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Bangladesh 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 policy initiatives in progress or development. HiTs examine approaches to the organization, financing and delivery of health services and the role of the main actors in health systems; describe the institutional framework, process, content and implementation of health and health-care policies; and highlight challenges and areas that require more in-depth analysis. HiT profiles seek to provide information to support policy-makers and analysts in the development of health systems. They are building blocks that 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, the 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 of reform strategies between policy-makers and analysts in different countries; and
- to assist other researchers with 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. Due to the lack of a uniform data source, quantitative data on health services is based on a number of different sources, including the World Health Organization (WHO), national statistical offices, the Organization for Economic Co-operation and Development (OECD) health data, the International Monetary Fund (IMF), the World Bank, and any other sources considered useful by the authors. Data collection methods and definitions sometimes vary, but typically are consistent within each separate series.

The HiT profiles can be used to inform policy-makers about experiences in other countries that may be relevant to their own national situation. These profiles 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@WHO.who.int. HiT profiles and HiT summaries for Asia Pacific countries are available on the Observatory's website at http://www.WHO.who.int/asia_pacific_observatory/en/.

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List of abbreviations

ADB	Asian Development Bank
ADP	Annual Development Programme
ADP	Annual Development Plan
ALOS	average length of stay [in hospitals]
APPs	alternative private providers
ARI	acute respiratory infection
BAMWSP	Bangladesh Arsenic-Mitigation Water Supply Project
BBS	Bangladesh Bureau of Statistics
BCC	behavioural change communication
BCDS	Bangladesh Chemist and Druggist Samity
BCG	Bacillus Calmette–Guérin
BCPS	Bangladesh College of Physicians and Surgeons
BDHS	Bangladesh Demographic and Health Survey
BDS	Bachelor of Dental Surgery
BHE	Bureau of Health Education
BHW	Bangladesh Health Watch
BIRDEM	Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders
BMA	Bangladesh Medical Association
BMDC	Bangladesh Medical and Dental Council
BMRC	Bangladesh Medical Research Council
BMMS	Bangladesh Maternal Health Services and Maternal Mortality Survey
BNC	Bangladesh Nursing Council
BNHA	Bangladesh National Health Accounts
BNP	Bangladesh Nationalist Party
BPMPA	Bangladesh Private Medical Practitioners Association
BPS	Bangladesh Pharmaceutical Society
BSMMU	Bangabandhu Sheikh Mujib Medical University
CAB	Consumers Association of Bangladesh
CBHC	community-based health care
CC	community clinic

CD	communicable disease
CDC	Communicable Disease Control
CDD	Control of Diarrhoeal Diseases
CED	chronic energy deficiency
CHCP	community health-care providers
CHT	Chittagong Hill Tracts
CHWs	Community Health Workers
CME	Centre for Medical Education
COPD	chronic obstructive pulmonary disease
CRHCCs	Comprehensive Reproductive Health-care Centres
CSBA	community-based skilled birth attendants
CSR	corporate social responsibility
CVD	cardiovascular diseases
DAAR	Disbursement for Accelerated Achievement of Results
DAM	Dhaka Ahsania Mission
DCM	Diploma in Community Medicine
DFP	Directorate of Family Planning
DG	Director General
DGDA	Directorate General of Drug Administration
DGFP	Directorate General of Family Planning
DGHS	Directorate General of Health Services
DH	district hospitals
DNS	Directorate of Nursing Services
DOTS	Directly Observed Treatment Strategy
DP	Development partners
DPA	Direct Project Aid
DPH	Diploma in Public Health
DPHE	Department of Public Health Engineering
DPT	Doctor of Physical Therapy
DSF	demand side financing
ECG	electrocardiogram
EDL	Essential Drugs List
EmOC	emergency obstetrical care
EPI	Expanded Programme on Immunization
ESD	essential service delivery
ESP	Essential Service Package
FCPS	Fellow of College of Physicians and Surgeons

FP	family planning
FSNSP	Food Security Nutritional Surveillance Programme
FWA	Family Welfare Assistants
FWV	Family Welfare Visitors
FY	fiscal year
GAVI	Global Alliance for Vaccines and Immunization
GDP	gross domestic product
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GHWA	Global Health Workforce Alliance
GNI	gross national income
HA	health assistants
HDI	Human Development Index
HIES	Household Income and Expenditure Survey
HIS	Health Information System
HPN	Health Population and Nutrition
HPNSP	Health, Population and Nutrition Sector Programme
HPNSDP	Health, Population and Nutrition Sector Development Programme
HPSP	Health and Population Sector Programme
HPSS	Health and Population Sector Strategy
HRH	Human Resources for Health
icddr,b	International Center for Diarrhoeal Disease Research, Bangladesh
ICMH	Institute for Child and Maternal Health
IDU	injecting drug users
IEDCR	Institute of Epidemiology, Disease Control and Research
IEM	Information, Education and Motivation
ILO	International Labor Organization
IMCI	Integrated Management of Childhood Illness
IMR	infant mortality rate
IPGMR	Institute of Postgraduate Medicine and Research
IPH	Institute of Public Health
IPHN	Institute of Public Health and Nutrition
LGED	Local Government Engineering Department
LGIs	local government institutions
MBBS	Bachelor of Medicine and Bachelor of Surgery
MBF	Ministry Budget Framework

MCH	maternal and child health
MCPS	Member of College of Physicians and Surgeons
MCWC	Maternal & Child Welfare Centers
MDG	Millennium Development Goals
MDRTB	Multidrug-Resistant Tuberculosis
MI	myocardial infarction
MIS	management information system
MMED	Master of Medicine
MMR	maternal mortality ratio
MOCHT	Ministry of Chittagong Hill Tracts
MOF	Ministry of Finance
MOHFW	Ministry of Health and Family Welfare
MOLGRDC	Ministry of Local Government, Rural Development and Cooperatives
MOWCA	Ministry of Women and Children Affairs
MP	Members of Parliament
MPH	Master of Public Health
MPhil	Master of Philosophy
MS	micronutrient supplementation
MTM	Master of Transfusion Medicine
MTMF	Medium Term Macroeconomic Framework
NASP	National AIDS and STD Programme
NBR	National Board of Revenue
NCD	noncommunicable diseases
NDP	National Drug Policy
NGO	nongovernmental organization
NHA	National Health Accounts
NHP	National Health Policy
NICRH	National Institute of Cancer Research and Hospital
NICVD&H	National Institute of Cardiovascular Disease and Hospital
NIKDU	National Institute for Kidney Diseases and Urology
NIMH	National Institute of Mental Health
NIPORT	National Institute of Population Research and Training
NIPSOM	National Institute of Preventive and Social Medicine
NITOR	National Institute of Traumatology and Orthopedic Rehabilitation
NLEP	National Leprosy Elimination Program

NNMR	Neonatal mortality rate
NNP	National Nutrition Programme
NTP	National Tuberculosis Control Program
OOP	out-of-pocket
OOPP	out-of-pocket payment
OP	operational plans
OPD	outpatient department
PER	public expenditure reviews
PHC	primary health care
PHCCs	Primary Health-care Centres
PPP	purchasing power parity
PSC	Public Service Commission
RDT	Rapid Diagnostic Testing
RDU	Research and Development Unit
RH	reproductive health
RPA	Reimbursable Project Aid
SES	socioeconomic status
SIP	Strategic Investment Plan
SMC	Social Marketing Company
SMF	State Medical Faculty
SWAp	Sector Wide Approach
TBA	traditional birth attendants
TFR	total fertility rate
THE	total health expenditure
TIB	Transparency International Bangladesh
TTBA	trained traditional birth attendants
U5MR	Under-five mortality rate
UHC	Upazila Health Complex
UHFWC	Union Health and Family Welfare Centres
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund
UPHCPII	2nd Urban Primary Health-care Programme
UPHCSDP	Urban Primary Health-care Services Delivery Project
USAID	United States Agency for International Development
VAT	value-added tax
WHO	World Health Organization
YLL	years of life lost

Abstract

Over 43 years after independence in 1971 the health system of Bangladesh has gone through a number of reforms and established an extensive health infrastructure in the public and private sectors. Bangladesh has achieved impressive improvements in population health status by achieving MDG 4 by reducing child death before the 2015 target, and rapidly improving on other key indicators including maternal death, immunization coverage, and survival from some infectious diseases including malaria, tuberculosis, and diarrhoea. However, some challenges for the health system remain critical. First, lack of coordination across two different ministries for implementing primary health-care service delivery in rural and urban areas; second, critical shortage of trained health providers with appropriate skill-mix in the public sector and widespread increase in unregulated informal providers for an alternative source of care; third, low annual allocation to health in the government budget and high out-of-pocket payments by households; and finally, inequitable access to health services between urban and rural areas including variable health financing mechanisms, which have slowed achieving universal health coverage. Mobilizing the private sector to increase the production of health work force and bringing informal health-care providers within the mainstream health system may facilitate reducing the gap in human resources in a relatively shorter time period. There is an urgent need for more investment of public funds and stronger local accountability to improve the quality of public services, and monitoring the quality of care provided by the private and informal sectors.

Executive Summary

Bangladesh is one of the most densely populated countries in the world. It is a unitary state and parliamentary democracy. Health and education levels are relatively low, although they have improved recently as poverty levels have decreased. Most Bangladeshis continue to live by subsistence farming in rural villages. Bangladesh faces a number of major challenges, including poverty, corruption, overpopulation and vulnerability to climate change. However, it has been lauded by the international community for its progress on the Human Development Index. Bangladesh has made more notable gains in a number of indicators than some of its neighbours with higher per capita income, such as India and Pakistan.

The joint donor funded Health, Population, and Nutrition Sector Development Programme (HPNSDP) has contributed to significant improvement in a number of health indicators including reduction in under-five mortality, immunization coverage, maternal mortality and total fertility. The country has improved women's education, and economic conditions and life expectancy. Despite current economic growth, poverty and income inequality remain persistent challenges in Bangladesh. Simultaneous with the demographic transition, Bangladesh is undergoing the health transition and manifesting the double burden of disease attributable to the emergence of noncommunicable diseases.

The health system of Bangladesh is a pluralistic system with four key actors that define the structure and function of the system: government, private sector, nongovernmental organizations (NGOs) and donor agencies. The Government or public sector is the first key actor which by constitution is responsible not only for policy and regulation but for provision of comprehensive health services, including financing and employment of health staff. The Ministry of Health and Family Welfare, through the two Directorates General of Health Services (DGHS) and Family Planning (DGFP), manages a dual system of general health and family planning services through district hospitals, Upazila Health Complexes (with 10 to 50 beds) at subdistrict level, Union Health and

Family Welfare Centres at union level, and community clinics at ward level. In addition, the Ministry of Local Government, Rural Development and Cooperatives manages the provision of urban primary care services. Quality of services at these facilities, however, is quite low due to insufficient allocation of resources, institutional limitations and absenteeism or negligence of providers.

Since 1976, to complement the Government's limited capacity and resources to provide basic health services, the private sector and NGOs have established a network of facilities to provide health and family planning services. The private sector consists of the formal sector which provides both western and traditional (Unani and Ayurvedic) services through a range of facilities from hospitals to clinics, laboratories and drug stores; and the informal sector, which consists largely of untrained providers of western, homeopathic and traditional (kobiraj) medicine. However, private services are poorly regulated. The formal sector is concentrated in urban areas, and the informal sector is the principal provider in rural areas.

In response to the low quality of public services and their inability to reach the entire population, particularly the poor, a vibrant and large NGO sector has emerged as "third sector" of health providers in Bangladesh. The role of NGOs is growing as donors are channeling significant and increasing amounts of funding directly to them. In 2007, 9% of total health expenditure was managed by NGOs, up from 6% in 1997. As a response to both external and internal pressures, partnerships between the Government and NGOs in the areas of financing, planning, service delivery, capacity building, and monitoring and evaluation have produced some health gains.

The Bangladesh public health system remains highly centralized, with planning undertaken by the Ministry of Health and Family Welfare and little authority delegated to local levels. The Health Information System suffers from the bifurcation of the Ministry into DGHS and DGFP, with separate and distinct reporting systems for each Directorate General. While there exist a number of acts and ordinances to regulate the health system, including regulation of different types of providers, practice facilities and NGOs, many of these legal instruments date from several decades ago. Separate councils for the registration and licensing of medical practitioners, dentists and nurses have been established, but their authority to investigate or discipline providers is weak. A number

of initiatives have been undertaken through the joint Government-donor pooled programmes to encourage and support community empowerment and accountability, with limited success. However, a number of NGOs remain active in public reporting on government handling of the health sector.

According to the latest Bangladesh National Health Accounts, Bangladesh spends US$ 2.3 billion on health or US$ 16.20 per person per year, of which 64% comes through out-of-pocket payments. While, according to WHO estimates, Bangladesh currently spends US$ 26.60 per person on health per year. Public funding for health is the main prepayment mechanism with scope for risk pooling, which constitutes 26% of total health expenditure. The other major funding source is international development partners. Chronic underspending of the Ministry of Health and Family Welfare's budget indicates inefficiency in utilization of resources as observed in the public sector review of the health sector.

Except for through the public budget, the existing funding mechanisms of Bangladesh only slightly address (0.2% of total health expenditure) any prepayment method, such as health insurance, either by private or community initiatives. Several community initiatives for ensuring low-cost services exist, while a number of private insurance companies offer individual and group insurance to private persons and corporate clients. These health insurance initiatives cover a very small share of the total population.

The statutory health system, in principle, covers all citizens with a range of services. However, many sick people every year are left untreated in practice. In response to insufficient and unsatisfactory services in the public sector, private initiatives have been taken since the 1980s. The cost of services in private health facilities is unaffordable to many. Bangladesh, therefore, still needs to travel a long way to reach universal health coverage.

Bangladesh has an extensive PHC infrastructure in the public sector but facilities are not adequately provided with human and other resources such as drugs, instruments and supplies. During 2007–2013, the number of both hospitals and total number of beds in the public sector has steadily increased. The number of beds in PHC facilities at upazila level and below reached 18 880 across 472 facilities in 2013, and 27 053 in 126 facilities at secondary and tertiary level. In the private sector, there were 2983 registered hospital and clinics, with 45 485 beds. Taken together,

there is now one bed for every 1699 population, which is still inadequate. Meanwhile, to bring health facilities closer to the doorstep of the population, there is a community clinic for every 6000 population (n=12 527) which provides primary health care services.

In the public sector, the Central Medical Store is responsible for procurement and supply of medical and surgical equipment and products, including drugs. The public sector health facilities in Bangladesh lack medical equipment and instruments. Many of the lower-level facilities lack basic instruments like clocks and height-measuring scales. Supply of drugs is also inadequate and the supply chain is frequently disrupted. On the other hand, the private sector, especially the recently emerging high-cost hospitals and clinics in the urban areas, have all the major state-of-the-art diagnostic equipment and facilities.

Bangladesh is characterized by "shortage, inappropriate skill mix and inequitable distribution" of its health workforce. At present there are 64 434 registered doctors, 6034 dentists, 30 516 nurses, and 27 000 nurse-midwives in the country (cumulative figures unadjusted for attrition due to deaths, retirements, migration, change of profession, or inactivity). In addition, the health workforce is skewed towards doctors with a ratio of doctors to nurses to technologists of 1:0.4:0.24, in stark contrast to the WHO recommended ratio of 1:3:5. The involvement of the health workforce in the private sector has increased over the years, as revealed by an estimated 62% of the medical doctors working in the private sector in 2013. The formal health workforce (doctors, dentists, nurses) is mostly concentrated in the urban areas, with variation among regions. Retention and absenteeism are two major problems in rural areas.

There is a large cadre of health care providers in the country in the informal sector. This comprises semi-qualified allopathic providers (e.g. community health workers, medical assistants, trained midwives), unqualified allopathic providers (drug shop retailers, rural doctors, etc.), traditional healers (practitioners of Ayurvedic, Unani and homeopathic medicine) and faith healers. They are not a part of the mainstream health system but a major health care provider for the poor rural population, especially in remote rural and hard-to-reach areas.

Health services are delivered by both the public and non-public sector in Bangladesh. In the public sector, the Ministry of Health and Family Welfare is the main agency providing public health services, including health promotion and preventive services. The public health services

include programmes for the control of tuberculosis, now covering all upazilas with the Directly Observed Treatment Strategy (DOTS); the National Leprosy Elimination Programme, which reduced prevalence rates to 0.24/10 000 by 2010; the Malaria and Parasitic Disease Control Programme which targets approximately 11 million people in high risk areas; Kala-azar (visceral leishmaniasis) control which has now expanded to cover 27 districts; and the HIV/AIDS programme which has managed to keep the incidence of HIV below 1% among high-risk populations. These programmes are supported by National Public Health Institutes, while health promotion is organized by the dedicated sections of DGHS and DGFP.

Primary and ambulatory care is delivered through the public network of facilities, particularly through the community-based health care programme delivered by the community clinics; and by the private formal and informal and NGO providers. In urban areas, patients tend to use the outpatient units of the major urban hospitals for ambulatory care. Secondary and inpatient care is provided through public facilities at upazila, district, medical college and specialist urban hospitals, as well as private hospitals mainly in urban areas. There is no structured referral system, so that patients with minor ailments may also present directly to hospitals for treatment.

Due to epidemiological and demographic change, Bangladesh is facing the double burden of communicable and noncommunicable disease including the emergence and re-emergence of other diseases. Moreover, with recent incidents in garments factories, the focus is shifting towards the occupational health and safety of workers in the ready-made garment sector. The public health programmes need to be revisited and redesigned to effectively address emerging challenges.

Bangladesh has made significant progress in the development of its domestic pharmaceutical sector, with the introduction of the National Drug Policy (NDP) in 1982. Domestic manufacturers now provide 75% of total drug sales, and are expanding to develop an export market. The Central Medical Store procures and distributes drugs to public sector hospitals and facilities where they are provided free of charge. However, outside the public sector, there is a chaotic market of some 64 000 licensed pharmacies and 70 000 unlicensed drug stores, selling all types of medicines without requiring prescriptions. Polypharmacy and dispensing by the prescriber is also common in the private sector and constrains the rational use of medicines.

Recent health reforms in Bangladesh commenced with the Health and Population Sector Strategy, developed by the government and donors in 1997. This strategy advocated a number of institutional and governance reforms, notably the shift from a project basis towards a coordinated sectoral programme. These reforms were then implemented through a series of five year sectoral programmes, commencing with the Health and Population Sector Programme (HPSP) of 1998–2003. Key reforms included: pooling of donor funds in a Sector Wide Approach (SWAp), provision of selected primary health care services under an Essential Services Package to the poor, introduction of one-stop services through community clinics, and unification as well as bifurcation of health and family planning wings of the Ministry of Health and Family Welfare. Under the latest five-year programme, the Health, Population and Nutrition Sector Development Programme (HNPSDP), health sector activities have been grouped into 38 operational plans implemented by 38 Line Directors. While the SWAp has improved coordination and alignment among multiple donor projects, there remains fragmentation within the vertical programmes of the Ministry, continuation of a number of vertical programmes funded outside the SWAp, and a lack of a comprehensive ministerial plan.

Other key reforms include: the establishment of community clinics to replace domiciliary visits; their withdrawal when coverage of major programmes fell, and their reinstatement together with domiciliary programmes by the new Government; unification of the DGHS and DGFP in 2000, and then subsequent re-separation in the face of poor performance by DGFP officers; attempts at decentralization of health services to the upazila level, although with limited delegated authority; and the recent maternal health voucher scheme.

Recently, in recognition that the high levels of out-of-pocket expenditure form a barrier to utilization, a Health Care Financing Strategy (2012–2032) has been developed to provide direction in achieving universal health coverage. The strategy puts emphasis on prepayment mechanisms with scope for risk-pooling, and separate mechanisms are suggested for people in different economic sectors (formal sector, informal sector and people in poverty). Taxes, social health insurance contributions and community-based health insurance schemes have been recommended. Over its 20-year implementation period, the strategy aims at reduction of out-of-pocket payments from 64% to 32% of total health expenditure, increase in government expenditure from 26% to 30%, increase in social

protection from less than 1% to 32% and reduced dependence on external funds from 8% to 5%.

The stated objectives in the National Health Policy of 2011 are: (i) strengthening primary health and emergency care for all, (ii) expanding the availability of client-centred, equity-focused and high quality health care services, and (iii) motivating people to seek care based on rights for health. While theoretically all Bangladeshi citizens have the right to receive health care according to need, low government investment in public facilities, some user charges and payments for medicines, and high use of the private sector have resulted in significant inequity in access to services. Existing reforms such as community clinics and maternal care vouchers provide access to only limited services, while the proposal for health insurance for formal sector workers will not address the majority of those engaged in the informal and rural sector. In relation to user experience and equity of access, the general public perception of the public health system is poor, with complaints of long waiting times, absenteeism, poor behaviour of providers, and exclusion of some marginalized groups. Access to care demonstrates much higher rates of utilization of public and private services by the wealthier quintiles, but there has been some improvement in equity in access over the last decade.

Though there have been commendable gains in health outcomes recently, grossly inequity remains. For example, differential levels of early childhood mortality were observed according to socioeconomic status (SES) (Demographic 2011). Neonatal mortality, infant mortality and under-five mortality in the highest wealth quintile households (23, 29, 37 respectively per 1000 live births) were much lower than among the lowest quintile households (34, 50, 64 respectively per 1000 live births). Similarly, vaccination coverage (BCG, measles and three doses each of DPT and polio) among children from highest quintile households was 93% compared to 77% among lowest quintile households.

The same trend in SES differentials was observed in the case of child nutritional status (Demographic 2011). Children of lowest quintile households were proportionately more stunted (54% compared to 26% for highest quintile households), underweight (50% compared to 21% for highest quintile households) and wasted (17% compared to 12% for highest quintile households). 51% and 64% of the pregnant women from highest wealth quintile households were assisted during delivery by a

qualified doctor or a medically-trained provider respectively, compared to only 5% and 11% respectively in case of lowest wealth quintile households (Demographic 2011). Only 10% of pregnant women from lowest quintile households delivered in a health facility compared to 60% for the other groups of women. The percentage of C-section deliveries was 3% and 41% respectively for the lowest and highest quintile households.

