of deputy ministers from health-related ministries. The Country Coordination Mechanism (CCM) adopted earlier for coordination of the Global Fund-supported programmes has now been used for coordinating other health development programmes supported by major donors (M-CCM, 2012). Partnership Group on Aid Effectiveness (PGAE), formed by the development partners in 2008, has evolved to coordinate donor assistance programmes in Myanmar, and act as a forum for increasing aid effectiveness. The mechanism of multi donor trust funds has been used for aligning donor support with the plans and strategies of national programmes, for sharing and managing results, and for accountability

26 *Pyidaungsu Hluttaw* is the Union Parliament or Assembly of Union, comprising of 2 houses: (a) a 224-seat upper house or the House of Nationalities, and (2) a 440-seat lower house or the House of Representatives, established under the 2008 Constitution. It is the supreme body of parliamentarians.

(MOF, Japan, 2012). Along with the three major financers of health development (Global Fund, 3MDG Fund and GAVI), United Nations agencies (e.g. WHO, UNICEF, UNFPA) and several bilateral development partners (e.g. USAID, JICA, Swiss Development Agency, Korea Development Agency) have expressed interest and started negotiation for aid/grants and soft loans for the health sector, to supplement the existing aid and grants. In addition, there are many INGOs, many of which came into Myanmar in support of post-Cyclone Nargis rehabilitation, which continue their supporting role in health development in Myanmar. Multilateral financial institutions (e.g. World Bank and Asian Development Bank) had already opened up branch offices, and are involved in the reform processes in Myanmar.

The Donor Coordination and Fund Support Mechanism has evolved a way of programme management with the principle of "Oneness" in Myanmar. The "Oneness" principle encompasses: (a) one national programme framework to guide donor support in line with the national policies, priorities and strategies; (b) one national aid-coordinating authority with a broad-based multisectoral mandate; and (c) one agreed country-level monitoring, joint reporting and reviews. The Nay Pyi Taw Accord assigned the task of developing sector strategies to the various sector working groups. In health, the new Myanmar Health Sector Coordinating Committee (M-HSCC), transformed and expanded from the CCM, is a recently established coordinating mechanism acting as a forum that brings all development partners together, irrespective of how support is being provided. M-HSCC would coordinate all health development activities in Myanmar. It is supported by seven technical and strategy groups (TSGs).[27] The M-HSCC includes stakeholders from government, international development partners and NGOs, and its Executive Working Group is well placed to get the process started and to ensure country ownership, inclusive process and mechanism, alignment and accountability. The United Nations agencies need to improve their ways of working, since old and new donors have started to engage directly with the government, and the United Nations' role in channelling funds and implementing projects and programmes, done for a decade or so, needs to be adjusted to this new reality, with the skills to match. Changes in fiduciary management, while gradual, will have major implications for

27 M-HSCC's mandate and membership are outlined in the document, *M-HSCC Governance Manual* (M-HSCC, 2013). The seven TSGs are HIV/AIDS; TB; malaria; maternal and child health and reproductive health; monitoring and evaluation; health system strengthening (HSS); and emergency and disaster preparedness.

United Nations staffing needs and resources (Cassels, Schleimann & Travis, 2013).

The challenges that remain are how these so-called 80 local and 450 community-based NGOs (which may be directly involved in implementation) would be inclusive for expressing their voices in the programme-development and decision-making processes. The Ministry of National Planning and Economic Development, the Ministry of Education, MOH and the United Nations Country Team in Myanmar jointly organized a three-day Conference on "Development Policy Options in Myanmar, with special reference to Education and Health" in collaboration with the Myanmar Development Resource Institute and the support of the EU, in Nay Pyi Taw, 13–15 February 2012. With more than 40 panel presentations and about 600 participants – representing various government ministries, United Nations agencies, civil society, the private sector, international financial institutions and aid agencies – the conference sought to identify issues, explore critical shortfalls in policy and institutional arrangements, and share experiences from countries in Asia, to inform future policy development. The first day of the Conference was devoted to discussions on key policy reform measures for accelerating economic growth and promoting inclusive human development; discussions on the second day were devoted to the development of the education sector; and the third day to the health sector in Myanmar. Discussions were enriched by presentations from national and international experts who shared national, regional and other country experiences. As highlighted by the Nobel Laureate in Economics Joseph E. Stiglitz of Columbia University, United States, in his keynote address on inclusive development, the challenge for Myanmar will be to overcome the limitations of the past, such as low investment in rural health services, inadequate funding for expansion of universal health coverage, and possible use in health of the government taxation generated from revenue on extracted natural resources, e.g. mining, petroleum and gas extraction and export, timber export, export of electricity and water resources from hydro-electric dams. He also highlighted the need to use new opportunities (e.g. potential for filling fiscal spaces in the national budget, increased investment in rural health facilities), and build up the country's existing strengths.

During the 1970s and 1980s, the planning and implementation of health programmes at the township level could be managed through the Health Development Committees under aegis of local political and administrative

(elected) leadership. Under the Constitution of 2008, there is more responsibility and authority at the regional and state levels and, in some cases, at district level in self-administrative autonomous zones and regions for directly managing health programmes. However, in many places, the local-level planning, coordination and monitoring cannot be carried out solely by the individual public agencies (administration, health, education, social welfare, agriculture, commerce and trade, bank managers, etc.).

President U Thein Sein launched an initiative in early 2013 to establish district and township development councils/committees, consisting of a mix of people representing the public agencies, political parties, well-wishers and leaders recommended by the local population. The aim of these committees/councils is to strengthen the planning, management, ownership, monitoring and evaluation of the development programmes, including health, implemented at the local level. These bodies have been established in a trial and development stage. Actual work situations – such as selecting priority health programme areas, setting up and managing community trust funds, selecting and deploying volunteers at various villages in phases, supporting community mobilization – at district, township and village levels will require a transfer of the functions of the vertical authoritative bodies that worked under the socialist regime and military government to a body of state and non-state actors/stakeholders at local levels, without any political or administrative interference (The President's Office, 2013b). Developmental works related to health can easily be integrated with other sectoral works and the necessary technical support is required at those levels to make planning and management effective and efficient.

While the policy actions and development efforts are aimed at comprehensive rural development, with people-centred approaches, and also to achieve better coordination of all investments through multilateral and multi-stakeholder coordination and cooperation, the health development efforts in Myanmar need to address the failed reforms as well as reforms that support universal access to health care. For example, the current policy discussion on universal access to free essential medicines at all levels of health facilities should be translated into actions. A number of issues need serious attention as they could lead to a worse scenario, such as: a growing middle class and increasing formal-sector employment – private health care is responsive to these, but leaves the poor behind; public-sector health development and

rehabilitation at township, RHC and Sub-RHC levels that is not able to keep pace with private-sector growth from foreign direct investment (FDI), further aggravating the problems; internal brain-drain issue; and the high influx of donor grants and loans, with increased role of INGOs in direct planning and implementation at the expense of weakening government capacity.