Despite many challenges, population health outcomes have shown marked improvement, with falls in maternal, infant and under-five mortality rates, and significant reductions in total fertility rate. In comparison with MDG targets, infant and under-five mortality and total fertility are on track to reach the 2015 targets; maternal mortality and prevalence of underweight are not on track to reach targets despite significant reductions, while targets for HIV, malaria and TB are still potentially achievable. These outcomes have been achieved by improvements in coverage with key interventions, such as delivery in a health facility, childhood immunization, and management of diarrhoea with oral rehydration salts, and treatment success rates for TB. However, the provision and coverage of services for the growing burden of noncommunicable diseases is only just beginning. Quality of care in both public and private services is poor, with little assessment of the quality of provider care, low levels of professional knowledge, and poor application.

Bangladesh has set an extraordinary example of gaining good health at a very low cost and has been proposed as a role model for other developing countries in the region. While the gains in health have been credited to the Ministry of Health and Family Welfare, the progress of other ministries relevant to public health catalyzed the success of the overall health agenda of the Government. It is a paradox that despite the lack of accountability of the Government to the public regarding health and little coordination of the health ministry with other sectors, a number of vertical health programmes, particularly in preventive care (such as immunization, control of diarrhoea, TB and other emerging infectious diseases) have been sustained successfully over a long period, impacting positively on health outcomes. Mobilizing the huge informal health cadres outside the official allopathic system would be a useful strategy for strengthening human resources in health, especially in the remote and hard-to-reach areas of the country and achieving universal health coverage.

1 Introduction

Chapter summary

Bangladesh, officially the People's Republic of Bangladesh, is a country in South Asia and one of the most densely populated countries in the world. It is a unitary state and parliamentary democracy. Health and education levels are relatively low, although they have improved recently as poverty levels have decreased. Most Bangladeshis continue to live by subsistence farming in rural villages. Bangladesh faces a number of major challenges, including poverty, corruption, overpopulation and vulnerability to climate change. However, it has been noted by the international community for its progress on the Human Development Index. Bangladesh has made more notable gains in a number of indicators than some neighboring countries with higher per capita income. The Health, Population, and Nutrition Sector Development Programme (HPNSDP) has contributed to significant improvement in a number of health indicators, including a reduction in under-five mortality, immunization coverage, maternal mortality and total fertility. The country has improved women's education, economic conditions and life expectancy. Despite current economic growth, poverty and income inequality remain persistent challenges in Bangladesh. Simultaneous with the demographic transition, Bangladesh is also undergoing a health transition and manifesting the double burden of disease with the emergence of noncommunicable diseases.

1.1 Geography and demography

Bangladesh is bordered by the Bay of Bengal in the South, Myanmar in the south-east, and India to the east, north and west. The majority of the territory is a low-lying delta plain traversed by an extensive network of large and small rivers vital to the socioeconomic life of the nation, with hilly areas scattered in the north and east (Figure 1.1). Bangladesh is known as the worst victim of the direct and indirect effects of global climate change (DGHS, 2012). The country faces a number of natural disasters on a regular basis,chiefly floods, cyclones and tidal bores (Anwar, Islam et al., 2012), which have slowed down poverty reduction progress (World Bank, 2010).

Figure 1.1 Map of Bangladesh

Source: United Nations Cartographic Section (http://http://www.un.org/Depts/Cartographic/map/profile/banglade.pdf)

Bangladesh has a population of 151 million, occupying 147 570 square kilometres (World Bank, 2013). The population density of 1161 people per square kilometre is one of the highest in the world (Table 1.1) (World Bank, 2013). About 90% of the population are Muslims, 9% are Hindus and 1% are Christians, Buddhists and other faiths (DGHS, 2012).

Bangladesh has experienced a remarkable demographic transition, with a rapid decline in the fertility rate from 6.9 births per woman in the early 1970s to 2.3 in 2010 (World Bank, 2013) and a population growth rate of only 1.37% between the 1991 and 2011 censuses (Bangladesh Bureau of Statistics (BBS) and Ministry of Planning Statistics and Informatics Division (SID) , 2012). In addition, Bangladesh is experiencing rapid urban growth, with an urbanization rate of 3.5% annually (Banks, Roy et al., 2011), which has increased the proportion of the population living in cities and towns from 3.6% in the 1970s to 14.4%in 2010 (Table 1.1) (UPPR, 2012; World Bank, 2013).

Administratively, the country is divided into seven divisions, 64 districts (zila) and 545 subdistricts (upazila) (NIPORT, Mitra and Associates et al., 2013). The seven administrative divisions are, in order of population size: Dhaka, Chittagong, Rajshahi, Rangpur, Khulna, Sylhet and Barisal. Each rural area in the upazila is divided into union parishads, and mouzas within a union parishad; an urban area in an upazila is divided into wards, and into mohallas within a ward. These divisions allow the country as a whole to be easily separated into rural and urban areas. There are no elected officials at the divisional or district levels, and the administration is composed only of government officials. Direct elections are held for each union (or ward), electing a chairperson and a number of members.

Table 1.1 Trends in population/demographic indicators, selected years

Indicator	1970	1980	1990	2000	2010
Total population (million)	66 309	82 498	107 386	132 383	151 125
Population aged 0–14 (% of total)	44.7	44.4	42.1	37	31.7
Population aged 15–64 (% of total)	51.9	52	54.2	59	63.7
Population aged 65 plus (% of total)	3.5	3.6	3.7	4.1	4.6
Population growth (%/year)	2.4	2.8	2.5	1.8	1.1
Population density (people/sq.km)	509.4	633.8	825	1017	1161
Fertility rate (TFR)	6.9	6.4	4.6	3.1	2.3
Crude birth rate / 1000	47	43.1	35.1	27	20.9
Crude death rate /1000	19.2	13.8	10.1	7.2	5.9
Age dependency ratio (% of working age population)	92.9	92.3	84.5	69.6	56.9
Proportion population urban (% of total population)	3.6	6.3	9.0	11.2	14.4

Source: http://publications.worldbank.org/WDI/indicators

1.2 Socioeconomic context

The Liberation War which led to the creation of the independent state of Bangladesh in 1971 destroyed about a fifth of Bangladesh's economy, and postwar dislocations left the country on a slow growth trajectory for the better part of two decades. However, the economy accelerated dramatically from 1990, with gross national income (GNI) increasing from US$ 100 per capitain 1973 to US$ 700 in 2010. The economy as measured by gross domestic product (GDP) has grown at a remarkable annual rate of 6% between 1990 and 2010 (Table 1.2) (World Bank, 2013). More than half of the GDP is generated by the service sector

(Table 1.2) (World Bank, 2013), whereas the contribution of agriculture to Bangladesh's GDP has been decreasing over time (World Bank, 2013) even though it still accommodates the major rural labor force (DGHS, 2012). The other major factors fuelling continued economic growth have been expansion in the export of ready-made garments, and remittances sent back to Bangladesh from migrant laborers who work primarily in unskilled positions in Malaysia and the Middle East (World Bank, 2010). Garment exports totalling $12.3 billion and remittances from overseas Bangladeshis totalling $9.7 billion accounted for almost 25% of GDP in FY2009 (World Bank, 2010). In addition, the expanding garment industry has improved women's participation in the formal labor market in Bangladesh (UNICEF, 2010).

Despite current economic growth, poverty and income inequality remain persistent challenges in Bangladesh (Chowdhury, Bhuiya et al., 2013). Regardless of modest improvements in the Human Development Index (HDI), in 2012 the United Nations Development Programme (UNDP) ranked Bangladesh as 146th of 187 countries in terms of HDI, placing it among the"low human development"countries. It is estimated that 31.5% of the population still live below the national poverty line (UNDP, 2013). Even though poverty rates have demonstrated steady improvement, with an average decline of 1.74 points per year during the past decade, the gap in the speed of poverty reduction between urban and rural areas has widened over the last five years (World Bank, 2013). This happens apart from the increase in rural real per capita consumption, and has kept extreme poverty as a rural phenomenon (World Bank, 2013). In terms of inequality of income distribution as measured by the GINI index of real per capita consumption, inequality remained stagnant over the decade at the national level (Table 1.2). Nevertheless, Bangladesh has demonstrated a remarkably steady improvement in poverty rates, with a 26% decline in the population in poverty in the past ten years (World Bank, 2013).

The adult literacy rate in Bangladesh has increased from 29.2% in 1981 to 57.7% in 2011, and surpasses some of its neighbors such as Nepal (57.37%) and Pakistan (54.89%) but remains behind Sri Lanka (91.18%) and Myanmar (92.68%) (World Bank, 2013). The expansion of female secondary schooling since the 1990s has significantly reduced gender disparity, especially in rural areas (General Economics Division (GED) Bangladesh Planning Commission, June 2013). Adult female literacy also increased considerably in the past two decades, from about 26% in 1991 to around 53% in 2011 (World Bank, 2013).

Table 1.2 Macroeconomic indicators, 1970–2010, selected years

Indicators	1970	1980	1990	2000	2010
GDP (in billions, current US$)	8.9	18	30	47	100
GDP, PPP (current international $)	-	26	57	111	246
GDP per capita, PPP (constant 2005	-	-	-	-	-
international $)	-	661	732	949	1464
GDP growth (annual %)	5.6	0.8	5.9	5.9	6.1
Agriculture, value added (% of GDP)	-	32	30	26	19
Industry, value added (% of GDP)	-	21	21	25	28
Services, etc., value added (% of GDP)	-	48	48	49	53
Cash surplus/deficit (% of GDP)	-	-	-	-	-1
GINI index	-	-	-	33	32
Real interest rate (%)	-	-5	9	13	6

Source: http://publications.worldbank.org/WDI/indicators

1.3 Political context

Bangladesh is a unitary state and parliamentary democracy . The Government of the People's Republic of Bangladesh comprises three basic elements: the legislature, the judiciary and the executive (World Bank 2010). The legislative power of the Republic is vested in the single-house parliament known as the Jatiyo Sangshad, which consists of 300 Members of Parliament. They are chosen in a national election in which all citizens aged 18 or over can vote every five years. The President is the head of state but real power is held by the Prime Minister, who is the head of government (World Bank, 2010).

After a period of military and quasi-military rule from 1975 to 1990, mass agitation resulted in the restoration of democratically-elected governments (World Bank, 2010). Consecutive failures in conducting general elections have resulted in disruption of the democratic process and the appearance of the army in national politics (Paul S and Goel PR, 2010). Successful public administration in Bangladesh has also been hampered by these situations (Paul S and Goel PR, 2010).

In 1991, Bangladesh instituted a unique Caretaker Government system through the thirteenth amendment to the Constitution, which gave power to an elected government to transfer power to an unelected non-partisan Caretaker Government to oversee new parliamentary elections upon completion of its term. The system lasted for 15 years and four elections

were held under it, in 1991, 1996, 2001 and 2008. However, in 2011 the incumbent government abolished the caretaker form of government through the fifteenth amendment to the Constitution (Riaz, 2013). The last election was held in 2014 under the Election Commission, and the governing party won 232 of the 300 seats, including 153 seats elected unopposed as a result of an election boycott by the alliance of the opposition parties (Barry E, 2014).

Responsibility for implementing Government policies and programmes is vested in Bangladesh's civil service, a corps of trained administrators who form the most influential group of civil servants, and the district level is key in policy implementation (Balabanova D, McKee M et al., 2011). The process of decentralization in Bangladesh started in 1959, when Bangladesh was known as East Pakistan, with the introduction of a four-tier local government system (Paul S and Goel PR, 2010). After independence, several major events took place that reformed the local government structure, including promulgation of the Local Government Ordinance 1976; the introduction of a new local government ordinance in 1982; the appointment of the Local Government Structure Review Commission in 1991; the formation of the Local Government Commission in 1996; and a change in the local government structure in 2001 (Sharmin, Haque et al., 2011). Nevertheless, devolution of political power to the local level is incomplete (Paul S and Goel PR, 2010). Central government retains a high degree of control in terms of power, functions and jurisdiction, which limits the autonomy and efficiency of local government (Sharmin, Haque et al., 2011). In addition, budgetary allocation for the local government institutions is inadequate, which leads to rural poverty and widening economic disparity between rural and urban areas (Sharmin, Haque et al., 2011).

1.4 Health status

During the past 40 years Bangladesh has made remarkable improvements in life expectancy, child health (Table 1.3), literacy and disaster preparedness (Balabanova D, McKee M et al., 2011). Bangladesh has made more notable gains in a number of indicators than some of its neighboring countries which have higher per capita income. For instance, GDP per capita in Bangladesh ($1777) was half that of India ($3650) in 2011, and lower than that Pakistan ($2567), yet average life expectancy, percentage of children immunized against diphtheria and measles, and the literacy rate for young women were higher in Bangladesh than in

Pakistan and in India (Baxter, 2003). In the two decades between 1990 and 2010, under-five mortality has fallen by more than 60%, while infant mortality and neonatal mortality have declined by around half (Table 1.3). The under-five mortality rate (46 deaths per 1000) in Bangladesh is significantly lower than India (41 per 1000) and Pakistan (86 per 1000). (http://data.worldbank.org/indicator/SH.DYN.MORT).

Table 1.3 Mortality and health indicators

Indicator	1970	1980	1990	2000	2010
Life expectancy at birth, total (years)	42	55	59	65	69
Life expectancy at birth, female (years)	44	54	59	65	69
Life expectancy at birth, male (years)	40	56	60	65	68
Mortality rate, adult, female (per 1000 female adults)	-	-	-	171	137
Mortality rate, adult, male (per 1000 male adults)	-	-	-	179	163
Adolescent fertility rate (per 1000 women ages 15–19)	-	195.38	163.68	116.63	83.83
Infant mortality rate (per 1000 live births) (Kassebaum, 2014)	-	133	99.5	64.2	37.5
Neonatal mortality rate (per 1000 live births)	-	-	54.1	40.7	27
Under-5 mortality rate (per 1000 live births)	-	197.8	143.6	87.7	47.2
Maternal mortality ratio (per 100 000 live births) (Kassebaum, 2014)	-	-	551.9	375	300

Source: http://publications.worldbank.org/WDI/indicators

Estimates of healthy life expectancy (HALE) vary between those of the WHO GBD group and the IHME group (Table 1.4). Both sources demonstrate an increase in HALE between 1990 and 2010 / 2012, although the IHME calculations suggest a more modest increase than the WHO.

The difference between crude life expectancy and HALE illustrates the growing significance of years lived with disability as life expectancy increases.

Table 1.4 Healthy Life Expectancy (HALE) different sources

	1990	2000	2010	2012
HALE 1				
Male	-	55	-	60
Female		55	-	61
Total	-	55	-	60
HALE 2				
Male	48.4	-	56.5	-
Female	49.5	-	58.9	-

Source: WHO Global Health Observatory http://apps.who.int/gho/data/node.main.3?lang=en
GBD Healthy life expectancy http://www.healthmetricsandevaluation.org/gbd/publications/healthy-life-expectancy-187-countries-1990–2010-systematic-analysis-global-bu

1.4.1 Causes of death

With the decline in birth rate and death rate and an increase in the proportion of mortality due to noncommunicable disease, Bangladesh has entered the epidemiological transition. Table 1.5 illustrates the change in leading causes of mortality in Bangladesh in twenty years between 1990 and 2010.

Mortality from communicable, maternal, neonatal and nutritional disorders fell dramatically from 583/100 000 in 1990 to 178 /100 000 in 2010, with similar falls in males and females. This fall was principally the result of falls in childhood infectious diseases, together with falls in maternal mortality and nutritional deficiencies.

Mortality rates from noncommunicable diseases as a group remained steady at around 360 deaths /100 000 population, although this masks a rise in mortality among males, and a fall in mortality among females. However death rates from cardiovascular and circulatory diseases, including ischaemic heart disease rose, particularly among males. Death rates from cancers and other NCDs remained fairly steady, with rises in males balanced by falls in females.

Mortality rates from injuries also fell significantly during this period, in both males and females.

Table 1.5 All age mortality rates for main causes of death, 1990–2010

All age mortality rates/100 000	1990			2010		
Causes of death	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Communicable, maternal, neonatal, and nutritional disorders	612.8	551.0	582.8	197.4	157.9	177.9
Diarrhoea, lower respiratory infections, meningitis, and other common infectious diseases	280.7	255.1	268.3	74.0	56.3	65.2
Tuberculosis	39.5	19.2	29.6	27.0	8.7	18.0
HIV/AIDS				0.2	0.1	0.1
Maternal disorders		33.1			9.8	
Nutritional deficiencies	37.2	49.8	43.3	7.9	13.4	10.6
Noncommunicable diseases	381.5	334.1	358.5	401.5	312.2	357.5
Cardiovascular and circulatory diseases	65.6	61.0	63.4	112.8	75.1	94.2
Neoplasms	72.4	80.0	76.1	87.6	74.8	81.3
Colon and rectum cancers	2.0	1.6	1.8	2.0	1.7	1.9
Trachea, bronchus, and lung cancers	9.0	3.2	6.2	14.3	3.4	8.9
Breast cancer		3.0			5.9	
Cervical cancer		14.1			9.6	
Diabetes mellitus	9.3	7.9	8.6	20.0	14.5	17.3
Mental and behavioral disorders	2.7	0.8	1.8	2.2	0.7	1.5
Ischemic heart disease	15.5	11.8	13.7	45.5	19.7	32.7
Cerebrovascular disease	29.7	30.4	30.1	30.6	28.6	29.7
Chronic respiratory diseases	87.2	65.1	76.4	71.6	45.1	58.5
Digestive diseases (except cirrhosis)	27.1	19.8	23.6	19.2	15.7	17.5
Injuries	107.5	89.6	98.8	68.0	47.5	57.9
Transport injuries	5.9	2.0	4.0	7.8	1.8	4.8

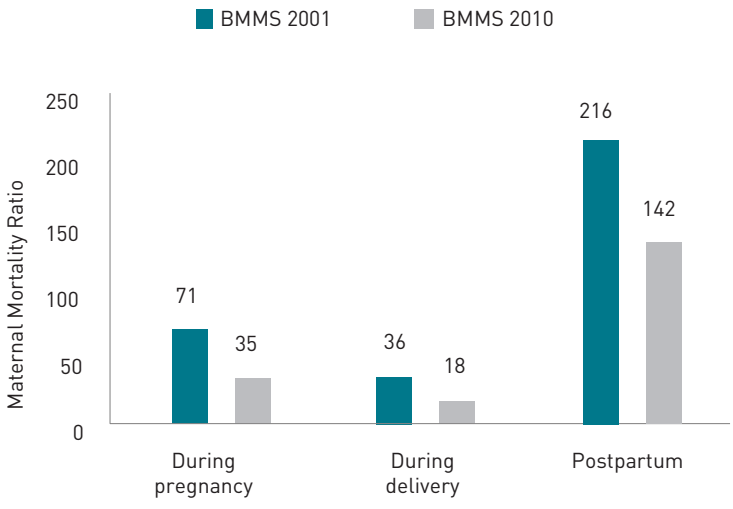
Source: Global Burden of Disease Study 2010 http://ghdx.healthdata.org/record/bangladesh-global-burden-disease-study-2010-gbd-2010-results-1990–2010

Maternal, neonatal and child mortality

Maternal mortality

According to the Bangladesh Maternal Health Services and Maternal Mortality Survey (BMMS) 2010, major direct causes of maternal deaths in Bangladesh include postpartum haemorrhage (31%), eclampsia (20%), obstructed or prolonged labor (7%), complications of unsafe abortion (1%), and other direct (5%) and indirect causes (35%). Haemorrhage and eclampsia, as the dominant direct obstetric causes of deaths, are responsible for more than half of all maternal deaths (NIPORT, Measure Evaluation et al. 2012). According to the recent estimates of the Global Burden of Disease study (2013), the maternal mortality rate has declined from 551.9 per 100 000 live births in 1990 to 333.1 per 100 000 live births in 2003, and in 2013 MMR has been estimated at 242.7 per 100 000 live births (Kassebaum et al., 2014). Figure 1.2 shows maternal mortality ratio by timing of death. There have been reductions in deaths during pregnancy during the delivery and postpartum periods. The main declines occurred around pregnancy and delivery periods; nonetheless,the mortality ratio during the postpartum period is also high. According to BMMS 2010, overall MMR and MMR due to direct obstetric deaths are lower in urban areas (NIPORT, Measure Evaluation et al., 2012). By region, Sylhet division has the highest risk of MMR while Khulna has the lowest. On the other hand, maternal education and wealth quintiles have no clear association with MMR (NIPORT, Measure Evaluation et al., 2012).

Figure 1.2 Maternal mortality ratio by timing of deaths



Source: BMMS 2001 and 2010

Bangladesh has had an impressive reduction in the total fertility rate, from 6.3 births per woman during 1971–1975 to 2.3 births per woman by 2010 (Ministry of Health and Population Control, 1978; NIPORT, Mitra and Associates et al., 2013). The contraceptive prevalence rate has also registered impressive growth – from a low rate of 8% in 1975 to more than 61.2% in 2011 (Ministry of Health and Population Control, 1978, NIPORT, Mitra and Associates et al., 2013).