7 Assessment of the health system

Chapter summary

In the context of the aspirations to improve the health status and prolong the lives of the people, the National Health Policy and National Health Development Plans (2000–2016) have the achievement of universal health coverage as an overarching objective, with building an effective and equitable health system and improving determinants of health as important and ambitious objectives. However, emphasis on political stability and economic over social development has made the health-for-all policy more of a concept than practice. Following the changes in the political and economic environment and the introduction of health-financing reforms in the form of user charges, household out-of-pocket spending on health care (and the market's imperfect role in health) became a dominant part of health service provision, hampering access by the poor who cannot afford to pay. Measures taken to protect the poor were also not effective. With the market becoming a dominant mode of health service provision, some health professionals are more oriented towards making profit. Change in the behaviour of these health professionals, especially doctors, has eroded a once harmonious relationship with patients that had been nurtured in the traditional cultural context. Despite the policy to expand services to the rural and border areas, available evidence indicates the existence of disparities in access to and utilization of health services. Utilization of services depends on capacity to pay for medical care and transport cost rather than need. Overall, life expectancy at birth increased for both females and males between 1980 and 2011. Both communicable and noncommunicable diseases were identified as major causes of mortality, with tuberculosis and cardiovascular diseases as the most common causes of deaths. Dietary risks, tobacco smoking and household air pollution from solid fuels were identified as the risk factors accounting for the most disease burden in Myanmar. In the face of formidable social and economic challenges, gains in combating major communicable diseases are noteworthy and attributable to the health system. Expansion of health care facilities and adequate staffing with appropriate skill mix to address

population health needs further strengthening. Evidence indicates that the allocative and technical efficiencies of resource allocation are still inadequate. Transparency and accountability are needed in the context of the previous overwhelming domination of socialist ideology, while the historical autocracy and lack of consumer sovereignty are challenges in the current market economy. There had been a substantial gap between policy objectives, effective implementation and outcomes. Reform measures initiated by the elected civilian government and recent increase in government spending on health foster new hope for the health system to become well functioning and fair, though it is a long journey to reach that goal.

7.1 Stated objectives of the health system

Shaped by experience, epidemiological and demographic changes, political and economic context while passing through the different political systems, the health system of Myanmar has achieving universal health coverage as its overarching objective, with the aspiration to improve the health status and prolong the lives of the people. Building an effective and equitable health system, and establishing partnership with all health stakeholders to protect the health of people by promoting health and removing or minimizing health-damaging determinants were identified as important and ambitious objectives, as reflected in the National Health Policy (1993) and the objectives of the National Health Development Plans formulated for the periods 2000 to 2016 (Myanmar Health Vision 2030 [2001–2030], National Health Plan [2006–2011] and National Health Plan [2011–2016]; MOH, 2010b, 2011d, 2012a) (see Box 7.1).

In order to improve access to health care, strategies for the development of health care facilities and infrastructure along with deployment of human resources, and provision of medicines and supplies have been implemented. Expansion and improvement of health service availability with a particular emphasis on rural health was initiated in 1951 by creating a category of health worker called health assistant (Chapter 2). The health assistants, along with lady health visitors (LHVs) and midwives (MWs), played an important role in providing rural health services. Rural health infrastructure was further strengthened in 1965 when station hospitals, each run by a doctor, were established as station health units to provide a higher level of care for the rural population.

Box 7.1 National Health Policy 1993

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

Source: MOH (2012).

The training school for health assistants was further upgraded to a university, conferring a bachelor degree, in the early 2000s. Although the educational qualification of health assistants was upgraded, parallel improvement in the supply of medicines and equipment did not follow, affecting the quality and effectiveness of care. This, in turn, had a negative impact on staff morale. Similarly, the number of station hospitals built over several decades to expand the service for the rural and hard-to-reach populations was not adequately matched by trained hospital staff, medicines and equipment. Production of health workers and development of health facilities had been oriented more towards doctors, nurses and hospitals, and there has been little or no change in the number of primary health care (PHC) facilities like primary health centres, maternal and child health (MCH) centres and school health teams since the late 1980s (MOH, 2013).

Insufficient government funds to supply the required amount of essential medicines to health care facilities and the adoption of a market economy system with the change of regime in 1988 led to the introduction of user charges for medicines. Because of low government investment in health with subsequent high out-of-pocket (OOP) health spending by households, urban poor and rural populations are facing physical and financial barriers to access health care. Consequently, disparities in access and health status between rural and urban populations remain as before. The system constraints mentioned meant that the objective of universal reach to the population through building an effective and equitable health system remained unachievable.

The importance of factors that extend beyond the scope and capacity of health sector but which have significant impact on health has been increasingly recognized among public-health administrators and planners. One important initiative and landmark in the attempt to improve sectoral involvement and partnership for health was the formation of the National Health Committee (NHC) in 1989. The Committee provided mechanisms for coordinating and directing sectoral involvement in health. There is some evidence that the Committee was instrumental in bringing about sectoral collaboration on some health issues (Chapter 2). However, the tendency of the government to favour priorities for political stability and economic development over social sectors including health, and the need to acknowledge the fact that social development including health is a vital ingredient for peace, stability and growth meant that "health in all policy" remained just a concept.

The health sector still needs to develop its capacity to assess the impact on health of various developmental activities undertaken by sectors such as transport, tourism and natural-resource extraction, and the ability to advocate to and convince policy-makers to address these determinants of health.

The civilian democratic government now in place has ushered in new hope for the social sector. For the first time there has been acknowledgement that poverty is the problem to be solved and measures for introducing social protection in the country have been identified. Government spending for health was quadrupled for the fiscal year 2012–2013. Donors and developing partners are showing interest in health development in the country. The health system needs to reinvigorate itself to overcome the challenges that it has faced since the early 1990s and to take a leading role in national health development.

7.2 Financial protection and equity in financing

7.2.1 Financial protection

Following the health financing reform with the introduction of user charges in public hospitals, private households became and continued to be the dominant source of finance for health care, accounting for 82–91% of total health expenditure throughout the period 2001–2009, although it declined to 69% and 70% in 2010 and 2011, respectively, as estimated in the National Health Accounts for these periods. The amount of OOP made by households was well beyond the benchmark of 30% recommended to avert catastrophic health payments (WHO, 2010). Myanmar National Health Accounts have so far been unable to make estimates disaggregated by population group and region. However, most of the expenditures were made for medical goods, accounting for about 54% of the expenditure, followed by curative and related care (Table 7.1).

Table 7.1 Trend of the structure of household out-of-pocket payment for health care

Household health spending profile	2002	2003	2004	2005	2006	2007	2008	2009
Curative and rehabilitative services	30.64	30.67	30.68	30.69	30.60	30.64	30.64	31.04
Ancillary services	15.26	15.20	15.16	15.13	15.35	15.27	15.24	15.17
Medical goods dispensed	54.10	54.13	54.16	54.18	54.05	54.09	54.12	53.79

Sources: National Health Accounts; MOH & WHO (2005, 2007, 2009, 2011a).

Although the health system of Myanmar is committed to PHC and was one of the first countries to develop a PHC structure in the South-East Asia Region, the majority of households, particularly the poor, have to rely on private health care providers due to physical proximity, shorter waiting times, timely availability of staff and drugs, and perceived quality of care (MOH & WHO, 2008a). Nyein Foundation also found that a majority of the poor had to seek care from a range of private providers (including drug shops, quacks, traditional healers) and community health workers (CHWs) (Nyein Foundation, unpublished data, 2012). These findings indicated that high OOP payment due to the imposition of user charges in public health care facilities with less government spending for health (depth of coverage) is further compounded by lack of access to health staff at peripheral settings (breadth of coverage).

When user charges were introduced, the Department of Health (DOH) issued a directive to exempt indigents from paying. One of the few evaluations of the equity implications of community cost sharing (CCS, user charges) in Myanmar observed that there was no systematic arrangement for exempting the poor and not a single outpatient exempted from drug charges (Tangcharoensathien, 1999). Interventions to bring down OOP and to provide financial protection for poor were not effective (see Chapter 2). Without substantial and significant increase in government spending for health, current initiatives will have only limited impact on strengthening financial protection.

7.2.2 Equity in financing

OOP spending by private households remains the main source for financing health care in the country. Even if poor families have to spend the same amount of money as rich households, their relatively lower income and ability to pay indicates the regressive nature of this financing mechanism. A study by the Ministry of Health and the United Nations Children's Fund (unpublished, 2012) found that households from all wealth quintiles spent a similar proportion of their nonfood expenditure on health. However, this study did not assess the progressivity of different health financing sources. Meanwhile, Myanmar National Health Accounts (MOH & WHO, 2005, 2007, 2009, 2011a) suggest that government health spending had been directed more towards high-end tertiary services, which tend to be located in big cities with less access by the rural poor.

Although there are limitations in the data and expertise in determining progressivity of financing as a whole, conventional wisdom indicates that an OOP-dominant health financing system is regressive; published literature (e.g. WHO, 2010) indicates regressivity of OOP and progressivity of general tax source of health finance. As the contribution of tax revenue in the government allocation to health is negligible when weighed against the very high proportion of regressive OOP, tax finance will have almost no effect on making health financing more progressive. With increased allocation to health by the new government, the proportion of household expenditure on health has declined to some, but not to a significant, extent.

7.3 User experiences and equity of access to health care

7.3.1 User experiences

The World Health Report 2000 (WHO, 2000) – which immediately triggered widespread criticism of its methodology, scientific rigor and usefulness – placed the health system of Myanmar among the least responsive. Based on the WHO definition of "health system" in the same report and the way the health system of Myanmar is constituted, people's contact with health systems is not only confined to hospitals and doctors and nurses. At the peripheral level of the health system where doctors are not available, the community has to rely on basic health staff (BHS) for day-to-day health care.

Traditions and culture have placed school teachers and doctors high in the social hierarchy and they are treated with reverence. Most members of these professions used to live up to the expectations of the people. Patients and families tend to rely totally on doctors for decisions relating to their treatment and care. One of the past presidents of the country, who was educated and philosophical, once labelled doctors as "kind and concerned" (Maung-Maung, 1999). Similarly, BHS staying close to the community they serve can establish good rapport with them and are regarded as community leaders. Problems relating to dissatisfaction with the health system arose only when the quality of service broke their tolerance. In these instances disciplinary actions were taken by the authorities concerned and the events rarely became public.

With the introduction of a market economy in the country, doctors are no longer held in reverence. With high OOP household health spending, the market's imperfect role in health tends to become a dominant mode of

health-service financing and provision. Change in the behaviour of some if not all members of the profession impacts on the profession and the system. The public view of the profession and the system has changed. With the news media becoming free and active, frictions between the health system and the public have become widely and rapidly known.

In the absence of valid data, experiences of an engineer holding a doctorate degree conferred abroad, in his encounter with the health system on three occasions relating to confinement of his wife and illness and death of his mother may shed some light on what happens during people's actual contact with the health system (Box 7.2). No indication was given of where the encounters took place – public or private facility. However, his experiences, though not reflecting the situation of the entire system, signal a warning.

Measures (though not amounting to the extent of reforms) had been taken in 2010, when such problems had started to surface. Responsible persons in both the service and academia have been undertaking measures to improve the communication skills and ethical standards of medical professionals.

Box 7.2 User experiences

My intention is to provide an impartial and analytical view to rebuild trust between doctors and the public that has been deteriorating.

While my wife was pregnant with our second child, we had to seek the care of the attending obstetrician and gynaecologist because my wife was having pain due to separation of the placenta. The specialist just gave her a pain killer without making any investigation. One week later an emergency operation had to be done, the baby was lost and the life of my wife endangered.

On the second occasion while seeking care for my mother who had gall stones, the attending physician, younger by age and junior in position, was shouting at me and I had to endure and control my temper.

On the third occasion, my mother though with smile when carried on the trolley into the operation theatre in the morning, was brought out by noon unconscious. She was in the state of unconsciousness until 6 o'clock in the evening when she died in the intensive care unit of unexplained cause.

(Box 7.2 User experiences cont.)...

I felt that if proper explanation of the condition, severity and what was expected had been provided by the time the patient was admitted to the hospital and during the course of treatment, there would not be any dissatisfaction and complaints coming from the part of the patient. People of Myanmar tend to be forgiving in nature and even the wrong-doings of doctors are tolerated. Religious teaching has made them tolerant and to accept karma (one's own deed) as a cause of whatever happens to them. I had come across some nursing staff working with dedication though receiving meagre salary in some small towns. But this is not the case in big towns.

Let us look at some conditions undermining the relations between medical profession and the public, which need to be improved:

- Communication between doctors and nurses and patients and their attendants
- Ethics and competency
- Transparency
- Health professionals being considerate.

What my father said on the day my mother died made a permanent imprint in my heart: "I'd rather die than take any treatment when I get sick. I no longer have trust in any hospitals or doctors."

Source: Maung-Thwin (2013).

7.3.2 Equity of access to health care

Despite the policy statement to expand services to the rural and border areas, evidence indicates large disparities in access to and utilization of health services (MNPED, MOH & UNICEF, 2011) (Table 7.2).

Access to and utilization of services such as delivery in health care facility, childbirth attended by skilled personnel and children under five with diarrhoea treated with oral rehydration were more common in urban than in rural areas. Educated mothers tended to deliver in health care facility and be attended by skilled personnel. Residents in large regions (Yangon, Tanintharyi) were more likely to have better access to and utilization of health services in terms of delivery in facility and being treated with oral rehydration when having diarrhoea, than those in states (Chin and Shan). Similarly, those better off economically had better access to and utilization of health services.

Table 7.2 Disparities in access to and utilization of health services

Health service		
	Rural	Urban
Delivery in health care facility	25%	65%
Childbirth attended by skilled personnel	63%	90%
Children under five with diarrhoea treated with oral rehydration	62%	77%
	Mothers with primary education	Mothers with secondary or higher education
Delivery in health care facility	25%	54%
Childbirth attended by skilled personnel	62%	85%
	Region / State	
	Lowest	Highest
Delivery in health care facility	(Chin State) 6%	(Yangon Region) 69%
Children under five with diarrhoea treated with oral rehydration	(Shan State – North) 28%	(Tanintharyi Region) 90%
	Poorest households	Richest households
Childbirth attended by skilled personnel	51%	96%
Children under five with diarrhoea treated with oral rehydration	58%	79%

Sources: MNPED, MOH & UNICEF (2011).

Evidence on health Inequity in all dimensions – geographical, socioeconomic and maternal educational level – provides a platform for policy to minimize these gaps. Regular equity monitoring is no less important than building up capacity to generate the evidence and inform the public to hold government accountable, and needs to be introduced in the health and social sector.

As mentioned in Chapter 4, difficulty in placing and retaining has created variation in availability of health workers across regions and states. A desk review for the extended programme for immunization (EPI) as part of the health system-strengthening strategy identified variability of access to services across the country (related to mobility of the population), geographic access and security, limited health care infrastructure and motivation of health staff as systemic barriers to the performance of immunization (MOH, unpublished findings, 2008). A situation analysis of children in Myanmar (MNPED & UNICEF, 2012b) citing the findings of

the multiple indicator cluster survey (MICS; MNPED, MOH & UNICEF, 2011) stated that coverage of basic services in regions and states with significant hard-to-reach areas like Sagaing Region and Chin, Kayin, Kayah and northern Rakhine states were considerably lower than in other parts of the country. These findings suggest utilization of services depend on factors other than need.