Child mortality

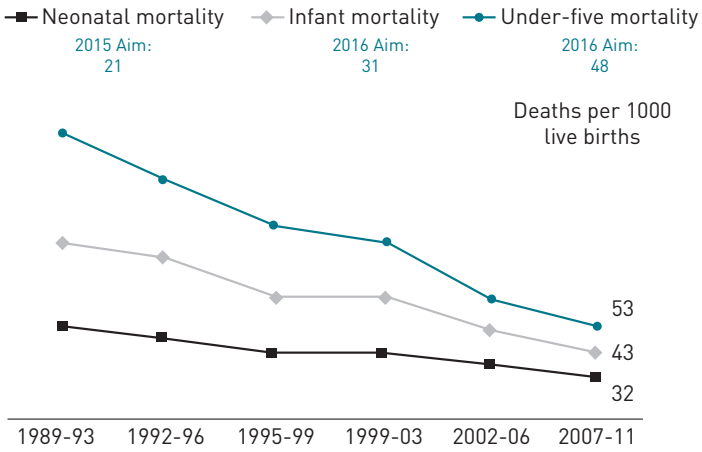
Bangladesh is one of the few countries that are on track to achieve Millennium Development Goal 4, reducing the under-five mortality rate by two thirds by 2015. Its significant progress in improving child health has reduced the child mortality rate by more than half, from 133/1000 live births in 1990 to 53/1000 in 2011 (NIPORT, Mitra Associates et al., 2013). The infant mortality rate has also declined considerably, from 87/1000 live births in 1990 to 43/1000 in 2011. However, over the last 20 years neonatal mortality declined at a slower pace than infant and child mortality, and as a result it has increased from 60% of all infant deaths in 1990 to 74% in 2011, and from 39% of under-five deaths in 1990 to 60% in 2011 (NIPORT, Mitra Associates et al., 2013).

According to the Bangladesh Demographic and Health Survey (BDHS) 2011, there are differentials in childhood mortality between regions with different characteristics (NIPORT, Mitra Associates et al., 2013). Child mortality is higher in rural areas (NIPORT, Mitra Associates et al., 2013). By region, Sylhet is performing the worst in terms of neonatal, infant and under-five mortality rates. Mothers' level of education also plays a role, in that education is inversely related to the child's risk of dying (NIPORT, Mitra Associates et al., 2013). Infant mortality is 40% lower for children whose mothers have completed secondary education than for those with no education, at 33 and 55 deaths per 1000 live births, respectively. All childhood mortality rates are lowest for children in the highest wealth quintile (NIPORT, Mitra Associates et al., 2013).

At present, pneumonia is the top killer disease for under-five children in Bangladesh (NIPORT, Mitra Associates et al., 2013). This is followed by serious infections or sepsis (15%), birth asphyxia (12%), drowning (9%), and pre-term birth (7%). Among neonates, serious infections are the most important cause of death (24%), followed by birth asphyxia (21%), pneumonia (13%), and pre-term birth (11%) (NIPORT, Mitra Associates et al., 2013). This pattern of causes of death is different from that of

around 20 years ago, when more than a quarter of deaths were found to be associated with diarrhoea (Salway and Nasim, 1994). Currently, diarrhoea is responsible for only 2% of under-five deaths (NIPORT, Mitra Associates et al., 2013). Of considerable interest is the emergence of drowning as a key cause of death, especially among children aged 12–59 months (NIPORT, Mitra Associates et al., 2013). Changes in the pattern of causes of death have important implications for the intervention package being delivered by the public health system.

Figure 1.3 Trends in child mortality (NNMR, IMR, U5MR) 1989–2011



*Source:*BDHS

There are several factors that have contributed to the significant improvement in maternal and child health in Bangladesh. Among them are improved access to essential health programmes such as the Expanded Program on Immunization (EPI), oral rehydration therapy (ORT), and antenatal care; the use of skilled birth attendants and family planning; higher levels of women's education; and improved economic conditions (NIPORT, Measure Evaluation et al., 2012; Adams, Rabbani et al., 2013; Chowdhury, Bhuiya et al., 2013).

The target the Bangladesh Government has set through its Health, Population, and Nutrition Sector Development Programme (HPNSDP) is to increase the percentage of children under one year who are fully immunized to 90% by 2016 (MOHFW, 2011). The latest assessment suggests that coverage has already increased to 86% in 2011, compared to 83% in 2007 (NIPORT, Mitra and Associates et al., 2013). In addition, gender differentials and urban-rural differentials in coverage have

diminished (Mitra, Ali et al., 1994; NIPORT, Mitra and Associates et al., 2013).

Dehydration caused by severe diarrhoea can be treated easily with ORT (NIPORT, Mitra and Associates et al. 2013). In Bangladesh, the Bangladesh Rural Advancement Committee (BRAC) initiated a national ORT programme with a door-to-door educational delivery strategy, which is estimated to have reached every woman in the country in the past 10 years (Adams, Rabbani et al. 2013). The programme has enabled mothers to treat their children's diarrhoea through home-prepared oral rehydration saline (Chowdhury, Bhuiya et al., 2013).

Reducing population growth has been a priority in Bangladesh. As a result of the Government's commitment, Bangladesh has experienced a significant demographic transition over the few decades, with the population growth rate declining to 1.37% between 1991 and 2011 censuses (Bangladesh Bureau of Statistics and Ministry of Planning, 2012). Total fertility rate (TFR) has also been reduced remarkably between 1970 and 2011, from seven to two births per woman (Chowdhury, Bhuiya et al., 2013). This considerable reduction in fertility rate has contributed to the speed and magnitude of improvements in mortality, particularly for women (Chowdhury, Bhuiya et al., 2013).

Antenatal care from a medically-trained provider is important to monitor the status of a pregnancy, identify the complications associated with the pregnancy, and prevent adverse pregnancy outcomes (NIPORT, Mitra Associates et al., 2013). Comparing the data from the current BDHS with the 2004 and 2007 surveys, antenatal care from any provider has increased by 17% since 2004, whereas antenatal care from a medically-trained provider during the same period has increased by only 8% (NIPORT, Mitra Associates et al., 2013). Inequity in antenatal care uptake still remains. The current data show that women from the highest wealth quintile were three times more likely than women in the lowest wealth quintile to receive such care from a medically-trained provider (NIPORT, Mitra Associates et al., 2013). In addition, between 2007 and 2011 there has been a decline in antenatal care uptake from a trained provider among women without any education, women in the lowest wealth quintile, and women in Sylhet and Khulna divisions (NIPORT, Mitra Associates et al., 2013).

Good, hygienic medical practice can reduce the risk of complications and infections that can cause death or severe complications for the

mother or the newborn. Therefore, increasing the proportion of births delivered in safe, clean environments and under the supervision of health professionals is important (NIPORT, Mitra Associates et al., 2013). Currently in Bangladesh two in three births are assisted by traditional attendants (NIPORT, Measure Evaluation et al., 2012). However, there has been a considerable increase in the use of medically-trained providers, from 12% in 2001 to 27% in 2010 (NIPORT, Measure Evaluation et al., 2012). Births assisted by a trained provider are more common among women having their first birth, women in urban areas, women who have completed secondary or higher education, and women from the highest wealth quintile (NIPORT, Mitra Associates et al., 2013).

It is widely accepted that higher female education is associated with behaviours that can lower the risk of maternal and child mortality (Adams, Rabbani et al., 2013). In Bangladesh, the level of education of recent mothers as well as young women entering childbearing years has risen dramatically in the past decade. It is suggested that this trend has contributed to the remarkable rise in facility delivery, in the use of medically-trained birth attendants, and in treatment-seeking for obstetric complications (NIPORT, Measure Evaluation et al. 2012).

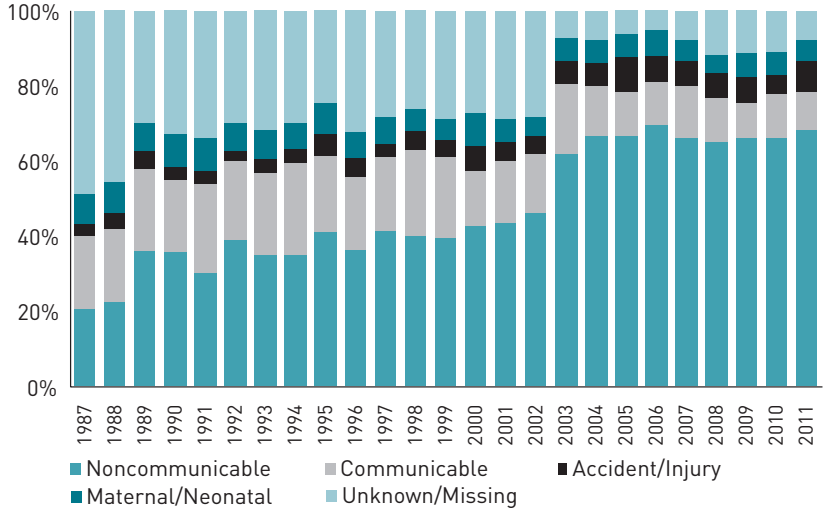
Bangladesh's overall economy has advanced, which is reflected in better housing, greater access to electricity, and presumably greater ability to mobilize funds for medical emergencies (NIPORT, Measure Evaluation et al., 2012). Nearly all indicators of use of health services by the poorest quintile have shown considerable improvement and narrowing inequity between the rich and the poor. Based on the Bangladesh Maternal Mortality and Health care Survey 2010, the use of facility delivery and skilled birth attendants by mothers from the poorest quintile increased by 300%, and seeking help for obstetric complications doubled (NIPORT, Measure Evaluation et al., 2012).

Noncommunicable diseases

Simultaneously with the demographic transition, Bangladesh is undergoing a health transition and manifesting the double burden of disease (the combination of communicable and noncommunicable diseases). NCDs such as asthma and COPD, stroke/paralysis, heart disease, hypertension, diabetes, drowning, accident/injuries, and cancers were amongst the top 20 causes of death in 2000 (Bangladesh Bureau of Statistics, 2000, 2007). Matlab HDSS data suggests that in the period 1986–2006 the proportion of deaths due to NCDs increased nearly

ninefold, whereas deaths due to injuries (including suicide and homicide) remained stable at around 7%, maternal and neonatal (including nutritional) deaths declined from 7% to 4%, and deaths due to unknown/unspecified causes declined from 7% to 5% (Figure 1.4) (Karar 2009).

Figure 1.4 Noncommunicable disease mortality increases over time in rural Bangladesh, 1987–2011



Source: Karar et al. 2009

Although a reliable NCD surveillance system is not yet in place, according to WHO estimates, over 59% of all deaths in Bangladesh were due to NCDs in 2012 (WHO, 2014). Cardiovascular disease (CVD), in particular ischaemic heart and cerebrovascular disease (stroke), unintentional injury, cancer and chronic obstructive pulmonary disease (COPD) were among the top ten causes of death in 2011 (MOHFW, 2012).

The national Sample Vital Registration System of the national statistical agency, the Bangladesh Bureau of Statistics, confirmed the estimate that cardio- and cerebrovascular diseases combined are the major cause of death due to NCDs (El-Saharty, 2013). Ischaemic heart disease is responsible for 12% of total deaths, while cerebrovascular disease (stroke) is responsible for 6% of all deaths (El-Saharty, 2013). In addition, among the population aged 30 years and above, ischaemic heart disease accounts for 7.7% and stroke 8.9% of hospital admissions (El-Saharty, 2013).

A mortality projection made by the International Center for Diarrhoeal Diseases Research, Bangladesh (icddr,b) stated that the death rate from CVDs in Bangladesh would be 21 times higher in 2025 than the rate in 2003 (Karar, 2009). Various factors contribute to the increasing morbidity caused by CVD. The INTERHEART Study, a global case-control study of risk factors for acute myocardial infarction, reported that Bangladeshis had the highest prevalence of CVD risk factors among the participating countries. These risk factors include current and former smoking (59.9%), abdominal obesity (43.3%), self-reported history of hypertension (14.3%), depression (43%), and elevated ApoB100/Apo-I ratio (59.6%) (Saquib, Saquib et al., 2012). In addition, Bangladeshis have the lowest prevalence of regular physical activity (1.3%) and daily intake of fruits and vegetables (8.6%) (Saquib, Saquib et al., 2012).

Rates of risk factors estimated from the Global Burden of Disease study show declines in the contribution of risks from water and sanitation, under-nutrition and household air pollution, and rises in the contribution of NCD risk factors, such as smoking, high blood glucose, high blood pressure and diet low in fruit and vegetables. (Table 1.6)

Table 1.6 Morbidity and risk factors for health status, 1990 and 2010

Risk factors	1990			2010		
Rates per 100 000	Males	Females	Total	Males	Females	Total
Water & sanitation	23.7	22.4	22.4	2.8	2.8	2.7
Ambient PM pollution	28.0	24.0	24.0	30.1	30.1	24.2
Household air pollution	78.4	76.4	76.4	59.3	59.3	52.6
Under-nutrition	144.3	147.7	147.7	13.9	13.9	14.9
Smoking	77.8	41.8	41.8	97.6	97.6	64.1
Alcohol & drug use	5.6	0.8	0.8	5.5	5.5	3.2
High fasting plasma glucose	18.8	12.7	12.7	35.2	35.2	29.9
High blood pressure	35.7	38.3	38.3	61.6	61.6	55.8
Dietary risks	52.5	45.0	45.0	83.5	83.5	66.7
Physical inactivity				17.9	17.9	15.6
Occupational risks	23.6	9.3	9.3	19.9	19.9	12.1

Source: Global Burden of Disease study, Bangladesh country analysis: http://ghdx.healthdata.org/record/bangladesh-global-burden-disease-study-2010-gbd-2010-results-1990–2010

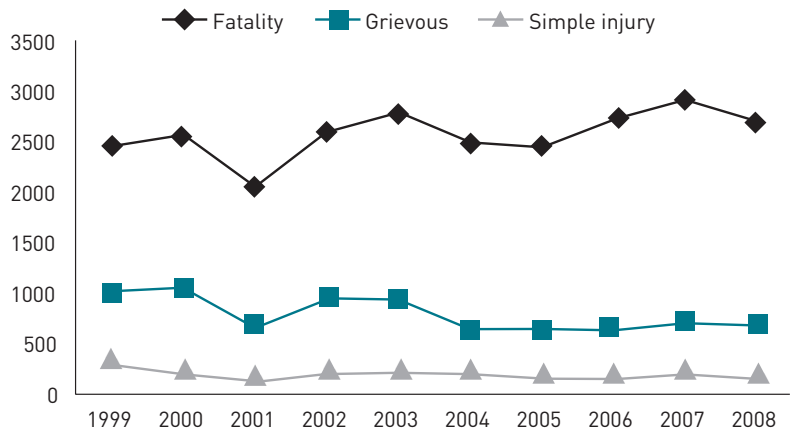
Cancer: The overall population projections estimate that cancer accounted for 7.5% of deaths in 2008. There is no national cancer registry; however the facility-based data reveals that there are around 200 000 new cases of cancer per year. For its economic impact, the National Cancer Control Strategy and Plan of Action 2009–2015 confirms cancer as a high priority for Bangladesh. Cancer screening is limited to a few secondary and most tertiary level facilities and needs to be expanded in both the public and private sectors.

The National Institute of Cancer Research and Hospital (NICRH), the national and referral centre for cancer treatment in Bangladesh, reported that the most frequently cancer-affected organs among their male patients were lungs (27.1%), lymph nodes (9.6%), and oesophagus (6.15%), while for females the most frequently cancer-affected organs were breast (26.3%), cervix (21.1%) and lymph nodes and lymphatics (5.2%) (DGHS, 2012).

Diabetes: The estimated prevalence of diabetes is at 6.9%, with the vast majority being Type 2 diabetes. The International Diabetes Federation estimates that by 2025, 7.4 million people in Bangladesh will have diabetes, placing Bangladesh among the top ten countries for number of people living with diabetes. Rapid urbanization, with a sedentary lifestyle and an altered diet consisting of more energy-dense processed foods, puts the country at risk for increased obesity and the emergence of the disease (WHO, 2005).

Road accidents: In the last two decades, traffic accidents have increased in Bangladesh (Figure 1.5) and now cause vast social and economic loss through fatalities and property damage. According to national statistics, road accidents in Bangladesh claim, on average, 3000 lives, and injure another 4000 per year. WHO estimates actual fatalities of 20 038 each year. In proportion to vehicle ownership rates, Bangladesh has one of the highest fatality rates internationally, with over 100 deaths per 10 000 motor vehicles (WHO, 2009).

Figure 1.5 Trends in road traffic accidents Bangladesh 1999–2008



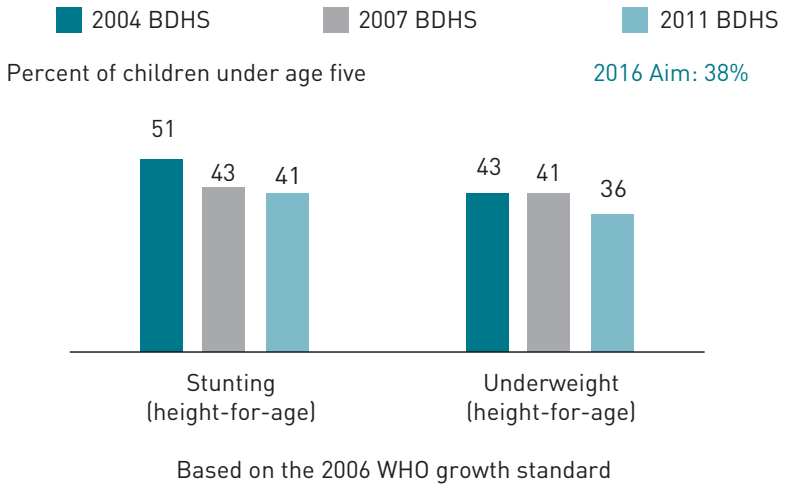
Source: BRTA annual report

Emerging and re-emerging diseases: These include drowning, dengue, and avian influenza. Since May 2008, Bangladesh has been in the Pandemic Alert Phase indicating active circulation of the avian influenza virus among poultry and transmission from poultry to humans. The Ministry of Health and Family Welfare leads the response to the epidemic and sentinel surveillance.

Malnutrition: Malnutrition is a challenge in the South Asian region, particularly in Bangladesh. While the country has reduced the rate of underweight children under five, the country is well behind in reducing the rate of stunting. Malnutrition is also high among women (adolescents and pregnant women). Obesity is another growing concern. At present, emphasis needs to be directed towards preventing women's and children's malnutrition, micronutrient deficiencies and obesity.

During 2004–2011, modest improvements in child nutritional status were also observed: stunting (height-for-age) of children under-five decreased from 51% to 41%, while the proportion of underweight (weight-for-age) children decreased from 43% to 36% (Figure 1.6).

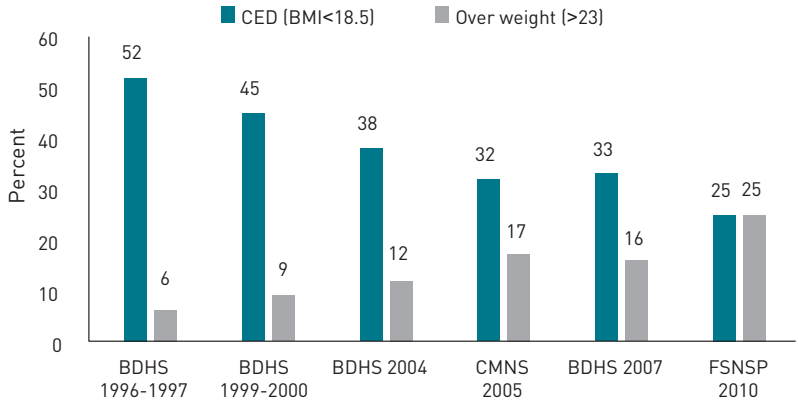
Figure 1.6 Trends in child nutritional status 2004–2011



Source: BDHS

Malnutrition among women is characterized predominantly by undernutrition, but the prevalence of overweight is also increasing substantially (Figure 1.7). Over 16 years, the proportion of chronic energy deficiency (CED) in women has been reduced by more than half to 25% and the proportion of overweight has increased from 6% (Bangladesh Bureau of Statistics,1997) to 25% (Waid, 2010). Now Bangladesh faces a double burden of malnutrition, but CED remains the dominant nutritional phenotype.

Figure 1.7 Trends in maternal CED and overweight 1996–2010



Source: BDHS

Mental health: A national survey in 2003–2005 reported that 16.05% of the adult population of Bangladesh suffered from mental health disorders (WHO, 2007). Data from the National Institute of Mental Health and Research show that the number of new mental health patients visiting both outpatient and inpatient departments, including emergency cases, increased over time between 2007 and 2011 (DGHS, 2012). According to this data, schizophrenia ranked first among all types of mental diseases diagnosed, followed by bipolar mood disorder and depression (DGHS, 2012). Similarly, a study conducted in Dhaka investigating the types of psychiatric diagnoses among admitted patients in a private hospital also revealed that schizophrenia was the leading psychiatric disorder (39.4%) (Fahmida, Wahab et al., 2009). This was followed by substance-related disorders (29.6%), bipolar mood disorder (12.17%), and major depressive disorders (6.58%) (Fahmida, Wahab et al., 2009). Diabetes mellitus is frequently associated with co-morbid depression, and in 2000 Bangladesh had 3.2 million people with diabetes, putting it 10th globally in terms of disease prevalence and contributing to the mental health burden (Rahman, et al., 2011).

In Bangladesh, no mental disorder is covered by social insurance, no human rights review body exists to inspect mental health facilities, no specific mental health authority has been established, and there are only limited resources allocated for mental health (WHO, 2007). There are 50 outpatient mental health facilities available, in addition to 31 community-based psychiatric inpatient units, 11 community residential facilities, and one 500-bed mental hospital (WHO, 2007). The density of human resources working in mental health facilities or private practice is 0.49 per 100 000 population (WHO, 2007).