7.4 Health outcomes, health-service outcomes and quality of care

7.4.1 Population health

Overall, life expectancy at birth increased for both females and males between 1980 and 2011 (see Table 1.3). WHO has identified both communicable and noncommunicable diseases (NCDs) as major causes of mortality. Among the communicable diseases over half of the deaths were estimated to be due to tuberculosis, while cardiovascular diseases were the most common causes for deaths from NCDs (see Chapter 1). According to the national statistics, respiratory TB, heart failure, other heart diseases and acute myocardial infarction were the leading causes of hospital deaths in 2011 (MOH, 2013).

WHO also identified major depressive disorder, lower-back pain, chronic obstructive pulmonary disease, iron-deficiency anaemia and neck pain as the five leading causes contributing to years lived with disability (YLD). The WHO Global Burden of Diseases, Injuries and Risk Factors Study 2010 (The Lancet, 2012) identified dietary risks, tobacco smoking and household air pollution from solid fuels as the risk factors that contribute most to the disease burden in Myanmar. In the same report, childhood underweight and occupational risks were identified as leading risk factors for children under five and adults aged 15–45 years, respectively. Approximately 40% of deaths in the country are reported to be due to NCDs (see Chapter 1).

Consuming food and beverages prepared and sold by vendors or hawkers are common practices in Myanmar. Studies undertaken in some central areas of Yangon indicated faecal contamination and lack of hygienic practices among food handlers (see Chapter 1). A postmarket survey in 2010 found food such as soft drink, pickled tea leaves, fish paste and chilli powder containing unpermitted colour dye. Food imported from border areas is not under strict control due to limited control capacity and smuggling (often with foreign-language

labels). This illegal importing has been creating a number of problems, especially in terms of quality and safety. The current food control system has yet to be strengthened in response to emerging issues and problems. Although the food control system has been established systematically in Myanmar, achievements on food control work have been limited for various reasons, including insufficient technical capacity (Wai Yee Lin & Yamao, 2012).

Study results between 2001 and 2007 showed that, despite the gradual decline of smoking, prevalence of smokeless tobacco use such as chewing of betel quid with tobacco is rising steadily. Misconceptions that smokeless tobacco use is less dangerous than smoking tobacco products and the fact that smokeless tobacco products are much cheaper, are the big challenges in tobacco control (MOH, 2009). Intersectoral collaboration may prove to be working well in tobacco control measures and in restricting advertisement and prohibiting sponsorship of tobacco and alcohol. However, being a complex issue, tobacco control faces many sociocultural and economic challenges. Tobacco control efforts through the implementation of the MPOWER[28] Policy Package face constraints like limited resources for surveillance and research, the need to strengthen law enforcement, nicotine replacement therapy (NRT) not available widely, lack of graphic/pictorial warnings on cigarette packages and text warnings not being specific. In addition, the nature of smokeless tobacco products makes health warnings impossible and low tax rates on cheroots and betel quid with tobacco promotes switching of smokers from cigarettes to cheroots and smokeless tobacco (MOH, 2009).

Although adult average alcohol consumption is reported to be declining, observations indicate a wide range of promotional activities are being used despite the restrictions on advertising and sponsorship. With the opening up of the country and increased inward investment, it is a valid concern that alcohol will be more available than before with additional health and other social consequences.

In the face of formidable social and economic challenges, gains in combating communicable diseases are noteworthy and attributable

28 MPOWER is a policy package to reverse the tobacco epidemic and comprises strategies to Monitor tobacco use and prevention policies, Protect people from tobacco smoke, Offer help to quit tobacco use, Warn about the dangers of tobacco, Enforce bans on tobacco advertising and promotion, and Raise taxes on tobacco products.

to the health system. Smallpox was eradicated in 1970 and officially declared eradicated in 1977. Leprosy was declared eliminated in 2003. Trachoma control activities carried out for 40 years have prevented 300 000 cases of severe visual impairment and blindness. In controlling Trachoma, for instance, improvement in the environmental factors such as increased water supply, improvement of sanitary conditions and greening of the dry and arid areas are also playing a great role (Kyaw-Lwin & Ko-Ko, 2005). Poliomyelitis was declared eradicated in 2003. These achievements are the outcomes of dedicated efforts of field health workers and health-service managers at regional and central levels of the health system. A lesson was also learnt that an integrated approach is the best way to achieve elimination and eradication of communicable diseases. The achievements have also been attributed to political will, multisectoral response, community participation and partnership.

The available data indicate that, on average, people are living longer than before with reduction in mortality rates as indicated by declining crude death rates, maternal and child mortality rates. However, compared to other countries in the region with similar level of development, there is no reason for the health system to become complacent. With limited resources allocated to the health sector, many health facilities lack basic equipment and supplies and do not have sufficient and/or appropriate health staff. The problems of access, quality, human resources, management and organization still need to be overcome (MNPED & UNICEF, 2012b). On the other hand, as there is still neither a consumer protection act nor a consumer protection association, risk factors mentioned earlier and which are beyond the control of the health sector still pose threats to people's health, and a more comprehensive, collaborative and strategic approach will be required for the achievements to be greater and lasting.

7.4.2 Health-service outcomes and quality of care

Along with the drive to promote health and prolong the lives of the people, quality of care and patient safety are intrinsic aims of the health system of Myanmar. However, reliable information on health service outcomes and quality of care is not available because of the lack of systematic and comprehensive reporting and documentation of adverse events. For fear of embarrassment, punishment and malpractice litigation, it is common for health professionals to be reluctant to register or talk publicly about adverse events and medical errors (Mugrditchian & Khanum, 2006).

Some quality-control measures are undertaken in the provision of preventive services. Coverage for childhood immunization is improving with time. As the cold chain and ensuring appropriate temperature for vaccines are regarded as vital components of EPI, a series of assessments was conducted in 2011 and 2012 to strengthen cold-chain logistics. The assessment covers effective vaccine management, temperature mapping and temperature monitoring. Myanmar has initiated maternal and perinatal death reviews to better understand the factors that contribute to unnecessary deaths and to identify what can be done to prevent them.

The national medicines policy and essential medicine list are in place along with National Standard Treatment Guidelines aimed at PHC medical officers and providers. Tertiary hospitals like Yangon General Hospital can have standard treatment guidelines developed on their own initiative although more comprehensive guidelines are still needed (Holloway, 2011). Special consideration should be given to introduce a formal system for continuing professional development (CPD) as a requirement for relicensing of health professionals. There are no functional drug and therapeutic committees in hospitals in Myanmar. An accreditation system for hospitals needs to be developed, including existence of the functioning drug and therapeutic committees as one of the criteria. For promoting rational use of medicine, monitoring could be accomplished by prescription audit and feedback.

7.4.3 Equity of outcomes

Health outcomes in terms of infant, under-five and maternal mortality are shown in Table 7.3, based on findings of National Mortality Survey conducted by the Central Statistical Organization (CSO) in 1999 (CSO, 2009). Infant mortality and under-five mortality rates per thousand live births were 60 and 78, respectively, and maternal mortality ratio (MMR) was 255 per 100 000 live births, for the whole country. Disparities by regions and states were observed: while Mandalay Region recorded the best mortality outcome for infants and under-five and Sagaing Region for best maternal mortality outcome, mortality outcomes for both children and mothers were worst in the Shan State (East).

Table 7.3 Infant and under-five mortality (per 1000 live births) and maternal mortality rate (per 100 000 live births) by region and state

State/Region	Infant mortality rate	Under-five mortality rate	Maternal mortality ratio
Kachin State	70	117	240
Kayah State	50	70	288
Kayin State	53	71	212
Chin State	48	78	361
Sagaing Region	62	74	136
Tanintharyi Region	56	94	307
Bago Region	65	80	158
Magway Region	73	114	286
Mandalay Region	39	47	176
Mon State	43	53	213
Rakhine State	62	70	344
Yangon Region	53	58	170
Shan State (South)	64	70	436
Shan State (North)	67	98	518
Shan State (East)	91	118	527
Ayerwaddy Region	62	75	173
Union	60	78	255

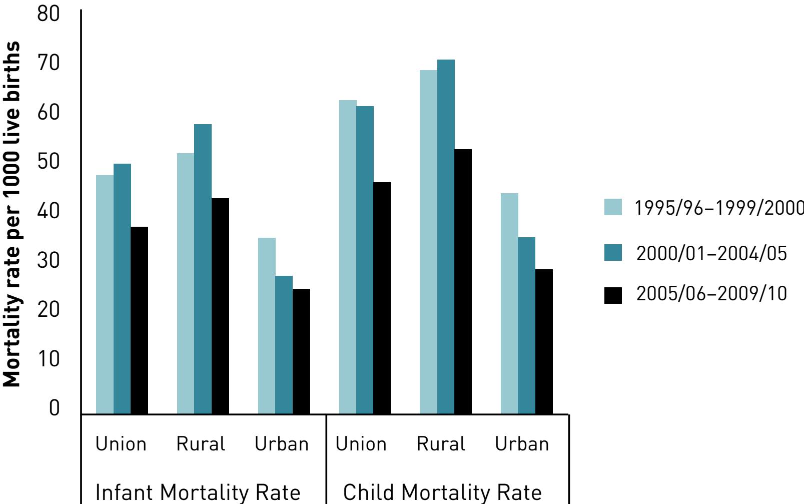
Source: CSO (2009).

The Multiple Indicator Cluster Survey (MICS) in 2009 (MNPED, MOH & UNICEF, 2011) indicated consistently higher infant and child mortality in rural than urban areas throughout the period 1995–2010 (Fig. 7.1). While these mortality rates increased in rural areas between 2000–2001 and 2004–2005, urban areas showed consistent progresses in mortality reductions throughout the period.

The same MICS also revealed some disparities in infant and child mortality by gender, maternal education and wealth quintiles, where male children, lower education status of mother and the two poorest quintiles had worse outcomes (Fig. 7.2). For nutritional status, there was little difference between urban and rural children in terms of wasting (weight-to-height ratio, i.e. thin for their height). However, more children in rural areas were found to be underweight (weight-for-age, i.e. thin for their age, meaning body weight below expected for the age) and stunted (height-for-age, i.e. short for their age) than children in urban areas.

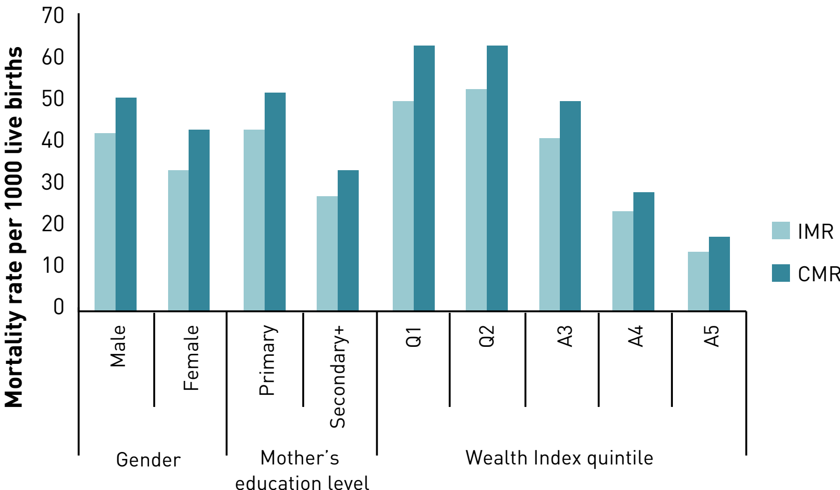
Undernourishment was more common among children in Rakhine and Chin states than in other states and regions. Undernourishment was also more common among children whose mothers were less educated and those from the poorest households (MNPED, MOH & UNICEF, 2011).

Figure 7.1 Infant mortality and child mortality rates in rural and urban areas, 1995–2010



Sources: MNPED, MOH & UNICEF (2011).

Figure 7.2 Infant and child mortality rates by gender and socioeconomic status, 2009–2010



IMR: infant mortality rate; U5MR: under-five mortality rate.

Sources: MNPED, MOH & UNICEF (2011).

7.5 Health system efficiency

7.5.1 Allocative efficiency[29]

Even with a small government investment in health, MOH budget allocation in terms of infrastructure and health workforce development was hospital centric, in favour of tertiary care hospitals at the expense of PHC, despite clear statement in the National Health Policy (1993) that PHC approach will be applied to reach Health for All goals. Hospital-centric investment, at the expenses of RHC which offer comprehensive health promotion, disease prevention and basic treatment, did not achieve allocative efficiency. In terms of production of health staff, while numbers of doctors increased by 3572 and nurses by 7457, most peripheral levels of the health workforce saw much lower growth between 1988 and 2007 (e.g. midwives and Public Health Supervisor-2 increased by 901 and 770, respectively) (MOH, unpublished data, 2008). Allocation of the meagre government budget is therefore inefficient, as curative care is less cost-effective than prevention and health promotion; and inequitable, where hospital care is out of reach of the vast majority of the rural population who are poor.

There are instances where health policies in place fail to promote a holistic approach to patient care with subsequent fragmented and vertical systems of service delivery management, weak decentralization and insufficient connection between decisions taken at central and subnational levels. Investing in nutrition is often overlooked and underfunded although there is ample evidence indicating the merit of doing so. In fact malnutrition requires intersectoral policies related to food security and livelihood. Regarding it as merely a health problem and failing to address the issue at policy level has led to shortfalls in funding and implementation (MNPED & UNICEF, 2012b).

During the period 2004–2012, some 140 new hospitals were established, while annual hospital statistics reports indicate that just over half of the sanctioned beds were occupied during this period. In addition, about 60% of the hospitals were underperforming in terms of bed occupancy and average turnover of patients per bed (see section 7.5.2 for details). At the same time, expansion of RHCs fell short of the planned target (MOH, 2011d), and at Sub-RHCs there is only one midwife catering for an average population of 5000–10 000, and often she has to provide services in a house

29 Allocative efficiency indicates the extent to which limited funds are directed towards purchasing an appropriate mix of health services.

in the community, without a permanent office. Successive National Health Accounts also revealed devotion of financial resources more for curative than for prevention and public health services. This may be an indication of a lack of coherence between evidence, plan and implementation. Also financial barriers (both transport costs and user charges) prevented patients using hospital services, hence services were underutilized.