Disability: To date, no comprehensive empirical study has been conducted to determine the incidence and prevalence of disabilities in Bangladesh (Alam, 2014). Disability is not included in any routine data collection or surveillance system in the health sector (Danish Bilharziasis Laboratory, 2004; Titumir and Hossain, 2005), but it was included in national censuses in 1982, 1986 and 1991 even though the reported prevalence rates are far below international and national estimates (Danish Bilharziasis Laboratory, 2004). Several surveys by different development agencies and NGOs have been conducted to quantify disability in Bangladesh, but they only cover limited types of disability or are limited in coverage (Danish Bilharziasis Laboratory, 2004; Alam, 2014). As no reliable national data exists, the prevalence of disability in Bangladesh is estimated at

5–12% (Alam, 2014), close to WHO's global estimate which predicts that approximately 10% of all people have a disability of one kind or another (Titumir and Hossain, 2005). The prevalence of disabilities in children below 18 years is estimated to be 6%, and among those above 18 years to be around 14%. In 2004, with 44.3% of the population of 129 million below 18, there were about 3.4 million children with disabilities and 10 million adults with disabilities (Danish Bilharziasis Laboratory, 2004).

Surveys conducted by Action Aid Bangladesh revealed the distribution of types of disability in 10 surveyed locations, including locomotor, visual, hearing and speech, cognitive or mental disability, epilepsy and multiple disability, with visual disability proving to be the most prevalent type of disability followed by hearing and speech (Danish Bilharziasis Laboratory, 2004). Most studies in Bangladesh have not distinguished between congenital disability and disabilities occurring later in life (Danish Bilharziasis Laboratory, 2004), but a microstudy from one area suggests that 50% of impairments were due to disease and malnutrition, over 17% were due to birth defects, 15% were due to accidents, and 8% due to old age (Danish Bilharziasis Laboratory, 2004). While Bangladesh is making progress in other health indicators, a decline in the incidence of disability is unlikely. Disabilities due to natural calamities and road accidents imply that the prevalence of people with disability will continue to rise, even though their nature and distribution are likely to change (Alam, 2014).

Indoor air pollution: In developing countries, indoor air pollution resulting from burning wood, animal dung and other biofuels is a major cause of acute respiratory infections, which constitute one of the most important causes of child mortality (Dasgupta, Huq et al., 2006). These fuels produce smoke which contains a mixture of particles and chemicals that bypass the body's defenses and increase the risk of respiratory illnesses such as bronchitis and pneumonia (Khalequzzaman, Kamijima et al., 2007). Middle- and upper-income households in urban areas of Bangladesh usually utilize clean cooking fuels such as natural gas, whereas households in periurban and rural areas rely primarily on biomass fuels (Dasgupta, Huq et al., 2006). The results from BDHS 2011 showed that half of households in urban areas use solid fuel for cooking, while almost all rural households use solid fuel, including wood, agricultural crops, animal dung, straw, shrubs, grass, and charcoal (NIPORT, Mitra Associates et al., 2013). The same data source suggests that Bangladesh is slowly making some progress towards reducing the proportion of the population that relies on solid fuels, from 91% in

2007 to 86% in 2011 (NIPORT, Mitra Associates et al., 2013). In addition to a switch to clean fuels and clean stoves (Khalequzzaman, Kamijima et al., 2007), changing ventilation characteristics (construction materials, space configurations, cooking locations, and placement of doors and windows) and ventilation behaviour, such as keeping doors and windows open after cooking, can help to improve the quality of the air (Dasgupta, Huq et al., 2006).

Water and sanitation: Access to safe water and sanitation are basic determinants of health, and limited access to safe drinking water and sanitation facilities, as well as poor hygiene, are associated with various diseases such as diarrhoea (NIPORT, Mitra Associates et al., 2013). The proportion of the population with access to clean water increased from 76% in 1990 to 83% in 2011 (World Bank, 2013). In urban areas, drinking water comes from various sources including: tube well or borehole (55%), piped into the dwelling (21%), water piped into the yard (16%), and a public tap or standpipe (7%). In contrast, tube well or borehole is the only source of drinking water in rural areas (NIPORT, Mitra Associates et al., 2013).

Sanitation facilities that are shared are considered not to be as hygienic as those that are not shared, and a facility is considered improved when it is not shared (NIPORT, Mitra Associates et al., 2013). The proportion of the population using an improved sanitation facility in Bangladesh increased from 38% in 1990 to 55% in 2011 (World Bank, 2013). Households in rural areas are more likely to use a toilet facility that is not shared than urban households (62% and 55% respectively) (NIPORT, Mitra Associates et al., 2013).

Arsenic contamination: Arsenic is present everywhere in the environment, and has been recognized as a toxin of varying carcinogenicity depending on its chemical and physical forms, concentration, and duration of exposure (Hossain, 2006). Health effects resulting from prolonged exposure to arsenic include cancer of the skin and internal organs and several nonmalignant adverse health effects including weakness, oedema, conjunctival congestion, diabetes mellitus, hypertension, and respiratory conditions (Milton, Smith et al., 2005). The main source of chronic arsenic exposure in Bangladesh is through drinking contaminated groundwater, which has been the main source of drinking water for most of the population (Milton, Smith et al., 2005). A survey conducted by British Geological Survey together with the Department of Public Health Engineering (DPHE) found that the groundwater of 60 surveyed districts out of 64 was contaminated with arsenic (Hossain, 2006). The solution for this situation could be the treatment of tube

wells, which are used to extract groundwater, or by using water collected from alternative sources such as surface or rainwater (Chowdhury, 2010). Several efforts have been made to overcome the situation, including the Bangladesh Arsenic-Mitigation Water Supply Project, supported by the World Bank, which tried to implement a community-based approach to the problem (Hossain, 2006).

2 Organization and governance

Chapter summary

The health system of Bangladesh is pluralistic, with four key actors that define its structure and function: Government, the private sector, NGOs and donor agencies. The Government or public sector is the first key actor who, by constitution, is responsible not only for setting policy and regulation but also for providing comprehensive health services, including financing and employing health staff. The Ministry of Health and Family Welfare, through the Directorates General of Health Services (DGHS) and Family Planning (DGFP), manages a dual system of general health and family planning services through 53 District Hospitals, 425 Upazila Health Complexes, 1469 Union Health and Family Welfare Centres, and 12 248 community clinics at ward level. In addition, the Ministry of Local Government, Rural Development and Cooperatives manages the provision of urban primary care services. The quality of services at these facilities, however, is quite low, due mainly to insufficient resources, institutional limitations and absenteeism or negligence of providers.

Since 1976, to compensate for the government's limited capacity to provide basic health services, the private sector and NGOs have established a network of facilities to provide health and family planning services. The private sector consists of the formal sector, which provides both western and traditional (Unani and Ayurvedic) services through a range of facilities from hospitals to clinics, laboratories and drug stores, and the non-formal sector, which consists of largely untrained providers of western, homeopathic and traditional (kobiraj) medicine. However, private services are poorly regulated, while the formal sector is concentrated in urban areas, and the informal sector is the principal provider in rural areas.

In response to the low quality of service provision by Government and its inability to reach the entire population, particularly the poor, a vibrant and large NGO sector has emerged as a "third sector" of health providers in Bangladesh. The role of NGOs is growing as donors channel significant and increasing amounts of funding directly to them. In 2007, 9% of total

health expenditure (THE) was managed by NGOs, up from 6% in 1997. As a response to both external and internal pressures, there have been partnerships between government and NGOs in the areas of financing, planning, service delivery, capacity building, and monitoring and evaluation that have produced some health gains.

Bangladesh's public health system remains highly centralized, with planning undertaken by the Ministry of Health and Family Welfare and little authority delegated to local levels. The Health Information System suffers from the bifurcation of the Ministry into the DGHS and the DGFP, with separate and distinct reporting systems for each. While there exist a number of Acts and Ordinances to regulate the health system, including regulation of different types of providers, practice facilities and NGOs, many of these legal instruments date from several decades ago. Separate councils for the registration and licensing of medical practitioners, dentists, and nurses have been established, but their authority to investigate and discipline providers is weak. A number of initiatives have been undertaken through the joint Government-donor pooled programmes to encourage and support community empowerment and accountability, with limited success. However, a number of NGOs remain active in public reporting on government handling of the health sector.

2.1 Overview of the health system

The provision of basic health services in Bangladesh is a constitutional obligation of the Government (IGS, 2012). Article 15 of the Constitution stipulates that it shall be a fundamental responsibility of the State to secure for its citizens the provision of the basic necessities of life, including food, clothing, shelter, education and medical care. In addition, Article 18 of the Constitution asserts that the State shall raise the level of nutrition of its population and improve public health as some of its primary duties. In line with this broad legal framework, the health sector has developed policies and programmes which are implemented through the central control of the Ministry of Health and Family Welfare. Despite the constitutional obligation to secure health services for the people, in practice this responsibility has been significantly shared with the private sector. The country has an entrepreneurial health system, i.e. access to health services is considered the individual's responsibility depending on his or her economic condition.

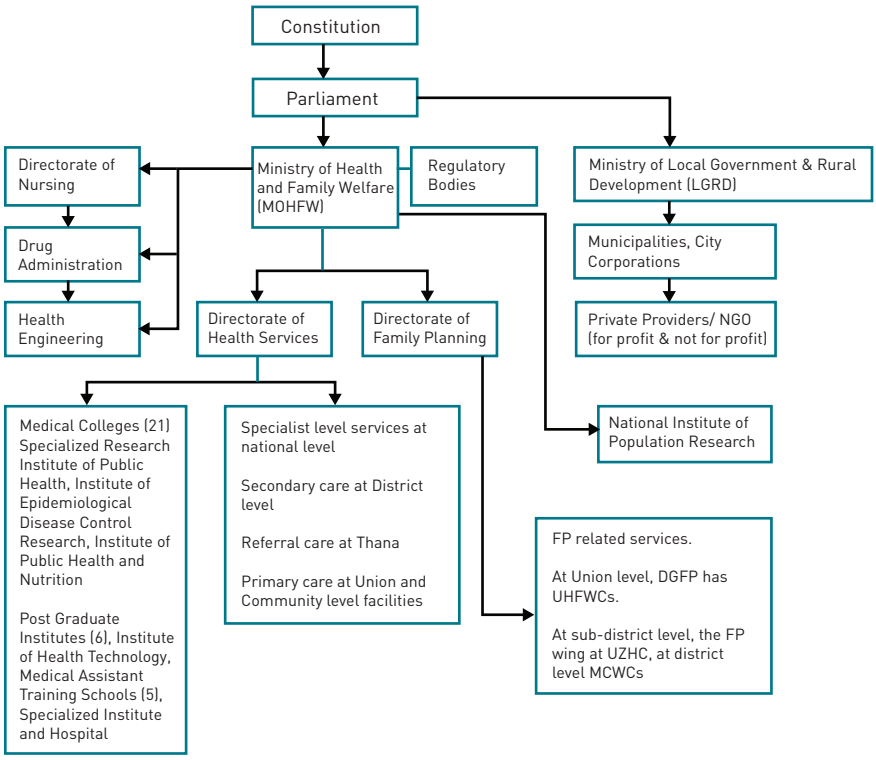
The health system of Bangladesh is pluralistic, referring to the existence of multiple actors performing diverse roles and functions through a mixed

system of medical practices. There are four key actors that define the structure and functioning of the broader health system: Government, the private sector, NGOs and donor agencies. Government, the private sector and NGOs are engaged in service delivery, financing and employing health staff; donors play a key role in financing and planning health programmes. The public sector is mandated not only to set policy and regulations but also to provide comprehensive health services and to manage financing and employment of health staff. The Government regulates the functions of public, private and NGO providers through various acts and legislation. It delivers services through its nationwide infrastructure by employing doctors, dentists, nurses, pharmacists and a huge number of auxiliary health workers.

Public sector care includes curative, preventive, promotive and rehabilitative services, while the private sector provides mostly for-profit curative services and not-for-profit curative services to a limited extent at the national and subnational level. NGOs, on the other hand, provide mainly preventive and basic care. The private sector, with its limited infrastructure, employs more providers than the public sector, including traditional healers, unqualified allopaths, and doctors who are already employed by the Government. On the other hand, NGOs provide mostly not-for-profit services to the underserved population.

The Ministry of Health and Family Welfare regulates both public and private sector health services. As per Schedule I of the Rules of Business, the Ministry has been empowered to act as the central body for policy formulation and planning, regulating the medical profession and standards, managing and controlling drug supply, administering medical institutions, providing health services and much more. The Ministry, with its two wings of Health and Family Planning, manages public sector health services ranging from primary to tertiary care (excluding urban primary care), stretching from the central level to the grassroots and covering both rural and urban areas. It is worth noting that although the Ministry is the leading agency for institution-based health care delivery at the national level and in rural areas, primary health care in urban areas is the responsibility of respective local government institutions (municipalities and city corporations) which are under the Ministry of Local Government, Rural Development and Cooperatives. Private sector infrastructure, on the other hand, is limited to medical colleges, hospitals, clinics of various natures and qualities, pharmacies, and untrained healers. Service coverage by the private sector is wider than the public sector (http://uphcp.gov.bd/Responsibilities).

Figure 2.1 Organization of the health system in Bangladesh



Source: Asia Pacific Observatory on Health Systems and Policies

2.2 Historical background

Modern health systems evolved in Bangladesh, as in many developed countries, within the premises of Government-owned health-care establishments largely funded by government tax revenues. Bangladesh was a part of India when it was a British colony and later became the eastern province of Pakistan (East Pakistan) at the time of the partition of British India on 14 August 1947. Thus Bangladesh inherited a highly centralized health-care system from the former British colonial power, which was then influenced by health policies in Pakistan until its independence in 1971 (Mahmood, 2009). In 1946, a Health Survey and Development Committee was formed, popularly known as the "Bhore Committee", with the objective of exploring conditions and health service provision and putting forward recommendations for further development. The Committee proposed a comprehensive health-care service provision system; inter alia, integration of curative and preventive services, production of basic doctors for rural health institutions, and the establishment of rural health centres. During the early 1960s, several

initiatives were undertaken to strengthen health systems. Important among them were (i) the scheme of Rural Health Systems, comprising one rural health centre and three subcentres for every 50 000 people; (ii) the Malaria Eradication Programme; and (iii) the Family Planning Programme that over time turned into a department under the Ministry of Health and Family Welfare.

After independence in 1971, the country inherited a health-care delivery system comprising eight medical college hospitals, 19 district hospitals, a number of sub-divisional hospitals, and rural and urban health centres (dispensaries). In the early days of independence, overpopulation was recognized as the major obstacle to national development. Accordingly, a separate division for family planning activities under the Ministry of Health was created. In 1975, the Ministry of Health was bifurcated into two wings and population control received new impetus in health sector planning.

The First Five Year Plan (1972–1978 and then extended to 1980) emphasized primary health care (PHC) as the key to improving health care, as stated in the Alma-Ata Declaration of 1978 (Anwar, Islam et al., 2012).The plan established 31-bed Upazila Health Complexes (UHCs) in most rural subdistricts, while the second and third Five Year Plans (1980–1990) strengthened human resources for health (Anwar, Islam et al., 2012). During the third and fourth planning periods (1986–1998), the Government implemented a number of child health programmes including the Expanded Programme on Immunization (EPI), Control of Diarrhoeal Diseases (CDD), the Acute Respiratory Infection (ARI) Control Project and the Night Blindness Prevention Programme (Anwar, Islam et al., 2012). These health development projects were impressive in reducing mortality and morbidity.

Since the late 1990s the health sector has gone through massive institutional reform to promote greater equity and efficiency in resource use under the influence of external donors. In 1996, the World Bank and other consortium members indicated to the Government that they would not proceed with further credits until a comprehensive, sector-wide strategy had been adopted (Vaughan, Karim et al., 2000). This included substantive structural and organizational reforms by the Ministry of Health and Family Welfare (Buse, Gwin, 1998). Accordingly, the Health and Population Sector Strategy (HPSS) approved in 1997 gave the health sector a new direction towards efficiency and cost-effectiveness through advocating certain institutional and governance reforms in the health sector.

The HPSS fed into two consecutive policy documents – the Fifth Five Year Plan (1997–2002) and the National Health Policy approved in 2000. As a result, these three documents advocated for a common set of institutional reform strategies, including the provision of primary health services in an ESP, introduction of the Sector Wide Approach (SWAp), one-stop services through community clinics at the village level, unification of the Health and Family Planning Directorates, administrative decentralization, and the creation of static clinics (community clinics). Accordingly, in 1998 the first-ever five-year operational programme, called the Health and Population Sector Programme (HPSP) (1998–2003) was designed and implemented. With the termination of HPSP, the Health Population and Nutrition Sector Programme (HPNSP) for 2003–2010 was launched, with similar strategies but an added emphasis on nutrition. With its expiry in 2011, the country has designed another operational programme called the Health, Population, and Nutrition Sector Development Programme (2011–2016), with a renewed emphasis on improving nutrition by streamlining this service at various levels of the health system (MOHFW, 2011).

2.3 Health system organization in Bangladesh

2.3.1 Administrative structure of the statutory health system

The Ministry of Health and Family Welfare implements its programmes and provides services through different executing and regulatory authorities. The executing authorities include five Directorates of the Ministry and some other organizations. The Directorates are: the Directorate General of Health Services (DGHS); Directorate General of Family Planning (DGFP); Directorate General of Drug Administration (DGDA); Directorate of Nursing Services (DNS); and the Health Engineering Department (formerly known as the Construction Management and Maintenance Unit). The DNS and the DGDA are attached to the health wing of the Ministry of Health and Family Welfare. The DNS is responsible for nursing education and nursing services, while the DGDA implements drug regulations. Other executive organizations accomplishing significant tasks of the Ministry include the Transport and Equipment Maintenance Organization, National Electro-medical and Engineering Workshop, and the Essential Drugs Company Limited. The regulatory bodies of the health sector are the Bangladesh Medical and Dental Council (BMDC), Bangladesh Nursing Council (BNC), State Medical Faculty (SMF), the Ayurvedic, Homeopathy and Unani Board, and the Bangladesh Pharmacy Council.

To facilitate research and training in medical science, different public sector institutions under the control of the Ministry of Health and Family Welfare operate at the national level. There are 21 government medical colleges, six postgraduate institutes, three specialized institutes, two institutes of health technology and five medical assistant training schools in Bangladesh (DGHS, 2012). For research there are two institutions, the Bangladesh Medical Research Council (BMRC) and the National Institute of Population Research and Training (NIPORT). In addition there are a few public health research and training institutions, including the Institute of Epidemiology, Disease Control and Research (IEDCR), Institute of Public Health (IPH), Institute of Public Health and Nutrition (IPHN) and National Institute of Preventive and Social Medicine (NIPSOM).

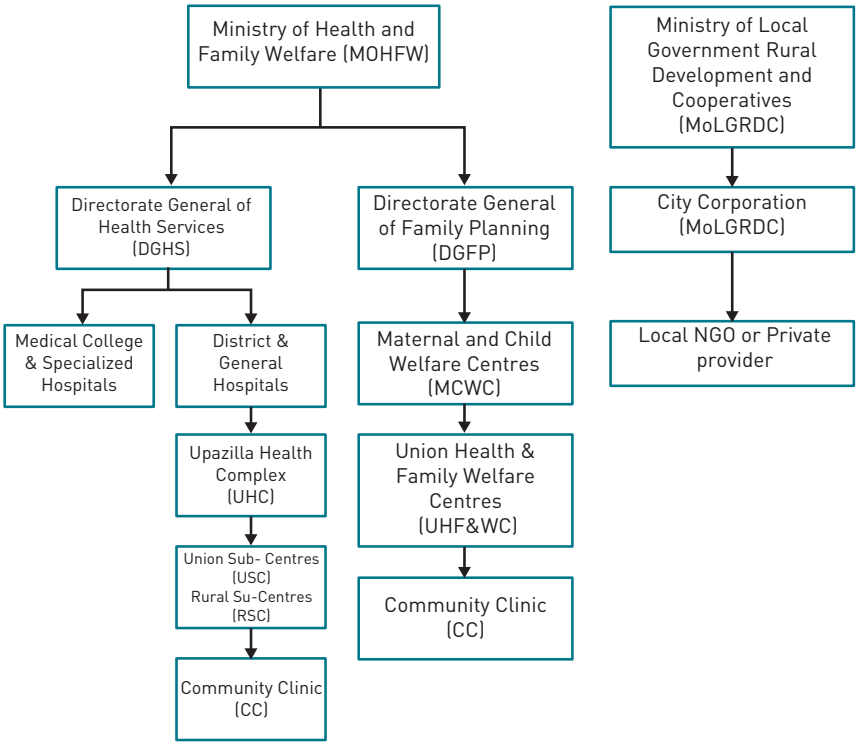
Additionally, the Government of Bangladesh delivers health-care services in partnership with NGOs. The Urban Primary Health-care Services Delivery Project (UPHCSDP) covers all seven city corporations and five municipalities (Bogra, Comilla, Madhabdi, Savar and Sirajgonj) in Bangladesh (UPHCSDP, 2014). The goal of the project is to improve the health status of the urban population, especially the poor, through improved access to and utilization of efficient, effective and sustainable PHC services. The Ministry of Local Government, Rural Development and Cooperatives is responsible for managing this project through a Project Management Unit established in the six city corporations and the five selected municipalities.

At least 30% of the total services provided by this project are targeted to the poor free of cost. UPHCSDP service providers are contracted to deliver an agreed "Essential Services Package +" (ESP+) through partnership agreements with a focus on access for the poor. The services are provided through Comprehensive Reproductive Health-care Centres, Primary Health-care Centres and PHC Outreach Centres (satellite clinics) in 24 Partnership Areas. The centres are generally managed and run by 12 partner NGOs. UPHCSDP provides services for reproductive health-care, child health care, communicable disease control, limited curative care, management and prevention/control of reproductive tract/sexually transmitted infections, voluntary confidential counselling and testing for HIV/AIDS, management of violence against women, primary eye care, TB control and treatment, behaviour change communication, and diagnostic services.