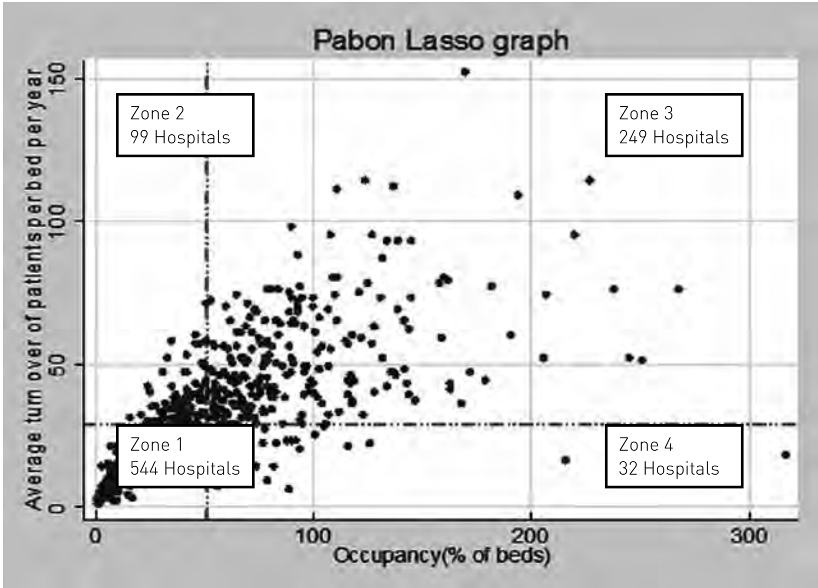
7.5.2 Technical efficiency[30]

Although growth in health care facilities is directed more towards hospitals, assessment of hospital performance based on the public hospital data for 2011 indicated that almost 60% of these hospitals were not performing well. Applying the Pabon Lasso Model, the Health Information Division of the Department of Health Planning (DHP) assessed the performance of 924 public hospitals, using hospital administrative data reported by these hospitals and compiled and published in the Annual Hospital Statistics Report. The Pabon Lasso technique is a graphical method that makes use of three indicators (bed turnover ratio, bed occupancy rate and average length of stay) concurrently in assessing the relative performance of hospitals in term of use of beds. In this method, the occupancy rate (horizontal axis), is plotted against the turnover ratio (vertical axis) with vertical and horizontal lines dividing the diagram into four quadrants. The horizontal and vertical demarcations represent the mean values of the turnover ratio and occupancy rate, respectively (MOH & WHO, 2008b).

An analysis conducted in 2011 found that 544 hospitals (58.9%) were performing relatively poorly (zone 1) (Fig. 7.3 and Box 7.3). Among these poorly performing hospitals, 350 were station hospitals, 152 township hospitals, 18 district hospitals and the remaining 24 general hospitals with specialist services. The station and township hospitals are located peripherally, close to the community and form the backbone of PHC systems. Poor performance of these types of hospitals can have negative impact on providing essential services to the people and, unless underlying causes can be explored and remedied, the objective of reaching all with the PHC approach will not be realized. The reasons for poor performance include poor utilization because of inadequate staffing, insufficient supply of medicines and equipment, and inability to overcome financial barriers by poor.

30 Technical efficiency indicates the extent to which a health system is securing the minimum levels of inputs for a given output (or the maximum level of output in relation to its given inputs).

Figure 7.3 Assessing performance of hospitals using Pabon Lasso Model



Source: Health Information Division, DHP (2011).

Box 7.3 Performance of hospitals

Zone 2: (99 hospitals)

- High turnover and low bed occupancy
- Unnecessary hospitalizations
- An oversupply of beds, or the use of beds for simply observing patients

Zone 3: (249 hospitals)

- High turnover and high bed occupancy
- Hospitals that have reached an appropriate level of efficiency
- Relatively few vacant beds at any time

Zone 1: (544 hospitals)

- Low turnover and low bed occupancy
- A surplus of hospital beds relative to the existing demand
- Patients do not use due to geographical, socioeconomic and cultural barriers, or lack of trust and confidence

Zone 4: (32 hospitals)

- Low turnover and high bed occupancy
- Serving patients with serious, chronic illnesses or have an unnecessarily long average length of stay

Source: Health Information Division, DHP (2011); inference based on Goshtasebi et al. (2009).

Government general expenditure on medicine was reported to be low with frequent running out of stock and Central Medical Store Depot (CMSD) was able to supply less than half of the medicine on the national essential medicine list due to budget constraints. Doctors were also reported to be prescribing many drugs not on the essential list and by brand name. High vitamin use was observed in all facilities studied (Holloway, 2011). There needs to be a mechanism, including but not limited to prescription audit, for monitoring efficient use of medicine. It is essential to apply effective provider payment mechanisms, such as capitation or a diagnosis-related group, which would send strong signals and incentives to providers to save costs and be efficient by prescribing low-cost quality generic medicines.

Available data indicate that training of human resources for health has been skewed towards doctors and nurses. For instance, MOH trained 100 graduate pharmacists yearly and up to 2553 pharmacists had been trained by 2013 (MOH, 2013). However, many hospitals were without pharmacists and even the CMSD has only a few pharmacists (Holloway, 2011). The objective to attain an appropriate mix of human resources in health remains purely a statement of intent.

7.6 Transparency and accountability

Transparency and accountability are new terms arriving with the current civilian government. Having passed through the period overwhelmingly dominated by socialist ideology and autocracy, and having become accustomed to these norms, the citizens are neither accustomed to, nor do they have easy means to lawfully demand for their entitlements as citizens. For decades people had been governed and ruled rather than served by the government and its machinery. Meanwhile, the market economy system had been claimed to be in place, but with imperfect competition consumer sovereignty was an exception rather than a rule. These situations also applied to the health sector. Doctor–patient interaction in Myanmar is also dominated by the doctor and a culture of "not questioning the doctor" (Mugrditchian & Khanum, 2006). Similarly, doctors usually feel there is no point in sharing information with patients. Without really understanding the consequences, patients tend to sign consent forms. In this way they rarely participate in their own care. In most settings where there are high case loads, some doctors can easily find an excuse for failing to communicate with patients effectively (see also Chapter 2). As mentioned earlier, patients, especially the less-educated ones, tend to rely on doctors for treatment decision.

Health policy development and implementation were mostly top-down and patients had little opportunity for participation. So-called participation in the previous political setting meant just following the instructions given. There was no transparency to the public in how resources were allocated and by whom, and this was not limited to the health sector. In these circumstances, what makes the health system work is persistence of those health professionals and workers who remain loyal to their profession and keep on upholding their moral and ethical values.

With the changing political environment and the call of the government for transparency and accountability and a people-centred approach, there will be greater expectation from the citizens for their entitlement. The media is also becoming active and mishaps in health care settings and grievances of patients are coming to the notice of the authorities more frequently than before. Incidents such as mortality following gross negligence are being brought to court – a new experience in Myanmar. One of the reasons for this may be the nature and cultural practice of the people to forgive. Changing and improving political environment will allow the public to be more informed and articulate, and the health sector needs to undertake proactive measures to be accountable. Reform measures and initiatives in the health sector in this area need to be effective and timely, and also need to get around those who want to retain the status quo, if the health system is to perform well and be fair.

8 Conclusions

Based on guidelines provided by the Health Systems in Transition (HiT) template and given the available data, this report offers a clear description and honest assessment of the past and current health system of Myanmar. It also identifies successes and failures, and current and future challenges to stimulate further policy formulation. As this report was written soon after democratic reforms took place after the 2010 national election, most of the data in the report may serve as a baseline for future updates and assessment of the progresses made by successive democratic governments and more reforms that are expected to take place.

Among the various reforms in the past, during the first four decades after Independence in 1948 priority was given (to some extent) to improving equity in health and health care in Myanmar. This was reflected in policies attempting to narrow the gap in health and health care between rural and urban areas, and commitments made to the primary health care (PHC) approach. Detrimental effects on equity subsequently followed with meagre government budget (average 549.08 kyat per capita in 2011–2012), a majority of which was allocated to extending hospital-based secondary and tertiary care services at the expense of PHC (MOH, 2013).