2.3.2 Public sector health services

The Ministry of Health and Family Welfare has an extensive health infrastructure. The service delivery structure follows the country's administrative pattern, starting from the national to the district, upazila, union and finally to the ward levels. It provides promotive, preventive, and curative services such as outdoor (outpatient), indoor (inpatient), and emergency care at different levels – primary, secondary and tertiary. The chart below (Figure 2.2) summarizes the organization of the Ministry of Health and Family Welfare service delivery structure. The details of the number of various health facilities and resources have been included in Chapter 4.

Figure 2.2 Health service delivery organizational structure in Bangladesh



Source: Asia Pacific Observatory on Health Systems and Policies

2.3.3 Private sector health services

In the private sector, providers can be grouped into two main categories. First, the organized private sector (both for-profit and nonprofit) which includes qualified practitioners of different systems of medicine.

Apart from modern medicine, traditional medicine is widely practiced in the private sector. Second, the private informal sector, which consists of providers not having any formal qualifications such as untrained allopaths, homeopaths, kobiraj, etc., known as Alternative Private Providers. These informal/traditional private service providers mostly serve the poor in rural areas. On the other hand, the formal, for-profit or nonprofit service institutions are mostly located in urban areas. Private facilities including medical colleges, hospitals, clinics, laboratories, and drug stores are being established in increasing numbers in the capital city as well as other divisional headquarters. This causes geographic inequity in health service provision. The private facilities are often staffed with public sector health personnel. Many health professionals hold two jobs.

The growth of the private sector compared to the public sector is significant. Along with the increasing number of hospitals and hospital beds, over the last few years the private sector has witnessed a tremendous growth of teaching institutions. For instance, in 1996 there were no medical colleges or any teaching institutions in the private sector, but by 2011 the private sector had 44 medical colleges (MOHFW, 2013).

2.3.4 Diagnostics

Along with private clinics and hospitals, the number of diagnostic centres in the private sector is growing. In 2000, approximately 838 laboratories and other diagnostic centers were registered with the Ministry of Health and Family Welfare. This number has risen to 5122 in 2012 (MOHFW, 2012). In the private for-profit sector, there are some large diagnostic centers in the cities (Lab-aid, Popular Diagnostics) providing laboratory and specialized radiological tests. Some of these facilities maintain a high standard. In the nonprofit private sector, there are centres like the International Centre for Diarrhoeal Diseases and Research, Bangladesh, located in Dhaka, which has a modern laboratory providing research facilities and extends laboratory services to the general community.

2.3.5 NGOs

The NGO sector has emerged as the third sector, providing new options and innovations. Bangladesh is known worldwide for having one of the most dynamic NGO sectors, with over 4000 NGOs working in the population, health and nutrition sector (Perry, 2000). NGOs have been active in health promotion and prevention activities, particularly at the

community level, and in family planning, maternal and child health areas. The role of NGOs is growing as donors are channelling significant and increasing amounts of funding directly to them. In 2007, 9% of total health expenditures were managed by NGOs, up from 6% in 1997; upwards of 80% of NGO funding comes from donors (Health Economics Unit, 2010). The larger national NGOs (BRAC, Gonoshasthaya Kendra, Grameen Bank) have strong organizations and the management capacity to provide both preventive and curative services. These NGOs are well-equipped with training and research facilities and information management systems. NGO partners provide services for the Expanded Programme of Immunization across the country, in urban and rural areas.

There is generally a good working relationship between the government and NGOs, as exemplified by the number of public-private partnerships. The Fifth Five Year Plan (1997–2002) encouraged promotion of the role of the private sector and NGOs in health development. In later years, health sector diversification was emphasized, implying a shift from Government's role being as a "provider"of services towards being a "purchaser" of services. This established formal collaborations between the public and private sectors –public private partnerships.

2.3.6 Donors

Multiple donors, both multilateral and bilateral, have been actively engaged in health-care financing and planning. The main bilateral donors to the health and population sector in Bangladesh are the governments of Australia, Belgium, Canada, Germany, Japan, Netherlands, Norway, Sweden, the United Kingdom and the United States (Vaughan, Karim et al., 2000). The multilateral donors include the World Bank, European Union, UNICEF, ADB, Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), and the GAVI Alliance.

2.3.7 Professional groups

In Bangladesh there are a number of professional organizations who address the rights of medical professionals at different levels, such as the Bangladesh Medical Association (BMA), Bangladesh Private Medical Practitioners Association (BPMPA), Public Health Association of Bangladesh, Bangladesh Paediatric Society and the Nephrology Society of Bangladesh. However, there is no organized body, either in the public or private sector, for overseeing the interests of patients. The Consumers Association of Bangladesh is an NGO addressing the rights

of consumers in general, and does not have a separate agenda on health focusing on the rights of consumers as patients (Consumers Association of Bangladesh, 2014).

2.3.8 Health policy formulation

Health planning is the sole responsibility of the central government. The health-care system is exclusively controlled by the Ministry of Health and Family Welfare with deconcentration of some power to the local level. At the central level, power is always centralized towards higher-level officials:"Officials who are closer to project execution do not take decisions and prefer to defer them to the higher layers who are distant from project execution"(Task Forces, 1991).

Bangladesh had its first National Health Policy (NHP) formally approved by the Parliament in 2000. The key objectives of the policy include: providing basic health services to the people at all levels, particularly to the poor; ensuring the availability of primary health-care services at the union and upazila/thana levels; improving maternal and child health and reproductive health services; and strengthening family planning services. The policy saw many revisions until 2011, but without any dramatic shift in its focus. The latest policy revision in 2011 emphasizes primary health and rural health, as before, and new issues that have been introduced include a health insurance scheme for formal institutions and the provision of health cards for the ultra-poor and deprived (MOHFW, 2011).

2.4 Decentralization

The health-care system of Bangladesh corresponds to a hierarchically arranged pyramidal structure where the ultimate authority lies with the Ministry of Health and Family Welfare. At the local level, the deconcentrated health administration is fully controlled by the Ministry of Health and Family Welfare. The field-level health administration is responsible for implementing government programmes by managing the huge number of health staff and coordinating their activities. Responsibility for financing, functionaries, supplies, maintenance and infrastructure development for service delivery lies with the Ministry. It also manages appointment, transfer, posting and salary of frontline service providers. Although selection of some field-level staff (4th grade) is done at the district level, recruitment is done at the central level. With regard to supplies, each level of local administration (Union Health and Family Welfare Centre/Sub-centre/community clinic, Upazila Health

Complex, District Hospital) can submit their needs to the central level, but actual supply depends on the decision of the centre. For development of infrastructure/facilities, local administration collects data (e.g. land availability, local needs) from the ground to inform the central decision (Osman, 2004).

In parallel with the deconcentrated structure of health administration, down towards the grassroots level, there are also local government institutions which are bestowed with responsibility for delivering health services at the local level. In practice, local bodies in rural areas mainly perform motivational, awareness building, and some facilitative roles in service delivery (Ministry of Local Government, Rural Development and Cooperatives, 2004). They have no formal role in determining supplies, finance, or even monitoring the performance of the local-level service providers/facilities. The local providers are accountable to their departmental superiors rather than the locally-elected bodies. Local government has been authorized to supervise the facilities with a view to identifying irregularities or prevailing problems, but this supervision creates no impact on service delivery.

Local government institutions are also heavily dependent on the central government for financing, which creates inefficiency in financial management. Capital and funds for routine maintenance, repairs, etc. are exclusively controlled from the centre. Funds are spent strictly in accordance with rules and regulations rather than the demands of the situation. Financial matters are so centralized and circumscribed with bureaucratic rules and regulations that local officials, even DGHS officials, cannot switch money between budgetary subheads without the concurrence of the Ministry of Health and Family Welfare.

In contrast to the negligible role of rural local government in health service delivery, urban local government institutions called city corporations (large cities) and municipalities (small cities) play a key role in the delivery of health care, specifically primary health services. The mandate for providing primary health care in urban areas is vested with the Ministry of Local Government, Rural Development and Cooperatives. The locally elected bodies operating under the legal control of this ministry are responsible for financing the service, recruiting the functionaries (3rd and 4th grade staff) and establishing the facilities. Urban local bodies have one sanctioned post for a doctor and around eight paramedics and other support staff, whose salaries are paid by the

concerned local body. Local bodies perform all these functions from their own sources of revenue and from donor-funded projects implemented by NGOs.

It is also worth noting that although urban primary health services are managed and provided by local government institutions, decision-making authority is hardly transferred to this level. Dominance of bureaucracy over the local representatives ultimately makes the local bodies accountable to the Ministry of Local Government rather than the people, which consequently makes the overall administration unaccountable.

2.5 Planning

2.5.1 Current Planning

The health sector plan of Bangladesh is an integral part of the national Five Year Plan. The Planning Commission, which is the central planning agency, is responsible for preparing the framework of the Five Year Plans, with inputs from the Ministry of Health and Family Welfare. The country is currently under its Sixth Five Year Plan (2011–2016). The health plan under the Five Year Plan provides guidelines describing the broad sectoral goals, targets, and strategies for a five-year period (MOHFW, 2011).

In line with the national Five Year Plan, the Ministry of Health and Family Welfare prepares a Strategic Investment Plan (SIP) which sets out the sector's strategic priorities and defines an overall strategic framework to guide investments in the health sector accordingly. The SIP provides a framework for health service delivery, planning, budgeting, implementing and monitoring for the five-year-long sectoral programmes. One of the focuses of the SIP is medium-term planning and budgeting. Medium-term planning intends to draw a link between revenue and the development budget and between Government and other (internal and external) sources of funding. Like the national budget, the health budget is compartmentalized into revenue and development budgets. The revenue budget includes the budget for salary, wages, and allowances for functionaries and maintenance costs, while the development budget is programme-based. However, Ministry of Health and Family Welfare revenue and development budgets are still prepared independently and on different timelines (MOHFW, 2004). The SIP is intended to provide the basis for Policy Implementation Plan preparation and health sector investments over the next five years; thus, the SIP is an operational

document for the Five Year Plan. The SIP is prepared with input from both internal and external stakeholders, with the objective of defining the Government's intentions for the health sector as the basis for negotiating assistance from development partners in the medium term. It also provides inputs into the Five Year Plan, National Health Policy and operational programmes like HNPSDP.

For the preparation of both the plans and programmes, certain participatory techniques are adopted for securing inputs from the field, but the Ministry of Health and Family Welfare has the authority to make the ultimate decision (Osman, 2004). Broad participation by stakeholder groups has ensured the inclusion of professional and civil society groups, along with experts deployed by key development partners and donors. The last sector programme the country implemented was the Health, Nutrition and Population Sector Programme in 2003–2010. Each health sector programme undergoes mid-term reviews as well as annual reviews by external teams comprised of national and international experts. These also open a window for policy advocates to supply research evidence. The Ministry of Health and Family Welfare has developed the next Sector Development Plan– the HPNSDP – for implementation during 2011–2016 (MOHFW, 2011). The Ministry functions closely with external donor agencies in preparing its plans and programmes, and the field-level health administration provides necessary information.

Human resource planning

Currently Bangladesh does not have a structured policy for human resource planning in the health sector. The Ministry of Health and Family Welfare published the Bangladesh Health Workforce Strategy in 2008. The goal of the Ministry is to implement the HR strategy in collaboration with the private sector, development partners and other stakeholders that work towards the greater good of Bangladesh, and to review it every five years for necessary updates (MOHFW, 2008). The first stakeholder dialogue on Human Resources for Health (HRH) took place in Bangladesh in 2012 with the objective of starting advocacy on the need for an adequate and skilled health workforce for a well-functioning health system, but it has not been effective yet (WHO, 2014).

2.5.2 Role of development partners in planning

In the process of policy development, the Ministry of Health and Family Welfare acts as the apex organization, vested with responsibility for designing national programmes and policies and coordinating and implementing all activities related to health and family planning in the country. In policy formation the Ministry has always been closely influenced by donor agencies, particularly in agenda-setting. Externally-generated issues have ultimately shaped the health policy of Bangladesh. Amongst the internal forces, political parties play the most important role in setting the policy agenda (Osman, 2004).

The SWAp-based HPNSDP for planning and pooling funds has ample room to engage in partnerships with development partners and other stakeholders. The basket of funds comprises pool funds, non-pool funds, the government contribution, and parallel funding mechanisms. The Government has made continuous efforts to harmonize donor support and align it with national plans and strategies. Various joint working groups and technical committees are active within the networks of the sector programme (WHO, 2014).

2.6 Intersectorality

The Ministry of Health and Family Welfare is mainly responsible for managing prevention and treatment of diseases, and medical education. In regard to other sectoral issues, such as access to water, sanitation, adequate food, pollution-free environments, and health education and awareness, various other ministries are involved: the Local Government Engineering Department (LGED) of the Ministry of Local Government, Rural Development and Cooperatives, the Ministry of Food and Disaster Management, the Ministry of Agriculture, the Ministry of Fisheries and Livestock, the Ministry of Water Resources, the Ministry of Environment and Forestry, the Ministry of Women and Children Affairs, the Ministry of Education, and the Ministry of Social Welfare. The Ministry of Local Government provides a significant portion of health services, as it has responsibility for providing public health services, waste management and water supply in urban (city corporation and municipalities) areas, as well as in rural areas through the LGED. Primary health-care services provided directly by the DGHS are confined to those supplied by medical college hospital outpatient departments, district hospitals, government outpatient dispensaries, and maternal and child health services provided by the Family Planning Directorate (MOHFW, 2004). In the planning of the

health sector, these realities were never reflected adequately in the past (MOHFW, 2011). The main policy challenges for urban health are improved coordination between the Ministry of Local Government and the Ministry of Health and Family Welfare, an enhanced stewardship role for the Ministry of Health and Family Welfare with regard to regulation of urban for-profit health services, and strengthened public-private partnerships (MOHFW, 2004).

2.7 Health information management

2.7.1 Health information system in Bangladesh

The Ministry of Health and Family Welfare comprises nine executing authorities (directorates). As noted, two are directly involved with provision of health and family planning services, namely the Directorate General of Health Services and the Directorate General of Family Planning. Four have routine Management Information Systems (MIS):

- MIS Health (DGHS) and its subsystems;
- MIS Family Planning (DGFP) and its subsystems;
- MIS National Nutrition Programme (NNP); and
- MIS 2nd Urban Primary Health-care Programme (UPHCPII).

MIS-Health and MIS-FP are being implemented by the DGHS and the DGFP independently. There is poor linkage between them (both at peripheral and central level), although both provide summarized data to the Ministry of Health and Family Welfare regularly. There is also little coordination with the national statistics office, the Bangladesh Bureau of Statistics.

HIS resources

Policy and planning

No specific written policy exists for MIS in health in Bangladesh, although the country has a legislative framework for health information that covers vital registration and notifiable diseases reporting.

HIS institutions, human resources and financing

Most data management in health and family planning follows the administrative hierarchy of the departments, where service providers at different levels of the health-care delivery system report routine data monthly to the level above them (Health Metrics Network & MOHFW, 2009).

At the central level there is one Line Director MIS at the office of the DGHS. All data from the field (health facilities or communities) are collected, compiled, analyzed and reported from this office to the peripheral level reporting units. Annual and periodic reports are produced by the Line Director MIS-Health to support policy decisions. The DGFP works through administrative structures and institutes at national, divisional, district and lower levels (MOHFW, 2011).

Data sources

A. Censuses

A census is carried out at least once every 10 years and the report published within two years of the data being collected. There is no mortality-based information in the last census.

B. Vital statistics

Although the Government has made birth registration obligatory, the countrywide infrastructure is not well developed due to a shortage of human resources and financial support. The Bangladesh Bureau of Statistics conducts regular Sample Vital Registration Surveys to collect data on births, deaths, and marriages.

C. Population surveys

Periodic population surveys are conducted by the BBS, NIPORT, and BDHS.

D. Health and disease records (including disease surveillance)

Facility-based disease profiles are reported from all health facilities, but this disease profile does not include private sector facilities, which are the prime caregivers in curative health care in Bangladesh. Community-based epidemiological surveillance is conducted for certain diseases such as polio, neonatal tetanus, diarrhoea and few other notifiable diseases.

E. Health service records

The MIS-Health includes service statistics, logistics, human resources and financial information. The service statistics are better organized than other statistics such as human resources, logistics and finance. Previously there was paper-based system for data collection, compilation and onward transmission. Now it is mostly computerized, at least up to subdistrict level Upazila Health Complexes. Separate health and

family planning MIS are maintained in the absence of sharing of routine performance data between these two departments at all tiers of the health system.

F. Other data sources

MIS-Health also collects data from other programmes and organizations for consolidated report preparation and distribution. Information is collected from programmes such as Essential Service Delivery (ESD), Communicable Disease Control (CDC), the noncommunicable disease control programme, the Micronutrient Supplementation (MS) programme, NNP, and Mycobacterial Disease Control Programme; and organizations like the Institute of Epidemiology, Disease Control and Research (IEDCR), Institute of Public Health (IPH), the ICMH, the DGFP, the DGDA, the DNS, and from a number of NGOs (Health Metrics Network & MOHFW, 2009) .

Dissemination and use

The routine MIS-Health publications include Health Bulletin, Year Book on Health, IMCI newsletter, EmOC newsletter, and Voice of MIS-Health. The Digital Health Guidebook is a popular publication. Most of the information collected by MIS-Health focuses on the supply side: what the facilities have done, and what type of inputs they have used. The MIS has not yet been able to track information on the demand side of the equation. Recent hospital reform has introduced some demand-side information (waiting time, perception and satisfaction) into the system. More importantly, the growing private and NGO health sector facilities are by and large beyond the formal MIS of the Ministry of Health and Family Welfare. MIS-Health data is rarely used for health planning purposes. The collected data are of poor quality in terms of timeliness, completeness and accuracy. Managers and policy planners in Bangladesh rely mainly on survey data, not routine MIS data (MOHFW, 2011) .

2.7.2 Health technology assessment

Currently there is no national health technology assessment programme for planning health technology requirements in public or private facilities in Bangladesh. However, the DGHS is trying to engage in the process through participation in regional conferences. A few local nongovernment institutions have conducted research on health technology assessment (Sivalal, 2009).

2.8 Regulation

National health policy provides for the promulgation of appropriate laws, rules and regulations regarding the control, management and quality of services of medical colleges and private clinics. Parliament has enacted various Acts in relation to health services. These can be mainly categorized into communicable disease control acts, drug control acts, medical education acts, health practice acts and environmental health acts. In addition to the Acts, the Parliamentary Standing Committee constituted for the Ministry of Health and Family Welfare under the Rules of Procedure of Parliament (Rule 246) serves as a watchdog of the Ministry. According to Rule 248, the Standing Committee should meet at least once a month to review works relating to a Ministry which falls within its jurisdiction, and to inquire into any activity or irregularity and ensure compliance in respect of the Ministry. However, the absence of the standing committee on health in some regimes, belated committee formation, irregular committee meetings and poor attendance have weakened the effectiveness of parliamentary oversight (Alamgir F, Mahmud T, 2006). In addition to this, the parliamentary committee has also failed to ensure compliance with their recommendations. There is no time limit for the concerned ministries, persons or executive branches to respond to committee recommendations and decisions.

Several Acts and ordinances exist to regulate health service activities. The Drug Ordinance of 1982 brought traditional Unani, Ayurvedic and homeopathic medicinal products under regulatory control. The Bangladesh College of Physicians and Surgeons Order 1972 (Presidents Order No. 63 of 1972) provides guidelines for maintaining and promoting specialist practice of all medical sciences and arranging postgraduate medical training. Nursing services are regulated by the Bangladesh Nursing Council Ordinance 1983.

To regulate private practice and the functioning of the private clinics and private laboratories, the Medical Practice, Private Clinics and Laboratories Ordinance 1982 was promulgated. The ordinance prescribes the process of application, the criteria for issuance of licenses for running private clinics, and lays down the maximum charges and fees for private practice, private clinics and private laboratories, rules on inspection of private facilities, and penalties for violation of the rules.

There also exist certain rules and laws to regulate the activities of NGOs. The Government regulates the organizations through (i) Voluntary Social Welfare Agencies (registration and control) Ordinance 1961; (ii) the Foreign Donations (voluntary activities) Regulation Ordinance 1978; and (iii) the Foreign Contribution (Regulation) Ordinance 1982. NGOs need to be registered with the Department of Social Services/NGO Affairs Bureau. In the case of health and family planning projects receiving foreign assistance, NGOs are to obtain clearance for their projects from the Economic Relations Division of the Ministry of Finance and the Ministry of Health and Family Welfare (Shahid AM, 1997).

Table 2.1 on the next page summarizes the major regulatory authorities in the health sector in Bangladesh.

Table 2.1 Main regulatory authorities in the health sector in Bangladesh

Name of Agency	Function
Ministry of Health and Family Welfare	Set standards
Director General Health Services	License health facilities to function License the administration of controlled medicines Approve non-medical and non-nursing health cadre training institutions SOPs for operation of laboratory and diagnostic centres
Director General Family Planning	License the administration of controlled family planning methods
Director Drug Administration	License pharmacy cadres Quality assurance and registration of pharmaceuticals
Joint Secretary Development and Medical Education	Approve medical colleges
Director Homeopathy and Traditional Medicines	Accredit training
Civil Surgeons	Inspectors for health and safety in factories
Bangladesh Medical and Dental Council	Accredit medical colleges for the training of doctors and dentists Register medical and dental officers
Pharmacy Council of Bangladesh	Accredit training institutions for pharmacy cadres
Bangladesh Nursing Council	Register nursing cadres Accredit nursing training institutions
Ayurvedic, Homeopathy and Unani Board	Register practitioners Quality assurance and registration of traditional medicines

Source: World Bank Health Sector Profile 2010

2.8.1 Regulations and governance of third-party payer

The concept of third-party payer is absent in Bangladesh; however, various organizations including the Health Economics Unit of the Ministry of Health and Family Welfare and icddr,b have been conducting research on identifying a health payment mechanism suitable for the country (Ensor 1998).

2.8.2 Regulation and governance of providers

In the arena of medical education and practice, the Medical and Dental Council Act 1980 provides regulations for establishing a uniform minimum standard of basic and higher qualification in medicine and dentistry and

matters connected there with. In addition, different professional regulatory as well as statutory bodies have been established in order to (i) develop skilled manpower (doctors, medical practitioners, nurses and pharmacists); (ii) ensure the standard of health services by regulating the activities of professionals; (iii) protect people's rights; and (iv) ensure access to health services. In this regard, the BMDC, BNC, State Medical Faculty (SMF) and Bangladesh Pharmacy Council (BPC) have evolved to play a stewardship role in health sector governance in Bangladesh.

The BMDC, established in 1980, regulates the registration and awards of medical practitioners and dentists for the purpose of establishing a uniform standard of basic and higher qualifications in medicine and related matters. To ensure the standard of nursing education and practice, the BNC was constituted in 1983. According to the Act, the BNC acts as a national education board to ensure a good quality of education for nurses. The SMF was established in 1914 to coordinate examinations and certify diplomas for compoundership, dressership, paramedical technicians, medical assistant courses, and the awarding of diplomas and certificates to successful candidates of medical assistantships. In 1976, the BPC was established to regulate the practice of pharmacy. The Bangladesh Board of Unani and Ayurvedic Systems of Medicine was established to maintain educational standards at the relevant teaching institutions and to register duly qualified persons.

In practice, these bodies have been struggling with limited legal power and resources. While the BMDC has the power to punish medical and dental practitioners for malpractice, in reality it has failed to enforce its power to regulate professional behaviour, although negligence and malpractice by doctors is quite frequent.

Moreover, the BMDC cannot act independently, but requires approval from the Ministry of Health and Family Welfare. The BMDC also cannot initiate independent investigations against doctors working in government/public hospitals. It can only issue "show cause"notices to the director of the concerned hospitals. If the hospital forms a committee to investigate the complaints, the BMDC has to follow the decision of the committee.

The SMF has been authorized to issue diploma certificates since 1962. The SMF is the authority for approving all medical courses in the country. In reality, the authority of the SMF is ignored by the Ministry of Health and Family Welfare and Bangladesh Technical Education Board. Currently

any institute which intends to provide diploma certificates has to acquire permission from the health ministry for approval from the state medical faculty. This two-tier approval system is time-consuming for potential medical educational institutions.

Despite the existence of various institutions assigned with regulating the behaviour of health-care providers and standardization of services, in practice regulatory power is highly concentrated at the health ministry. The stewardship role of the public sector is constrained by a weak legal framework and the institutional inadequacies of regulatory functionaries.

2.8.3 Registration and planning of human resources

Doctors and dentists are registered by the BMDC after graduation and completion of internship, while nurses are registered by the BNC after graduation. The registration is to be renewed every 10 years, but no licensing examination is held.

The Ministry of Health and Family Welfare decides admission policies for the graduation courses of physicians and dentists for both public and non-public institutions, while the curricula are approved by the BMDC. Currently, 23 government and 54 private medical colleges are engaged in offering graduation degrees to the physicians, with an annual intake of 3010 doctors (DGHS, 2012). The medical course is five years plus one year in-service pre-registration training. As per the BMDC Act 1980, the BMDC accredits medical colleges for training of doctors and dentists and regulates the registration and awards of medical practitioners and dentists for the purpose of establishing a uniform standard of basic and higher qualifications in medicine and related matters. The BNC, on the other hand, approves the curricula of nurse training and education and offers registration to trained nurses.

Various health technicians such as laboratory technicians, pharmacists, radiographers, blood bank technicians, physiotherapists, medical technologists and occupational therapists are employed in the health system. Health technicians are one of the most significant auxiliaries to the health system. The DGHS arranges three-year diploma courses for pathologists and radiologists. After obtaining the diploma degree they are appointed as medical technologists. They are directly recruited by the DGHS and deployed in both rural and urban areas.

The Ministry of Health and Family Welfare prepares admission policies for alternative medical doctors (homeopathic and Unani/Ayurvedic). The Bangladesh Homeopathic Board approves curricula for homeopathic courses and Bangladesh Unani and Ayurvedic Board approves curricula for Unani-Ayurvedic courses. Both boards are appointed by the Ministry of Health and Family Welfare.

As of today, Bangladesh does not have any comprehensive and independent policy document on HRH. Various health sector policy documents developed at different times in response to diverse global and local contexts have provided guidelines for managing human resources. Currently, the revised 2011 Health Policy and the Sixth Five Year Plan (2011–2015) provide guidelines for HRH planning. Broadly, during the last two decades, the HRH policy has experienced a shift of focus from emphasizing the expansion of the workforce to improving their efficiency through training and education, and from imparting training to doctors and nurses to providing training to community health workers like midwives. In recent years, HRH policy has focused on the deployment as well as retention of health staff in rural areas, ensuring an appropriate skill mix and equity in distribution of human resources.

Since independence, development partners have played a lead role in HRH policy formulation, especially at the stage of idea generation. The medical profession, the next dominant set of actors, has over the years played the determining role in the increased production of doctors. The third set of key actors are the bureaucrats and the politicians who attempt to rationalize the role of the doctors through imposing various rules and regulations. Support staff – nurses and field level health workers – do not get scope for meaningful participation in policy-making. As a result their interests are mostly left unattended. This unbalanced power composition in the policy process has a significant influence on policy performance.

2.8.4 Regulation and governance of pharmaceuticals

The DGDA is the supreme regulatory authority in the country for drug-related affairs such as licensing, production, import, export, quality control and pricing. (DGDA, 2014). In the recently reorganized structure, the DGDA is headed by a director general, who is assisted by four directors, responsible for manufacturing, registration and import/export including administration and licensing, veterinary, quality control and surveillance, and drug testing. There are two drug testing laboratories

– one in Chittagong under the DGDA and another one in Dhaka under the DGHS' Institute of Public Health. These ill-equipped laboratories are supposed to test the quality of pre-registration as well as post-market drugs. The regulatory mechanism for the production, marketing and use of drugs is limited by the Drugs Act 1940 (and the rules made under it in 1946) and the Drugs (Control) Ordinance 1982 (DGDA, 2014).

Pricing of drugs

One of the main objectives of the National Drug Policy of 1982 was to make quality essential drugs available at an affordable price. Since the introduction, a pricing committee with experts from stakeholder groups decides on the price of locally-produced drugs and also endorses the prices of imported drugs/non-essential drugs produced locally after review. From 1981 to 1991, the retail price of drugs increased by only 20% in local currency. However, this trend could not be sustained. The drug policy committee was restructured with greater inclusion of corporate interests, which ultimately changed the spirit of NDP 1982 ("quality drugs at low cost"). The first revision of the Essential Drugs List in 1993 reduced the number of regulated drugs to 117, while the second revision in 2007 increased it to 2009, which resulted in a loosening of control in fixing the prices of non-essential drugs in particular, and all drugs in general. Currently, the government fixes the maximum retail prices of 117 listed essential drugs (MOHFW, 2008). For other "non-essential"drugs, an "indicative price"is fixed by the pharmaceutical companies themselves (inflating hugely the profit margin), to which the government adds 15% VAT, resulting in a steady increase in prices. Since 2010, the leading pharmaceutical companies have significantly increased the prices of drugs, including commonly used drugs (e.g., the cost of a Square or Beximco paracetamol tablet strip of 10 increased from BDT 8 to 10–12), on the basis that raw material import has become costlier because of the appreciation of US dollar in the country (Embassy of the Kingdom of the Netherlands, 2012).

2.9 Patient empowerment and accountability

2.9.1 Patient information

The level of patient information available in the public domain is very poor in Bangladesh, and health-care providers of all categories are reluctant to supply the required information to their patients. Studies have shown that a lack of appropriate information about the availability of health services is an important barrier to accessing health care (Jahan, 2000).

Health systems are not responsive and are not obliged to inform patients or their relatives about the condition of the patient, the treatment to be started and the prognosis of their illness. Health education campaigns on preventive issues such as immunization, family planning, hand washing and sanitary practices, etc. are frequent and conducted by both public and private nonprofit sectors. When there is an epidemic (e.g., diarrhoea, avian influenza), intensive health education campaigns on disease transmission and prevention are also organized as an epidemic control measure. However, due to the country's low literacy level, achievement of health literacy in its true sense (capacity to internalize information provided by health education campaigns or otherwise for informed health-related decision-making) is mostly limited to the educated section of the population (Wolf, Gazmararian et al., 2005). Health-related information is mostly provided in Bangla, and in some cases English. It is blind to any other languages spoken by ethnic minorities.

2.9.2 Patient choice

Bangladesh has formal and informal health-care providers providing outpatient and inpatient care. Health-care expenditure by patients is mostly OOPP, and thus patients have the liberty to choose any provider ranging from a qualified medical doctor to a faith healer. Informal providers are more prevalent in rural areas, as opposed to public facilities, and there are a wide range of options among the unqualified providers, such as village doctors, drug sellers, traditional birth attendants (TBA) trained or untrained, traditional healers (including faith healers), homeopaths, and others (circumcision practitioners, ear cleaners, tooth extractors, etc.) (Ahmed, Hossain et al., 2009; Rahman, Islam et al., 2011). About 75% in rural areas and 84% in urban areas depend on private, small, informal health-care service providers who are mostly semi-skilled with no professional training. In Bangladesh, 13% of treatment-seekers use government services, 27% use private/NGO services, and 60% use unqualified services (Cockcroft, Milne et al., 2004). Easy access, low-cost treatment, and availability of the provider on demand are some of the factors that drive patients in choosing an informal provider over a formal provider in rural areas (Hamid, Sadique et al., 2005). The private sector is booming in urban areas in Bangladesh and there has been 15% growth in privately-run facilities between 1996 and 2000 (MOHFW, 2003). Unavailability of doctors and nurses, their attitudes and behaviour, lack of drugs, waiting time and travel time contribute to the low use of public hospitals in general; albeit the overall

patient load in public medical college hospitals is higher than that in other general hospitals due to the availability of specialist services and their low cost (Rannan-Eliya, Somanathan, 2003).

2.9.3 Patient rights

The HPNSP proposed a number of activities aimed at strengthening consultations with communities and stakeholders, particularly the poor and women, in order to make their participation more effective. The following mechanisms for promoting the voice of the community were suggested.

National Health Service Users' Forum

This was proposed and specified by the HPNSP with the aim of promoting government and civil society initiatives, including a patients' charter of rights and health watch groups. The Forum was designed to involve all stakeholders – government, service providers, clients and communities – in working together to organize their own services through public health facilities. Forums were also planned, to be established at the local levels, and were expected to form the basis for local planning, monitoring and evaluation. However, the concept has remained a policy document without being implemented (World Bank, 2010).

Health Advisory Committee

This mechanism was established under the HPNSP for promoting community voices and ensuring accountability of service providers through oversight. Health Advisory Committees chaired by Members of Parliament were to be composed of elected public representatives, service providers, local government officials and NGOs. The committees were to meet and oversee service provision in health facilities and provide recommendations up to Line Directors and the Secretary of the Ministry of Health and Family Welfare. These committees for the most part have not been active because of limitations of membership, information and resources (World Bank, 2010).

Citizens' Charter of Rights

This was developed at the initiative of the Ministry of Health and Family Welfare, emphasizing the citizens' rights to health. In 2004, the Ministry and some NGOs launched a media campaign to publicize the charter, the latest version of which was published in 2007. The charter introduced a standard set of clients' rights to health-care services. Individual charters covering services at medical college hospitals, district hospitals, Upazila

Health Complexes and union subcentres have also been developed. The charters suffer from some drawbacks: (i) they lack institutional and legal mechanisms for use both by citizens and the Government; (ii) the majority of the population, including service providers, are unaware of their existence; and (iii) they were developed by a small group of Government and health service personnel without the involvement of the community. Currently, the Citizens' Charter of Rights serves only to display information (World Bank, 2010).

2.9.4 Complaints procedures

There is no formal body for arbitration of complaints against health providers in Bangladesh. Any complaint or dispute received by a hospital or clinic authority is dealt with independent of involvement by Government or legal entities, and is often resolved through mutual understanding. Non-state actors including NGOs, civil society organizations, consumer associations and the media usually play an active role in amplifying the voices of the poor to make service providers accountable, and to generate information through public disclosures (World Bank, 2010). A few important initiatives have been taken by the Government to increase accountability of health-care providers in recent times, as follows.

The Bangladesh Health Watch (BHW) is a civil society network formed in 2006 to establish a tradition of holding the State as well as non-state actors to account for their performance in delivering quality health care to the citizens. BHW produces an annual report on the state of health in Bangladesh focusing on a theme that deserves priority attention. The intent of the BHW is to raise awareness about aspects of the theme and catalyze concrete action to address these challenges so as to bring about better health services delivery to citizens. BHW has produced three Health Watch Reports – 2007 Health Equity, 2008 Health Workforce and 2009 Healthy Governance. The Secretariat to the Health Watch is located in the James P Grant Public Health School of BRAC University (World Bank, 2010).

The Reality Check, started in 2007, is structured as a qualitative longitudinal "listening"study over five years. The overall goal of the Reality Check is to listen to and understand the perspectives of people living in poverty on national health and education programmes in Bangladesh. It gathers the experiences, opinions and insights of people living in poverty, which complements the more conventional monitoring and evaluation mechanisms within the Health and Education SWAps.

2.9.5 Public participation

The Ministry of Health and Family Welfare in both the HPSP and in HNPSP has emphasized the role of community empowerment in making health services responsive, effective and need-based. The HPSP considered clients to be the main stakeholder and emphasized their inclusion in planning and implementing service delivery. The service provider was the other stakeholder. The HPSP also emphasized increasing the involvement of local communities in delivering several elements of the Essential Services Package, for instance the EPI and MCH, by including their representatives in various management committees. During the period of HPSP, the major community empowerment initiatives included the following.

Community Groups

During 1998–2001, under HPSP, around 11 000 community clinics were established throughout the country for providing basic primary health-care services at the village level. These clinics were to have been managed jointly by government representatives and local people through Community Groups that were formed for the purpose.Group members were given orientation and training. However, with the change of government in 2001, the functioning of the community clinics was discontinued. Since 2009, with the advent of the current Government, these clinics are being reactivated and Community Groups formed once again (World Bank, 2010).

Local-level planning

Introduced during HPSP, local-level planning was aimed at involving local communities in the planning process, effectively utilizing local resources and reflecting local needs in the national plans.It was meant to serve as a monitoring tool for managers at the upazila and district levels. Implementation of local-level planning has so far been largely limited to training and developing a toolkit. Problems encountered included inadequate capacity for assisting upazila managers in planning, weak supervision, and limited understanding of the overall objective of local-level planning among programme managers. Implementation of local-level planning and budget piloting in six districts and 14 upazilas is at the stage of preparation. The Ministry of Health and Family Welfare has decided to form a national committee and six district committees to carry forward the task of decentralizing planning (World Bank, 2010).

National Stakeholder Committee

This was formed in 1999 under HPSP along with a number of community-based stakeholder committees in pilot unions and upazilas. The objectives of the pilot committees were to: (i) ensure participation of health service users and other stakeholders in the implementation and monitoring of HPSP; (ii) facilitate transparency; and (iii) establish a basis for programme accountability. However, the involvement of health service users was low. The National Stakeholder Committee hardly met and the community-based committees did not receive any official support. A strategy for stakeholder participation could not be developed because the consultative process was given low priority (World Bank, 2010).

2.9.6 Patients and cross-border health care

There is no policy for cross-border health care in Bangladesh. Patients who need to arrange access to health facilities outside Bangladesh bear the cost of treatment from out-of-pocket. Although health services are improving in both public and private sectors, medical tourism is quite popular among those who can afford to pay (Ali MM, Parvin R, 2010).

3 Financing

Chapter summary

According to the latest Bangladesh National Health Accounts, Bangladesh spends US$ 2.3 billion on health, or US$ 16.20 per person per year, of which 64% comes from out-of-pocket payments (MOHFW, 2010). WHO estimates that currently Bangladesh spends US$ 26.60 per capita in total. Public funds for health are the main prepayment mechanism for risk-pooling, and constitute 26% of total health expenditure. The other major funding source is international development partners. Chronic underspending of the Ministry of Health and Family Welfare's budget indicates inefficiency in utilization of resources, as observed in a public review of the health sector (MOHFW, 2011).

Except for through the public budget, very few of the existing funding mechanisms of Bangladesh (0.2% of total health expenditure), private or public, use any prepayment method such as health insurance. Several community initiatives for ensuring low-cost services have been initiated. While a number of private insurance companies offer individual and group insurance to private persons and corporate clients, these health insurance initiatives cover a very small share of the total population of Bangladesh.

The statutory health-care system of Bangladesh in principle covers all citizens with a range of services. However, many sick people every year are left untreated in practice. In response to insufficient and unsatisfactory services in the public sector, private initiatives have been taken since the 1980s. The cost of services in private health facilities is unaffordable to many poor people. Bangladesh, therefore, still needs to travel a long way to reach universal health coverage. The first ever health-care financing strategy has addressed how to generate new resources for health, how to ensure efficient and equitable utilization of resources, and how to utilize financial risk protection to achieve universal health coverage (MOHFW, 2012). In its 20-year implementation period (2012–2032), the strategy aims at a reduction of OOPP from 64% to 32% of total health expenditure, an increase in government expenditure from

26% to 30%, an increase in social protection from less than 1% to 32%, and reduced dependence on external funds from 8% to 5%. The strategy provides a pathway to achieve universal health coverage in Bangladesh by providing universal financial risk protection.

3.1 Health expenditure

National estimates on internationally comparable health expenditures are available from 1997 to 2007 through the Bangladesh National Health Accounts (BNHA). Since 1998, Bangladesh has conducted three rounds of National Health Accounts (NHA) covering the period 1997–2007. The fourth (ongoing) round, expected to be produced by August 2014, is based on the System of Health Accounts 2011 framework.

However, the BNHA estimate for public spending on health for 2007 is significantly different from WHO estimates for 2008 (see Table 3.1). The main reason for this difference, firstly, is that BNHA estimates are based on actual expenditure while WHO estimates are based on budget allocation. Often the original budget is revised downwards and the revised allocation is also not fully utilized. Secondly, the development budget suffers from double counting in case of Direct Project Aid (DPA). For example, some aid agencies channel funds to UN agencies. The same amount may have appeared twice under both funding agencies. Thirdly, some aid agencies which provide funds through DPA spend money for their own overheads (in-country and at headquarters) which is not captured in the statement for DPA expenditure. The first two factors cause WHO estimates to be higher while the third reason causes BNHA estimates to be lower.

According to BNHA estimates, total health expenditure in nominal terms grew from BDT 48.7 billion (US$ 1.1 billion) in 1997 to BDT 160.9 billion (US$ 2.3 billion) in 2007 (HEU, 2010). In per capita terms, THE was US$ 16.20 in 2007 and US$ 9.20 in 1997. Currently Bangladesh spends US$ 26.60 per capita, according to WHO NHA estimates.

The period 1997–2007 coincides with the implementation of two sector-wide programmes. 1998–2002 was the implementation period of the first such programme, the HPSP, and 2003–2007 was the first half of the implementation period of the second sector-wide programme, the HNPSP. Therefore, 1997 can be considered the baseline for the first sector-wide programme. Further analysis of change and trends in health expenditure considered these distinct time periods.

THE in nominal terms grew at a faster pace during 2003–2007 (14.2%) than during 1998–2002 (11.2%). However, when considered in real terms, THE grew at a faster rate during 1998–2002 (8.5%) than during 2003–2007 (7.6%). Per capita THE in nominal terms grew at 9.7% annually during 1998–2002 and at 12.4% annually during 2003–2007. Per capita THE growth rate in real terms was 7% during 1998–2002 and 6% during 2003–2007 (HEU, 2010).

THE grew at a faster pace than the GDP during 1998–2007, both in nominal and real terms. During this period, THE grew at 12.7% annually in nominal terms and at 8% annually in real terms, while the GDP growth rate was 10% in nominal terms (MOHFW, 2010). Similarly, per capita THE grew at a higher pace (11%) than per capita GDP (8%) (HEU, 2010).