The effect on equity in health care was further worsened with introduction of user charges under the banner of community cost sharing (CCS) and revolving drug fund (RDF) in the 1990s at the public health facilities, though measures for protecting the poor are said to be included but do not take place as intended – there is no clear budget line for subsidizing the poor, surplus from RDF sales are grossly inadequate to cross-subsidize free services for them. The government budget for essential medicines was reduced and household out-of-pocket (OOP) expenses became the major source of health financing, a major barrier for the poor to access essential services.

In spite of this situation, achievements in health status of Myanmar could be observed: life expectancy at birth has increased for both males and females; infant mortality rate (IMR) shows a declining trend; under-five mortality rate (U5MR) has decreased; and there are improvements in maternal mortality rate (MMR). On the other hand, Myanmar at the moment is: one of the countries with highest rates of OOP health expenditure; needing much more to be done for achieving and sustaining Millennium Development Goal (MDG) targets for 2015 and beyond; and being challenged with a triple burden of disease (BOD), with noncommunicable diseases (NCDs) contributing to approximately 40% of all deaths setting the scene for an NCD agenda for Myanmar. A focus on universal health coverage (UHC) could accelerate progress on the health-related MDGs, address the growing burden of NCDs, and move towards achieving equitable health coverage for all (Oxfam, 2013). With the new Constitution adopted in 2008, and a new government coming into power in 2011, the concepts of UHC and social protection are now back on the policy agenda.

The concept of equity has been included as part of the basic principles in successive Constitutions of the country. The Constitution of the Republic of the Union of Myanmar (2008) article 367 stipulates that, "every citizen shall, in accord with the health policy laid down by the Union, have the right to health care". Translating the health equity concept into practice is a real challenge requiring political and financial commitment.

In connection with the financial commitment, the Government of Myanmar should ensure that adequate proportions of national budgets are allocated to health; and look for more efficient, equitable and sustainable ways of raising revenue for health through tax reform. Public financing has to play a key role in Myanmar for funding UHC, taking the example of success stories in other low- and middle-income countries. Myanmar needs to explore how to generate more tax revenues for health while the contributory payroll tax financed social health insurance for the formal sector employees should be scaled up rapidly.

Ideas and policies to face the challenges, however well thought out and developed, will remain hollow and empty if they are not backed up by adequate funding. Social health insurance and government financing through tax revenue are among the options available for reducing household OOP with prepayment mechanisms. The fact that the economy is mainly informal in nature impedes the introduction of employment-based compulsory health insurance, and the need to overcome the technical and

managerial constraints for implementing it in the country, indicates that public financing remains a core option to be considered. The big question is: does Myanmar really have the political commitment to increase public spending for health, because the implications following the commitment go beyond health and extend into tax reform considering the need to increase fiscal space for health measured by the ratio of general government health expenditure to general government expenditure and fiscal space in general, measured by the ratio of tax to GDP. As the Joly Report on Taxation for the EU argues (Council of the EU, 2010):

"Mobilization of domestic resources for development through efficient and fair tax systems is crucial for sustainable growth, reducing aid dependency, poverty reduction, good governance and state building, including the provision of public services required to achieve the Millennium Development Goals. Efficient and fair tax systems are integral to democracy, promote state legitimacy and strengthen the social contract and accountability between government and citizens."

The recent increase in government spending for health is an encouraging development and the health sector is also required to ensure that more money coming in for health is spent in a way to get more health for money. The Ministry of Health (MOH) needs to develop well-devised interventions with prospects of value for money.

A lucid clear policy in providing financial-risk protection for the poor in the informal or self-employed sector should be introduced in parallel with introducing, by law, a comprehensive Social Security Scheme for the formal sector. Ample international experiences have shown that extending contributory social health security to cover the sheer size of informal sector is almost impossible. Deliberate policies on health financing sources for the poor and the informal sector have yet to be introduced, but are urgently needed.

An immediate action that the government may consider is to ensure free access to essential medicines to the whole population as a key entry point in moving closer to universal coverage; this is not only an ethical imperative (given the high level of poverty), but politically strategic. This could be an effective quick-win policy for the Government of Myanmar (Yates & Tangcharoensathien, unpublished information, 2012). A quick win would help get the health programme up and running with minimal cost and resources.

With growing expectation and eagerness of the people for better health and the need to show substantial gains to those providing financial support within a reasonable period, it may be tempting, with valid reasons, for the health sector to look for a so-called quick win. Sound judgment is essential at this juncture to strike a good balance between achieving a quick win and achieving and sustaining long-term objectives. This quick win needs to be integral to the main and long-term objectives (not a standalone or once-and-forget) and introduced as a starter or kick-off of the main programme in consideration. On the other hand, a quick win needs to be thoroughly differentiated from a quick fix.

There is no doubt that emphasis should be put on the social determinants of health as the most influential factors for people's health. There is also a need to ensure effective medical care services. People who fall ill and encounter medical emergencies will need medical assistance, so everyone should have equal access to the whole spectrum of preventive, curative and rehabilitative health services when needed, with financial risk protection being ensured.

Addressing health inequities is of paramount importance for Myanmar. Myanmar is in need of a major reform that will ensure that health services reach the poor and disadvantaged groups (minority groups in particular), and those in conflict-affected areas, through the effective functioning of township health systems. Equity considerations are to be given priority in the plans and policies, not only of health, but also of related sectors. From an equity perspective, movement along PHC concepts and practices is clearly a step in the right direction.

Strengthening RHCs, Sub-RHCs and station hospitals in rural areas rather than upgrading secondary and tertiary urban hospitals is a correct endeavour to improve equity in health care, as these close-to-client PHC services are better accessed by the vast majority poor rural people. RHC, Sub-RHC and station hospitals have been the only promising source of rural health services for hard-to-reach populations. These service-delivery infrastructures should be equitably distributed across the country and adequate supply of essential medicines and basic medical equipment made available on the basis of level of care needs of the localities. Improving technical efficiency of the station hospitals through appropriate corrective measures could save the lives of rural poor.

The township health system (including township hospital, station hospitals, maternal and child health units, RHC and Sub-RHC, as well as the associated

community health workers and auxiliary midwives in the villages) in Myanmar can be regarded as the means to achieve the end of an equitable, efficient and effective health system based on the principles of a PHC approach. The township health system is a strategic hub in translating national health policies into high-level and equitable health outcomes. A township hospital provides medical care at the second referral level. Under the leadership and management of a head of the township health department (previously known as township medical officer, TMO), basic health staff (BHS) deployed in RHCs and Sub-RHCs play key roles in providing PHC services for the rural population, where the majority of Myanmar's population resides. The practice of transferring TMOs every three years and the rapid turnover of BHS has negative effects on health system development in the locality. Policy considerations on these issues should be given importance in human resources for health management.

As the responsibility for PHC services for rural populations falls in large part on these BHS, further strengthening of their skills and enhancing their motivation need to be priority policy considerations. As the past two decades focused strongly on strengthening and expanding hospitals, rural health services need to be reviewed to develop a scientific evidence base for policy-making. This review should involve determining how the tasks could be distributed among rural health team members; what the determinants of productivity of these BHS are; and what skill mix is required for equitable coverage with essential (cost-effective) health services in rural areas.