Table 3.1 Trends in health expenditure in Bangladesh, 1997–2011

	National reports					WHO estimates			
	1997	2000	2003	2005	2007	2008	2009	2010	2011
Total Health Expenditure in PPP$ per capita	20	24	30	37	46	52	58	61	67
Total Health Expenditure in US$ per capita	9.2	10.1	115	13.7	16.2	19.4	22.4	24.8	26.5
Total Health Expenditure as % of GDP	2.7%	2.8%	3.0%	3.2%	3.4%	3.5%	3.7%	3.7%	3.7%
Mean annual growth rate in THE		10%	8%	15%	16%	-	-	-	-
Mean annual growth rate in GDP		8%	10%	11%	14%	-	-	-	-
Public expenditure on health as % of THE	36%	31%	28%	26%	26%	36%	37%	37%	37%
Public expenditure on health as % of GDP	1%	1%	1%	1%	1%	1%	1%	1%	1%
OOP as % of total health expenditure	57%	59%	61%	64%	64%	62%	61%	61%	61%
NGO expenditure as % of THE	1%	2%	2%	2%	1%	-	-	-	-
External assistance to NGOs as % of THE	5%	7%	9%	8%	8%	-	-	-	-
Other private expenditure as % of THE	1%	1%	1%	1%	1%	-	-	-	-

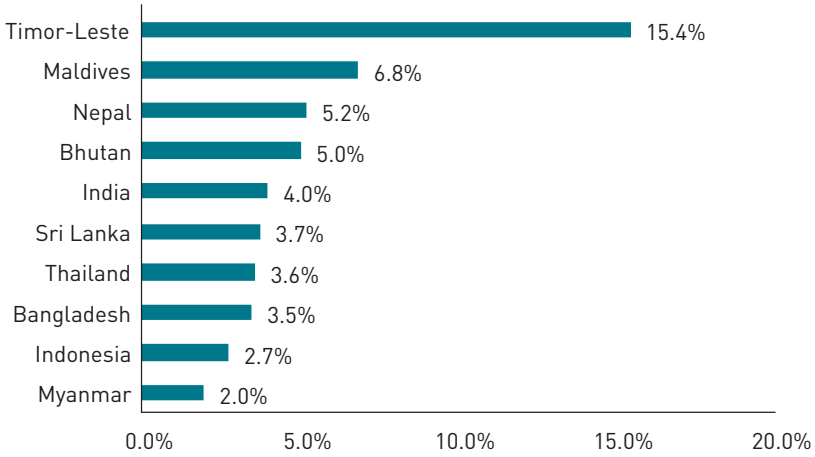
Source: MoHFW, 2010; World Bank, 2012a

Despite the impressive growth in health spending, throughout this period THE in Bangladesh as a share of GDP has remained one of the lowest in WHO South-East Asian Region, higher only than Myanmar and Indonesia (Figures 3.1).[1]

1 For regional comparison WHO NHA estimates have been used

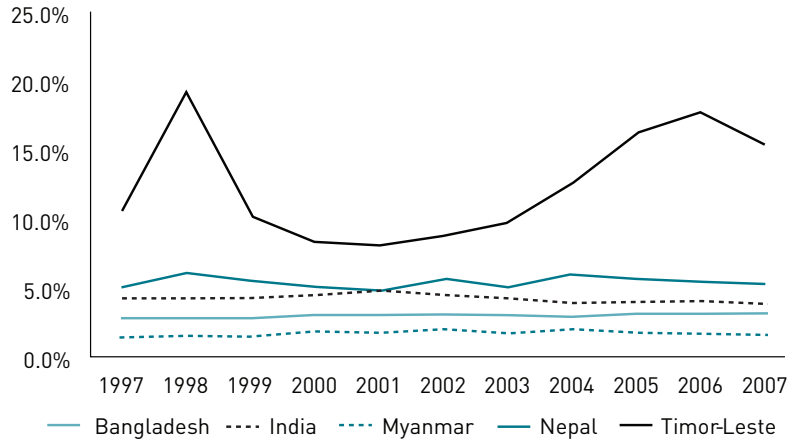
For comparison, countries in the Region with GDP per capita comparable to Bangladesh have been selected. Figure 3.2 shows that throughout the period 1997–2007, THE as a share of GDP in Bangladesh has remained among the lowest in the Region, ahead only of Myanmar.

Figure 3.1 Total Health Expenditure as a share of GDP in WHO SEA Region, 2007



Note: According to Bangladesh NHA estimates in 2007 THE accounted for 3.4% of GDP while WHO NHA database shows 3.5%. *Source:* WHO NHA Database

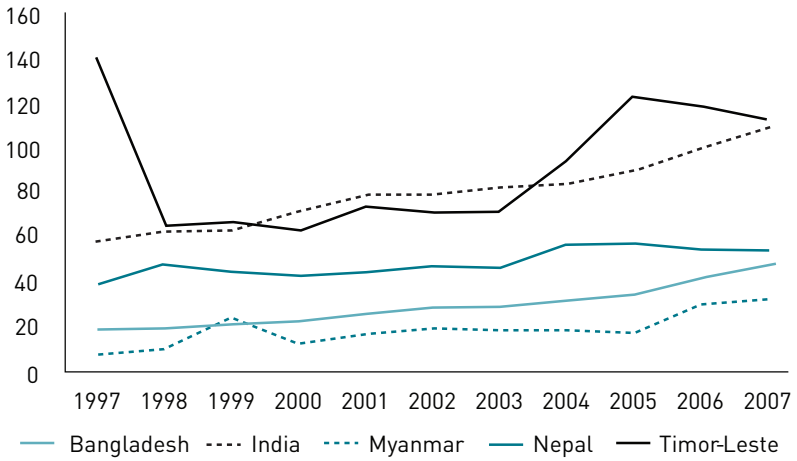
Figure 3.2 Trends in THE as a share of GDP in Bangladesh and selected SEAR countries, 1997–2007



Source: WHO NHA database

THE measured in Purchasing Power Parity dollars (PPP$) in Bangladesh is also one of the lowest per capita among the countries of the region, only higher than Myanmar (Figure 3.3). WHO NHA estimates slightly differ from Bangladesh NHA estimates for per capita THE in PPP$. Per capita THE in PPP$ in 2007 according to WHO NHA is PPP$47.4, while Bangladesh NHA estimates it to be PPP$ 46.

Figure 3.3 Health expenditure in US$ PPP per capita in the WHO SEA Region, 2007



Source: WHO NHA database

However, if a comparison is made with outcome indicators such as maternal and child mortality, Bangladesh has obtained high value from its low health spending compared to other countries in the region (World Bank 2009).

Public expenditure

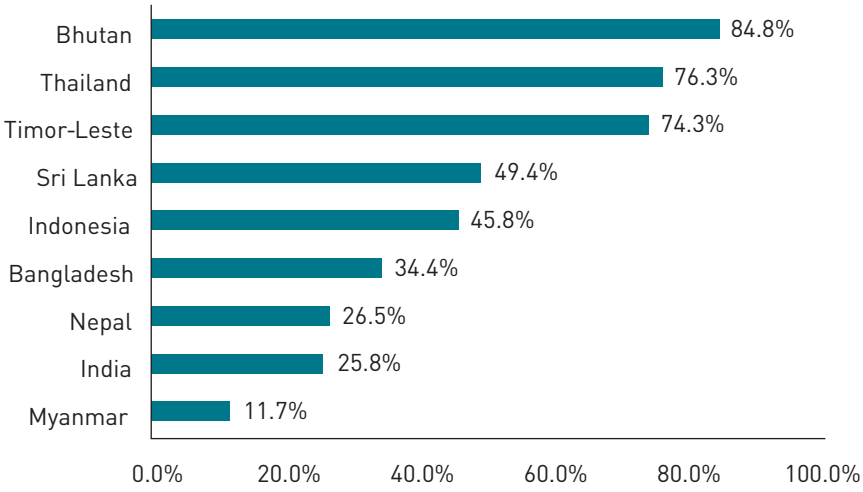
The public sector has remained the second-largest financing agent since 1997 (MOHFW, 2010). However, public expenditure on health in Bangladesh, according to BNHA, decreased from 36% in 1997 to 26% in 2007 (Table 3.1), although in absolute terms it grew at an average rate of 9% annually. This is a slower rate than the growth rate of private finance (14.5%) during 1998–2007.

During 1997–2007, public expenditure on health as a share of GDP remained flat at around 1%. The elasticity of nominal public spending on health in relation to nominal GDP during 1997–2007 is estimated to be 0.93. This implies that a 1% increase in GDP is associated on average

with a 0.93% increase in public expenditure on health. This is very low compared to the average in other low-income countries (Tandon and Cashin, 2010).

To compare public expenditure on health as a share of THE in the WHO South-East Asia Region, WHO NHA estimates are used. Figure 3.4 shows that public expenditure on health as a share of THE in Bangladesh was higher than in Myanmar, India and Nepal. WHO NHA estimates (34.4%) for public spending on health as a share of THE are much higher than the Bangladesh NHA estimates (26%) due to differences in what is counted as public expenditure on health.

Figure 3.4 Public sector health expenditures as a share of THE in the WHO SEAR, 2007



Source: WHO NHA database

An examination of the composition of public expenditure on health reveals that during 1997–2007, public spending on medicines and medical goods increased almost 7–fold as an absolute amount, and as a share of total public expenditure on health it increased from 5% in 1997 to 14% in 2007. Public spending on public health and prevention almost doubled as an absolute amount, but as a share of THE decreased by 8% (Table 3.2). The share of hospital care (including inpatient and outpatient care) remained at one third of THE.

Table 3.2 Public health expenditure on health by service programme, selected years

Service program	% of public expenditure on health		% of total health expenditure	
	1997	2007	1997	2007
Inpatient care	20	21	7	5
Outpatient care	13	12	5	3
Medicines and medical goods	5	14	2	4
Health administration and insurance	5	4	2	1
Public health and prevention	35	27	13	7
Capital formation	18	18	7	5
Health education and training	3	4	1	1

Source: MOHFW, 2010

Fiscal context

Fiscal context refers to the capacity of the Government to finance the health sector. The more money the Government has, the more money it can spend on health. Sustained economic growth usually leads to increases in Government spending on health. Even if Government health spending as a share of GDP remains the same, Government health spending in real terms will grow at the same rate as the real GDP growth rate given that the changes in price of health are not significantly different from the changes in overall price level (Tandon, Cashin, 2010).

Government health expenditure as a share of GDP has remained stagnant at around 1% of GDP between 1997 and 2007 despite sustained economic growth. Government health spending in real terms grew at around 4.7% while real GDP grew at 5.6% per year during the same period. This indicates that economic growth alone may not be adequate for increasing Government expenditure on health.

Besides economic growth, other fiscal factors such as revenue generation, fiscal deficit and debt are also important for fiscal context. The revenue–GDP ratio and tax–GDP ratio indicate revenue generation capacity. During past decades, both ratios for Bangladesh have been the lowest in the region and lower than the average for low-income countries. In Bangladesh between 2000 and 2012, the revenue–GDP ratio increased from 9.6% to 12.6%. The tax–GDP ratio increased from 7.9% to 10.5% between 1997 and 2012 thanks to an expansion of the tax net and improvement in tax collection administration.

The budget deficit has remained below 5% of GDP, and the public debt–GDP ratio has been declining throughout the last decade due to prudent fiscal management (World Bank, 2012). The latter trend implies that fewer resources are required for debt servicing.

Despite increases in the revenue–GDP ratio and tax–GDP ratio of more than 2%, the health sector budget has never exceeded 7% of the total government budget. Recently, allocation to the health sector has been further reduced to less than 5% of the total government budget due to other competing needs, especially increased subsidies (MOF, 2013). Subsidies accounted for 3% of GDP in 2012 (World Bank, 2012).

3.2 Sources of revenue and financial flows

Like many other countries, funding for health comes from several sources through different mechanisms and the payments are made to different types of health-care providers. The financing of health care in Bangladesh is dominated by out-of-pocket payments, the Government's revenues, and development partners' funding directly to NGOs (Table 3.3).

Table 3.3 Sources of revenue as a percentage of total expenditure on health by financing agent, selected years, 1997–2007

Source of revenue	1997	2000	2004	2007
General government expenditure on health (GGHE)	36	31	29	26
MOHFW	35	30	28	25
Out-of-pocket expenditure (OOP)	57	59	60	64
Nonprofit institutions (e.g. NGOs)	1	2	2	1
Private insurance	0.1	0.1	0.2	0.2
Private firms	1	1	1	1
Rest of the world funds/external resources to NGOs	5	7	9	8

Source: MOHFW 2010

Public spending on health is financed from national tax, foreign development funds, and corporations and autonomous bodies. Tax and non-tax revenue and foreign loans and grants are channelled by the Ministry of Finance to the Ministry of Health and Family Welfare and other ministries. Figure 3.5 (page 64) illustrates the funding flows from the sources of revenue to the expenditure.

Public expenditure is financed from the non-development or revenue budget and the development budget[2] or Annual Development Programme (ADP). The ADP reflects donor financing. The share of non-development budget in the total Ministry of Health and Family Welfare budget was 49% in 1996–1997, which increased to 60% in 2011–2012. The non-development budget is solely financed by the government, while the ADP is financed by the Government and donors. Donor contribution to the ADP was 44% in2010–2011, which increased to 54% in 2012–2013. See details about donor financing in section 3.6.2.

According to several public expenditure reviews of the health sector, a substantial proportion of the ADP allocation for the Ministry of Health and Family Welfare remains unspent (MOHFW, 2011). However, a recent change in this trend is noted. For 2012–2013, utilization of the ADP allocation to the Ministryis 91%, which is in line with the utilization of the total ADP (96%). This rate is the highest in 17 years due to greater efficiency in the overall ADP utilization of the Ministry (PMMU, 2013).

The chronic underspending of ADP before 2012–2013 was due to poor absorption capacity, delays in fund disbursement, weak capacity in budget planning, especially inflated budgeting (World Bank, 2009), and poor procurement planning causing long processing times and slow spending (PMMU, 2013).

The majority of public sector health financing is dedicated to the Ministry of Health and Family Welfare, which used 97% of total public financing (BDT 41 billion) in 2007. The Ministry, in addition to financing its own providers, also implements health, family planning and maternal and child health activities through transfers and grants-in-aid to NGOs. Under HNPSP, NGOs were contracted to provide nutrition and HIV/AIDS-related services.

Besides the Ministry of Health and Family Welfare, other ministries contributing to the health sector are the Ministries of Local Government, Defense, Home Affairs, Social Welfare and Railways. Other ministries' spending on health was BDT 1.222 billion, which was 3% of total public health spending in 2007 and 1% of THE (MOHFW, 2010).

2 Development budget includes ADP allocation and non-ADP allocation. Non-ADP allocation includes Food For Work and transfers of food sales proceeds.

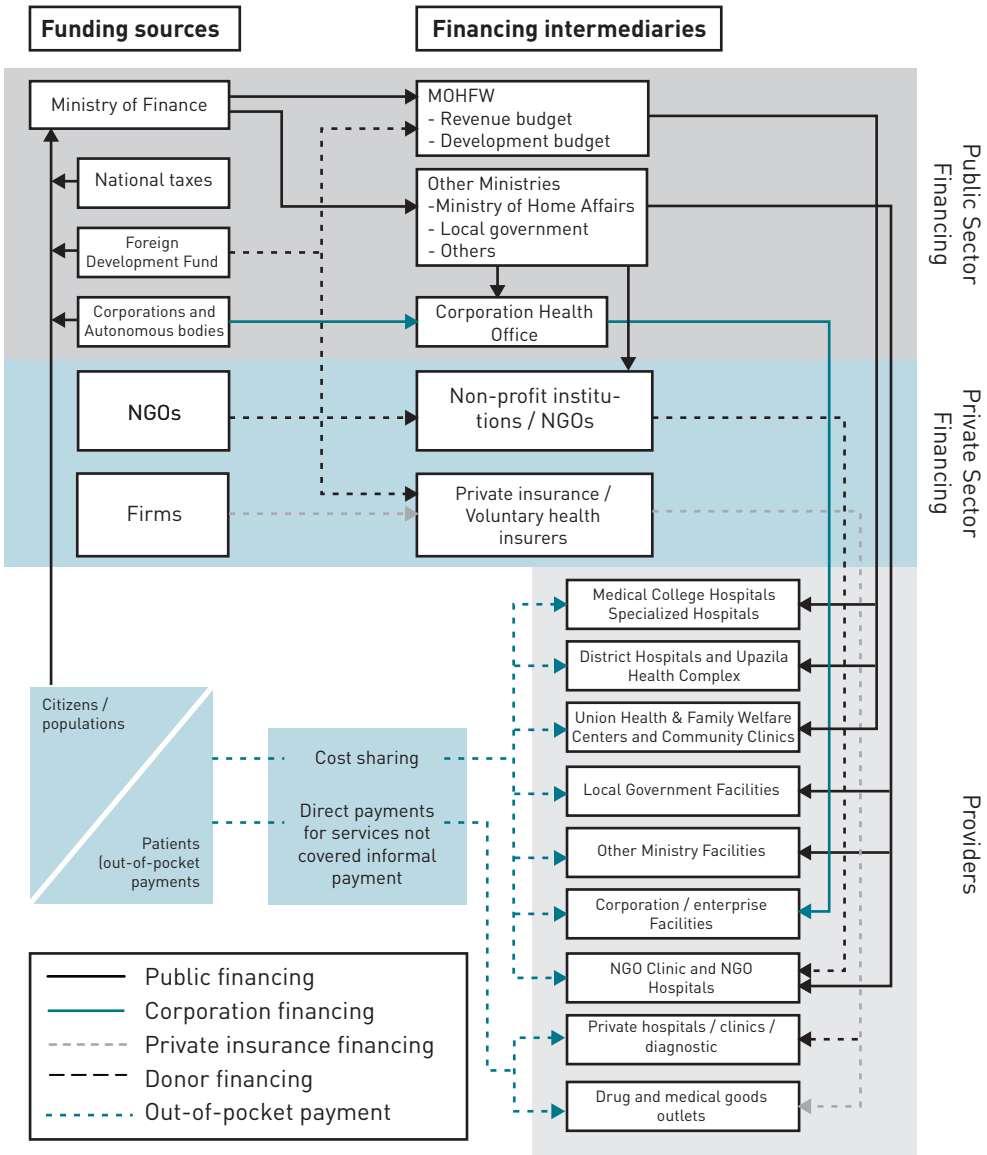
Foreign development partners channel their funds to the health sector through the Government and NGOs. In absolute terms, donor funding to the Ministry of Health and Family Welfare more than doubled between 1998 and 2011. However, as a share of the health sector programme budget, it fluctuated between 24% and 27% over the same period. During 1997–2007, donor grants to NGOs as a share of THE varied between 5% and 8%(MOHFW, 2010).

Households are the main source of financing for health care in Bangladesh, comprising 64% (BDT 103.459 billion) of Total Health Expenditure (THE) in 2007, growing from 57% in 1997. Household expenditures have been rising progressively as a share of GDP, from 1.5% in the late 1990s to slightly over 2% in recent years. Out-of-pocket payments by households and individuals go directly to the providers in the public, private and NGO sectors.[3]

Besides OOPP, other sources of private financing include private firms, private insurance companies and NGOs. As a financing agent, private firms' outlay was BDT 1.325 billion in 2007. Their share of THE has remained at around 1% over the period between 1997 and 2007. Health-care spending by insurance companies was BDT 314 million in 2007, or less than 0.2% of THE. The share of NGO self-financing from their own resources has ranged between 1% and 2% of THE over the 1997–2007 period (HEU, 2010). Private firms' expenditure constitutes mainly of health benefits to their employees and spending on health activities as a corporate social responsibility. The role of private insurance companies as a financing agent is very limited. Social and private insurance comprise a very small proportion of total funding.

3 To avoid double counting, official user fees collected at public facilities are deducted from public sector spending during NHA analysis. Data on user fee collection is obtained from the Ministry of Finance.

Figure 3.5 Financial flow in the Bangladesh health system



Source: Asia Pacific Observatory on Health Systems and Policies

Figure 3.5 describes the pathways of health-care funds from financing sources to health-care providers through financing agents. The Ministry of Finance collects taxes (income, corporate, value-added etc.), tariffs and fees from the citizens of Bangladesh. The main source of finance for the national budget is taxes. MOF allocates funds from the tax-financed national budget annually to the Ministry of Health and Family Welfare and other ministries. The Ministry of Health and Family Welfare then allocates the health budget to health-care providers at different levels, from primary to tertiary and from national to community levels. Other ministries such as Defence and Home Affairs operate health facilities for their employees. Ministries such as Health and Family Welfare, Local Government and Social Welfare channel funds to NGOs to provide health services. Spending on health by other ministries is financed from their respective budgets.

Foreign development partners contribute to the development budget of the Ministry of Health and Family Welfare that finances their health programmes and health facilities. They also finance NGO health services, either by directly providing funds to NGOs or through the Ministry of Health and Family Welfare or the Ministry of Local Government.

Corporations (state-owned enterprises) and autonomous bodies (for example, national universities) finance health care spending from their own budget. Some corporations and autonomous bodies operate their own health facilities, some reimburse employees' medical treatment costs through voluntary health insurance schemes, and some finance health programmes of NGOs as part of their corporate social responsibility.

NGOs allocate funds from their own sources to finance NGO health programmes and health facilities, primarily for providing health care to poor and low-income people. NGOs receive funding directly from development partners and from the Government through ministries such as the Ministry of Health and Family Welfare, the Ministry of Social Welfare and the Ministry of Local Government. NGOs also receive funds from corporations and enterprises to provide health services, especially for target groups such as poor and vulnerable populations.

Some private firms/enterprises develop health funds, which are often transferred to private or voluntary insurance schemes, to secure health care for their employees. Besides financing health insurance, some enterprises operate their own health facilities to provide health care

to their employees or finance NGO health activities as part of CSR. The health funds of NGOs and corporate firms also go to private health-care facilities (hospitals/clinics/diagnostic tests) and drug and medical goods retail outlets to provide services on NGOs' and firms' behalf.

The health funds described above are generally pooled funds, with scope for risk-pooling. Individuals and households fully or partially share the costs of their health care through out-of-pocket payments. When receiving care from public facilities, the patients pay a small user charge; for treatment from private providers, the payments are often fully borne by the patients.

3.3 Overview of the statutory financing system

3.3.1 Coverage

Breadth: who is covered?

According to Article 15(a) of the Constitution, all citizens have the right to medical care. In principle, public health facilities are accessible to all citizens of the country irrespective of their social position, race or religion. Access to health services does not require a contribution, and while all citizens are provided with an identity card, this is rarely checked at the service delivery point.

Scope: what is covered?

Primary, secondary and tertiary medical care is provided in public health facilities through the health service network spread all over the country, from community clinics to tertiary level medical college hospitals and specialized hospitals. Table 3.4 presents the health services that are provided in the statutory system in Bangladesh.