Under decades of authoritarian rule, data sensitivity was a political culture. It has been suggested that it is now time for Myanmar to move towards improving the quality, accuracy, credibility, reliability, timeliness and availability of economic and social statistical data and information as a first step in building a modern developed nation (U Myint, 2010). Though the Health Management Information System (HMIS) is said to be able to generate adequate indicators of acceptable quality, the system needs to be further strengthened for generating evidence for policy-making in a transparent way, as well as the capacity to provide inequity profiles on a regular basis. The Multiple Indicator Cluster Survey (MICS) is one of the most useful evidence-based platforms for MCH policy development. Incorporation of services provided by the private sector into the HMIS should also be a priority.

As the research departments under the MOH and some NGOs are conducting health-related research, this large of body of research should

be exploited for evidence-based policy-making, closing down the so-called know–do gaps (e.g. Pablos-Mendez et al., 2005). For a country like Myanmar where poverty is deep and over 130 nationality groups reside (and with minorities inhabiting within the geographical areas of other minorities), the evidence used for policy-making should be able to address health inequities. Despite the existence of research departments for public-health research, there is minimal evaluative research incorporating cost-effectiveness analysis and there is inadequate capacity. Such studies could provide information for policy-making, this is an area where the health sector in Myanmar needs development, to sustain and institutionalize these capacities in the country.

Monitoring how equity has improved or regressed is a priority undertaking for sound policy-making in a poverty-stricken country like Myanmar. Myanmar should develop the Gini index, one indicator to serve this purpose. A major entry point would be strengthening national representative household surveys in collaboration with the Central Statistical Organization and other private and public agencies, for equity monitoring of impact of reforms on households. As disability adjusted life years (DALY) signifies Myanmar's priority disease profile and effectiveness of health interventions, DALY calculation, healthy life expectancy and disability-adjusted life expectancy estimates should be performed on a regular basis.

As formation of regional/state legislatures and governments according to the new 2008 Constitution raises expectations and a prospect for more decentralization, the central authority at MOH will have to assume the functions of setting rules and standards as included in the provisions of respective health laws. Regional/state and local health departments could then take monitoring and enforcement roles as well as service provision and management of a health workforce. Shaping this decentralization will be a challenge for future health-sector reforms. It is a salient fact that this decentralization would require massive capacity development at local level. In addition, it is important to pay attention again to the "minorities-within-minorities" issue. This will be a challenge for health governance of the regions and states from the perspectives of minority rights.

Improvements in access to safe water and adequate sanitation have been reported. However, diarrhoea remains one of the top causes of DALY. This indicates the need to further investigate the extent to which the drinking

water and sanitary facilities that people access are safe and sanitary, respectively. In big cities like Yangon and Mandalay, making improvements in the hygienic conditions of roadside food stalls through appropriate positive measures such as financial incentive and reward measures for safe food handling in compliance with standards and safety requirement, without risking the jobs of the food-stall owners, should be a priority policy consideration from a health perspective.

Although Myanmar has made serious efforts to monitor the situation of the risks inherent in tobacco smoking as well as essential intervention combating tobacco consumption (by adopting National Tobacco Control Law, 2006), it still needs to establish a surveillance system for NCD and actions to be taken for all determinants such as unhealthy diets, physical inactivity and high salt consumption. Many of the most important determinants of health lie in sectors other than health. Thus, the health sector needs to look into other policy fields like trade, agriculture, transport, environment, and rule of law. It is whole-of-government approaches and partnerships that enable health governance to take responsibility for the determinants of health. The MOH will need to be in the driver's seat to steer this approach.

In Myanmar, for many decades, health policy-making has been top-down with directives given by government, or generated by technocrats. Listening to the voices of the people, particularly the poor and marginalized, and reflecting their views and interests in policy-making never happened. This monopolistic policy process has to be changed from the point of view that a participatory approach to policy-making is necessary to render the process more democratic. Civil society organizations can play a great role as advocates for communities' issues of concern.

Generally, health professionals tend to be more versed with supply-side changes of delivering health services, with insufficient attention being paid to the demand side. It is to be noted that only when health-related actors – beneficiaries, civil society, private providers, development partners and professional organizations – are involved, will health governance be able to function. This kind of participation is referred to as the whole-of-society approach. Good governance means giving groups a voice in policies and services. Beneficiaries and civil society groups also need to be strengthened so that they are able to exercise demand in effective ways. These issues will remain key governance challenges for the health sector of Myanmar beyond 2015.

9 Appendices

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9.2 Useful web sites

http://www.moh.gov.mm

http://apps.who.int/globalatlas/default.asp

http://www.indexmundi.com/burma/gdp_composition_by_sector.html

http://en.wikipedia.org/wiki/List_of_countries_by_tax_revenue_as_percentage_of_GDP

http://www.who.int/nmh/countries/mmr_en

http://hdr.undp.org/en/countries/profiles/MMR

http://www.unicef.org/sowc2013/

http://3mdg.org/index.php/resources

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http://data.worldbank.org/indicator/SH.XPD.OOPC.ZS

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http://www.mda-myanmar.org

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http://www.mm.undp.org/

http://www.geographylwc.org.uk/A/AS/ASpopulation/DTM.htm

9.3 Health Systems in Transition methodology and production process

HiTs are produced by country experts in collaboration with an external editor and the Secretariat of the Asia Pacific Observatory based in the WHO Regional Office for the Western Pacific in Manila, the Philippines.

HiTs are based on a template developed by the European Observatory on Health Systems and Policies that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources and examples needed to compile reviews. While the template offers a comprehensive set of questions, it is intended to be used in a flexible way to allow authors and editors to adapt it to their particular national context. The template has been adapted for use in the Asia Pacific region and is available online at: http://www.wpro.who.int/asia_pacific_observatory/hits/template/en/

Authors draw on multiple data sources for the compilation of HiTs, ranging from national statistics, national and regional policy documents to published literature. Data are drawn from information collected by national statistical bureaux and health ministries. Furthermore, international data sources may be incorporated, such as the World Development Indicators of the World Bank.

In addition to the information and data provided by the country experts, WHO supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the Western Pacific Country Health Information Profiles (CHIPs) and the WHO Statistical Information System (WHOSIS). HiT authors are encouraged to discuss the data in the text in detail, including the standard figures prepared by the Observatory staff, especially if there are concerns about discrepancies between the data available from different sources.

The quality of HiTs is of real importance since they inform policy-making and meta-analysis. HiTs are subject to wide consultation throughout the writing and editing process, which involves multiple iterations. They are then subject to the following.

- A rigorous review process consisting of three stages. Initially, the text of the HiT is checked, reviewed and approved by the Asia Pacific Observatory Secretariat. It is then sent for review to at least three independent experts, and their comments and amendments are incorporated into the text, and modifications are made accordingly. The text is then submitted to the relevant ministry of health, or appropriate authority, and policy-makers within those bodies to check for factual errors.
- There are further efforts to ensure quality while the report is finalized that focus on copy-editing and proofreading.

- HiTs are disseminated (hard copies, electronic publication, translations and launches). The editor supports the authors throughout the production process and, in close consultation with the authors, ensures that all stages of the process are taken forward as effectively as possible.

9.4 About the authors

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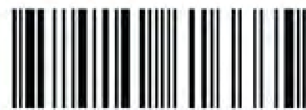
The Asia Pacific Observatory on Health Systems and Policies is a collaborative partnership which supports and promotes evidence-based health policy making in the Asia Pacific Region. Based in WHO's Regional Office for the Western Pacific it brings together governments, international agencies, foundations, civil society and the research community with the aim of linking systematic and scientific analysis of health systems in the Asia Pacific Region with the decision-makers who shape policy and practice.



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