Table 3.4 Health-care services provided by public facilities in Bangladesh

Level of care	Service facility	Services
Primary level care	Ward	
	Community clinics	Maternal and neonatal health care, integrated management for childhood illness, reproductive health and family planning services, EPI, nutrition education and supplement, health education and counselling, identifying severe illnesses like tuberculosis, malaria, pneumonia, EmOC, life-threatening influenza, anthrax etc. treatment of minor ailments and first-aid, referral to union level facilities, upazila health complexes and district hospitals. Out-Patient Services
	Union	
	Hospitals	
	Union Sub-Centre	Out-Patient Department (OPD)
	Union Health and Family Welfare Centre	Out-Patient Department (OPD)
Secondary and tertiary level care	Secondary	
	Upazila (Sub-district) Health Complex	Comprehensive emergency obstetric care services (EOC), gynaecology, anaesthesia, nursing and basic laboratory facilities.
	District hospital	Medicine, surgery, orthopaedics, Eye, ENT
	General hospital	Medicine, surgery, orthopaedics, Eye, ENT
	Tertiary	
	Medical college hospitals	Medicine, surgery, orthopaedics, Eye, ENT, Eye and ENT, ARI, Reproductive care etc.
	Infectious disease hospital	Treatment of infectious diseases
	Specialized hospital	Selected services
	Chest disease/TB hospitals	Chest disease
	Leprosy hospital	Leprosy
	Specialized centers	Selected relevant services
	Specialized hospital affiliated with postgraduate	Selected relevant services
	Other hospitals	

Source: Asia Pacific Observatory on Health Systems and Policies

Depth: How much of the benefit cost is covered?

In public hospitals, the user charge for outpatient consultation is low (BDT 10 per visit). Drugs on the Essential Drug List and some other medicines are free of cost. Hospital beds in the wards are free, but there are charges for shared rooms (BDT 150 per day) or individual rooms (BDT 600 per day). While normally medicines and medical and surgical supplies are provided free of charge, it is common for patients to have to purchase and provide items such as syringes, intravenous fluids, plaster, x-ray plates, and even surgical items such as suture material or dressings when supplies in the facility are inadequate.

3.3.2 Revenue collection

Government revenues are collected from tax and non-tax revenues by the Ministry of Finance. The National Board of Revenue is the agency responsible for tax collection. The central tax revenue budget includes revenue from income tax, corporate tax, VAT, excise duty, import duty, supplementary duty, taxes on vehicles, land revenue and stamp duty. Non-tax revenues are collected from dividends and profits, interest, borrowing from the domestic market, tolls, levies and rents. There are no earmarked taxes for health in Bangladesh.

In 2011–2012, the total revenue receipt of the Government was 114 885 Crore Taka (US$ 1.443 billion)[4]. In Bangladesh, revenue is generated mainly from indirect rather than direct taxes.

The burden of direct taxes in Bangladesh is heavily concentrated on the better-off, both in absolute terms and relative to ability to pay (O'Donnell, Van Doorslaer et al., 2008). The concentration index is around 0.9, indicating that direct taxes are paid almost exclusively by the better-off, and the Kakwani index is about 0.55, suggesting strong progressivity of direct tax. The burden of indirect taxes is also concentrated on the well-off but to a much lesser extent than for direct taxes, as the concentration index (0.5) as well as the Kakwani index (0.1) are smaller but positive (O'Donnell, Van Doorslaer et al., 2008). However, by comparing the results with and without VAT exemptions, VAT in Bangladesh has been found overall to be regressive (Faridy, Sarker, 2011).

4 US$ 1 = BDT 79.6

3.3.3 Pooling of funds

Pooling of revenue mainly occurs at the level of the Government budget, and through the budget preparation process. Some revenue pooling also occurs through the separate health insurance-specific funds operated by public and private employers for their employees.

The Government budget is prepared by the MOF based on an annual Medium Term Macroeconomic Framework (MTMF).Based on the MTMF, the MOF provides an indicative resource ceiling along with revenue targets for each ministry including the Ministry of Health and Family Welfare. On the basis of that indicative budget ceiling, all ministries develop/update respective Ministry Budget Frameworks (MBF). Following review by the MOF and the Planning Commission, each Ministry submits detailed estimates based on the MBF, which become the basis for the budget approved by Parliament.

Individual ministries are responsible for distributing this resource envelope between the revenue and development budgets. Within the Ministry of Health and Family Welfare, the Budget Unit and the Planning Unit prepare the revenue and development budgets, respectively, within the budget ceiling. Though both top-down and bottom-up approaches are followed for preparing budgets, ultimate allocation decisions are made centrally, based on the previous year's actual expenditure, availability of resources and the policy focus of the Government.

In addition to the pooling of funds through public financing, there are a few organizations in public and private sectors that create pooled funds for securing health care, to a certain extent, for their employees. For civil servants, the Bangladesh Employee Welfare Board pools a fund by deducting BDT 90 per month from each employee, against which a certain level of health benefits is ensured. The teachers and students of public universities (such as Dhaka University) access health care through a health insurance scheme to which both employers and employees contribute. Icddr,b ensures health care for its employees with a health insurance scheme including contributions from staff members. BRAC has recently initiated health insurance for its employees against a premium of BDT 150 per month. In the private corporate sector, Grameen Phone among others secure health care for its employees with contributions from the employer. Despite the examples of pooled funds above, it needs to be emphasized that such funds correspond to a very small proportion of the total health-care fund of Bangladesh.

3.3.4 Purchasing and purchaser-provider relations

The Ministry of Health and Family Welfare generally plays the dual role of purchaser and provider, where health services are provided through a range of facilities at different tiers. Salaries of Ministry of Health and Family Welfare personnel are mainly paid through the revenue budget, though salaries of staff under some vertical programmes are also being paid through the development budget. In both cases, salaries remain fixed with no opportunity of performance-based payment. It is only under the Demand Side Financing Programme (the maternal voucher scheme currently operating in 53 upazilas) that health-care providers receive an additional payment per case for providing facility-based delivery care. The cost of medicine and diet at different tiers is paid based on some set norms and are paid through both budgets. Funds are disbursed quarterly to cost centres (for revenue budget) and Line Directors (for development budget) under the two Directorates.

There remain exceptions in a number of programmes where the Ministry of Health and Family Welfare contracts out service provision to NGOs. The National Tuberculosis Control Programme and National AIDS and STI Programmes are two such examples. The Urban Primary Health-care Project, under the Ministry of Local Government, also contracts out to NGOs to provide primary health care to the urban population. The NGOs are chosen through an open competitive bidding procedure for a certain period. These NGOs provide services at a subsidized price to the urban population and are allowed to recover costs through charging pre-agreed user fees for services. However, as per their agreement with the ministry, a certain proportion of their services has to be provided free of cost to the extremely poor.

3.4 Out-of-pocket payments

Health services in Bangladesh remained predominantly financed by households' OOPPs during 1997–2007. OOPP grew at 14% annually, faster than the annual growth rate of THE (12.7%) and GDP (10%). The growing reliance on OOPP leaves the population at risk.

Direct payment for the purchase of pharmaceuticals and medical goods is the predominant contributor to OOPP, either through self-purchase or on the advice of a formal or informal health-care provider. User charges and informal charges are relatively low.

Table 3.5 demonstrates that drug and medical retail outlets (notably pharmacies) were the main recipients of OOPP over the period 1997–2007. Households spent money at pharmacies for several reasons: (i) to purchase medicines prescribed by providers at public facilities where those medicines were not available; (ii) to buy medicines prescribed by private providers; (iii) to buy medicines to self-treat; or (iv) after consulting drug sellers (most of whom are not qualified providers) at pharmacies and buying recommended medicines from them. Spending at pharmacies grew on average 13% annually, although its share of OOPP dropped from 74% in 1997 to 63% in 2007. During the same period, OOP payments at hospitals increased 30% per year, and as a share of OOPP increased fourfold (Table 3.5). This indicates a shift in OOP spending in favour of qualified providers.

Table 3.5 Households' OOP by different providers, 1997–2007

Providers	Year										
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Hospitals	4%	5%	6%	7%	8%	10%	11%	12%	15%	16%	16%
Drug and medical goods retail outlets	76%	74%	73%	72%	71%	70%	69%	68%	66%	66%	66%
Medical and diagnostic facilities	5%	6%	6%	7%	7%	6%	7%	7%	6%	6%	6%

Source: MOHFW, 2010

An analysis of OOP by functions reveals that the share of OOP spending on medicines has decreased over the period 1997–2007 while the share spent on inpatient care has increased (Table 3.6). In absolute terms, OOP spending on medicines increased 13% annually, while OOP spending on inpatient care grew at 26% annually. Spending on inpatient care grew twice as fast as spending on outpatient care. The declining share of medicines and rising share of inpatient care in OOP can be explained by the fact that over the decade,the share of public spending on medicines and medical supplies more than doubled. Moreover, most of the medicines available at the public facilities are provided to inpatients.

Table 3.6 Households' OOP by functions, 1997–2007

Providers	Year										
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Inpatient care	4%	5%	5%	6%	7%	8%	9%	10%	10%	11%	11%
Outpatient care	14%	14%	14%	14%	14%	14%	14%	14%	13%	13%	12%
Ancillary services	5%	6%	6%	7%	7%	7%	7%	8%	7%	8%	7%
Medicines	74%	72%	71%	70%	69%	67%	66%	65%	64%	63%	63%
Medical goods	2%	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%
OOP	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: MOHFW, 2010

3.4.1 Cost sharing (user charges)

A policy initiative was undertaken in 2009 to increase existing user fees and introduce user fees at primary level hospitals, that is, upgraded 50-bed Upazila Health Complexes, and to distribute 50% of some user fees (such as lab test and imaging service fees) among providers such as doctors, nurses and medical technicians. A High Court bench ordered the Government not to increase user fees and also prohibited VAT charges on private clinics/hospitals.

Public facilities are required to deposit collected fees in the treasury. Under several pilot projects, Ministry of Health and Family Welfare facilities were allowed to retain user fees (but only during the pilot stage). User fees do not generate significant amounts of revenue. Bangladesh National Health Accounts 1999–2001 reported that the Ministry of Health and Family Welfare generated BDT 77 million, BDT 89 million, and BDT 125 million as user fees from health and family planning services in 1999–2000, 2000–2001 and 2001–2002 respectively (HEU, 2003). These amounts were below 0.2% of THE estimated for respective years. About BDT 109 million was collected at different Ministry of Health and Family Welfare facilities in 2007, representing only 0.26% of total public health spending in the same year (Begum T, 2012).

3.4.2 Direct payments

OOPPs are mostly direct payments made at private and NGO facilities and also to informal providers. NGOs used to provide primary care, particularly reproductive services, mostly free or at nominal fees. Since the major health-care reforms of the first SWAp (1998–2003), some NGOs have introduced user fees for cost recovery with the aim of sustainability.

In 2007, households spent BDT 16.284 billion at private and NGO providers as direct payment, accounting for 16% of total OOP payments. Households spent BDT 1.987 billion as direct payment to alternative medical practitioners including homeopaths and Ayurvedic/Unani practitioners in 2007 (HEU, 2010). This represents 2% of OOPP.

3.4.3 Informal payments

Various surveys and studies have reported unofficial or informal payments at public health facilities in Bangladesh (Killingsworth, Hossain et al., 1999; Bangladesh Bureau of Statistics, 2011; Rannan-Eliya RP et al., 2012). There are no household survey-based estimates on the extent and volume of informal fees at public facilities. A recent study based on exit patients (funded by the Asian Development Bank and AUSAID) reports that among outpatients, less than 1% reported making informal payments, averaging BDT 0.6. Less than 9% of inpatients reported informal payments, paying BDT 19.0 on average (Rannan-Eliya RP et al., 2012).

According to Rannan-Eliya RP et al. (2012), patients make informal payments for various reasons. These include: (i) to obtain medicines; (ii) to ensure that the doctor or nurse saw the patient; (iii) to ensure that the provider gave the patient better treatment; (iv) to ensure laboratory tests or x-rays were carried out; (v) to transfer from the floor to a bed; (vi) to transfer to a paying bed; and (vii) to obtain assistance for the care of an inpatient. The most common reasons for informal payments cited by patients were to obtain medicines, to get better treatment, and to ensure laboratory tests or x-rays are done (Rannan-Eliya RP et al., 2012).

3.5 Private (Voluntary) health insurance

Health insurance as a mechanism for financing health care has not yet been used significantly in Bangladesh. There are a number of employer operated schemes, both in the public and private sector. These schemes are essentially complementary, covering the costs of user charges and additional payments required in Government facilities or user charges in private facilities.

Government employees

All civil servants are enrolled in a number of limited Government schemes that can be classified as social insurance or payroll-based systems. A sum of BDT 700 is paid monthly as a medical allowance to

each Government employee. A payment of BDT 90 is deducted from the monthly salary of employees for a group insurance and benevolent fund, against which a maximum total of BDT 100 000 can be claimed for expensive medical treatment once in a lifetime period. Further, Government employees are entitled to a reimbursement (not-fixed share) of up to BDT 20 000 for health-care payments from the Bangladesh Employee Welfare Board.

Formal sector employees

The first law regarding sickness and maternity care was passed in 1939, and amended in 1998 as a labor law (SSA, 2012). Employees in manufacturing and in establishments of five or more workers are entitled to certain benefits. Employed women have access to cash maternal benefits. Some employers provide onsite medical facilities and may also use Government hospitals. To be entitled to these benefits, the workers must be in insured employment and the female employees must have an employment of at least six months with the same employer on the expected date of childbirth. The Ministry of Labor and Employment administers the programme, while Public Health Services administer the health services.

A law passed in 1923 and amended in 2006 as a labor law allows provisions for protection against work injuries (accidental injuries and 33 occupational diseases). Employees of railways, docks, estates and factories with five or more workers are covered by this law. Employers are supposed to bear all costs related to this protection. A three-day waiting period is applied before accessing the benefits. The benefit is 100% of salary for the first two months, 66.7% for the next two months and 50% for subsequent months of disability up to one year, whichever is shorter. Recently, the Government started to revise the labor law and changes are expected to be made in the near future. Household workers, self-employed and informal workers are not eligible for these benefits, but are eligible to access the Government-provided public health facilities.

Employment-based health insurance

A number of private companies have started to provide health insurance for their employees. Grameen Phone is one such entity. According to the Human Resources Unit of Grameen Phone, the company provides health insurance to their 4100 employees (approximately) and some 10 000 dependents against a premium, paid solely by the employer in 2012. Entitlement to health-care benefits in terms of number of visits

and hospitalization days has no ceiling, but a maximum of BDT 5000 per hospitalization day can be charged.

Recently, BRAC has initiated a health insurance scheme for its employees (both regular and contracted). Against a premium of BDT 150 per month, the employees, their spouses and dependents (up to age 25) will get specific health benefits. For any hospitalization, a maximum of BDT 100 000 can be claimed, while the beneficiary will bear 10% of total expenditure as well as the amount above the maximum ceiling.

Community financing and not-for-profit health insurance schemes

Bangladesh microfinance NGOs started to introduce health insurance services to their clients in the late 1990s and early 2000s. The important bodies in health microinsurance are Gonoshatho Kendro, Grameen Kalyan, BRAC, Sajida Foundation, Shakti, Dhaka Community Hospital, Nari Uddug Kendra, Dushtha Shasthya Kendra, Integrated Development Foundation and Society for Social Services. Most of the schemes cover loan, life insurance and health insurance. Though most of these schemes reported good rates of operational cost recovery to finance the non-recoverable expenditures, these NGOs have external funding or they are cross-subsidizing the resource gap from their other programme's income (WEEH, 2003).

Private health insurance

Private insurance is limited to a small proportion of overall funding, and was only 0.003% of the formal sector in 1996–1997 (MOHFW, 2003). The proportion is unlikely to grow in near future due to the economic status of the population of Bangladesh. Since private insurance schemes are profit-oriented, these schemes may refuse insurance coverage or charge very high premiums, especially from at-risk groups such as the elderly, disabled or those suffering from serious health problems such as cancer or AIDS. It has a low effect on resource mobilization and equity in the health sector.

Currently, there are about 44 firms listed as insurance companies mainly focusing on general, life and accident insurance; however, limited information is available on the entire inventory of their health insurance products (Rabbani, 2011). The dominant mode of delivery appeared to be group health plans the insurance companies offer to employers, followed by individual policies (while giving group ones additional discounts on premiums) and mediclaim policies for people travelling abroad (as required by the visiting country).

Benefit packages are often connected to a range of financial benefits in the range of BDT 25 000–150 000, which may cover room rent, consultation fees, routine investigations, medicines, surgery, ancillary services and cash benefits for hospitalization in public hospitals. Special payments may apply for normal delivery and caesarian delivery.

3.6 Other financing

3.6.1 Parallel health systems

Other ministries besides the Ministry of Health and Family Welfare accounted for only 1% of THE in 2007. Ministries such as Defense, Home Affairs and Railways disburse their funds to the health facilities they operate. These health facilities provide health care to their respective employees and their dependents. The Ministry of Home Affairs is also responsible for the health care of prisoners. The Ministry of Local Government contracts out NGOs to provide primary health care in urban areas. The Ministry of Social Welfare provides funds to NGOs to provide health services, which are mostly used to build hospitals.

3.6.2 External sources - donor financing

Historically, external or donor financing has been an important source of health financing in Bangladesh. Donor financing accounted for 24% of HPSP budget (US$ 2.9 billion), 27% of HNPSP budget (US$ 5.4 billion) and 24% of HPNSDP budget (US$ 7.7 billion)[5].

Donor financing in the health sector is characterized by a variety of funding mechanisms. Some donors pool their funds and channel that through the government system, which is known as Reimbursable Project Aid (RPA). Besides the pool funders, there are other funding agencies that spend money either directly or through the project, not channelling through the government system. This is known as Direct Project Aid (DPA). Some pool funders also finance through DPA. Special funding arrangements such as GAVI and GFATM provide funding for priority health interventions such as immunization, HIV/AIDS, TB, maternal health and health systems. GAVI funding is reflected in the non-development budget and ADP. GFATM is also reflected in ADP.

5 Sources include Project Appraisal Documents (PAD) and Program Implementation Plans (PIP) of HPSP, HNPSP and HPNSDP.

According to the BNHA (HEU, 2010), in 2007 donors disbursed 71% of money to pool funds, 14% to parallel funds through Operational Plans, and 15% to parallel funds other than Operational Plans (MOHFW, 2010). For FY2012/2013, 80% of HPNSDP expenses were financed from Government funds, while donor financing accounted for 20% of actual expenditure. Of the donor financing, 16% was from pooled funds while 4% was from parallel financing according to the Annual Programme Review (APR, 2013)

In addition to the usual RPA/DPA mode of financing, the health sector programme uses performance-based financing. During the implementation of HNPSP, in order to promote achievement of its key outputs and reforms, a certain percentage of the pooled funds was allocated to a specific category. Disbursement of funds from this category was made only if performance was evaluated as satisfactory by the Independent Review Team during APR. This disbursement percentage was determined from year to year depending on performance.

In HPNSDP, the Ministry of Health and Family Welfare gets additional funds upon attainment of agreed targets that demonstrate accelerated achievement of programme results. Disbursement against the achievement of targets relies heavily on agreed and verifiable Disbursement for Accelerated Achievement of Results (DAAR) indicators of performance. No punitive measures are attached in the event of failure to achieve DAAR indicators. This shows that the performance-based funding in HNPSP was punitive while DAAR in HPNSDP is rewarding.

Both multilateral and bilateral donor agencies directly provide funding to NGOs. GFATM also provides funding to NGOs. Some international private sector foundations (e.g. Gates Foundation, Open Society) provide direct funding to NGOs.

3.6.3 Other sources of financing

Corporate social responsibility (CSR) is a growing funding source for the health sector. Commercial banks, pharmaceutical companies, telecommunications companies, and consortiums are the key players in health-related CSR. According to Bangladesh Bank (2012), CSR funds from commercial banks for health activities increased tenfold, from BDT 68.6 million to BDT 689 million between 2007 and 2010. In 2011 it dropped to BDT 520 million, accounting for about 24% of total CSR funds of the commercial banks. The existing CSR health activities include establishing

and operating hospitals, health centres and medical training institutions; providing funds and equipment to established hospitals, providing funds to civil society organizations and NGOs in raising awareness and providing preventive services, and providing free treatment, free medicines and prostheses.

3.7 Payment mechanisms

Payment mechanisms are different for different providers. In public facilities, the government funds are disbursed by the Ministry of Health and Family Welfare mostly on the basis of the planned budget. Private providers receive the payments from the patient directly on a fee-for-service basis. Table 3.7 below provides an overview of payment mechanisms by service type.

Table 3.7 Provider payment mechanisms

Service program	Ministry of Health	Ministry of Local Govt	Employer insurers*	Cost sharing	Direct payments
Private GP practice			FFS	FFS	FFS
Public PHC facilities (rural)	B			FFS	FFS
Public PHC facilities (urban)		CT	FFS	FFS	FFS
Public Hospital outpatients	B		FFS	FFS	
Public Hospital inpatients	B		FFS	FFS	
Pharmacies			FFS	FFS	FFS
Public health programs	B				

B = Budget
CT=Contract
FFS=Fee for Service
*Note: Mechanism of payment varies by policies of different organizations
Source: Asia Pacific Observatory on Health Systems and Policies

3.7.1 Payment for public providers

Public budgets are divided between the revenue/non-development budget and ADP or development budget. Revenue budget follows a line item-based institutional budgeting approach while the development budget follows a programme budgeting approach. The revenue budget generally includes allocations for recurrent line items such as salaries and allowances, drugs and medical supplies, operating costs and maintenance. It also includes some capital line items. Budgetary

allocation to institutions/facilities is based on capacity and historically determined normatives[6].

ADP includes allocation for 32 Operational Plans under the Health, Population and Nutrition Sector Development Programme, allocation for more than 20 vertical projects outside HPNSDP, and a block amount for unapproved projects. The development budget or ADP includes both capital and recurrent line items.

Once budgets are approved, district and lower levels have little flexibility over the use of funds. Virement between line items is only possible within rules set by the MOF, which only allow transfer between different line items in the same economic category, such as within pay and allowances codes or within supplies codes, but not between pay and non-pay.

Budgetary line items include allocations:

- Per bed annually for facilities with beds;
- Vehicle operational costs per vehicle; and
- Salaries and allowances for staff.

Some key activities/items (e.g. medical and surgical supplies) are commonly funded from both the revenue and development budgets. Lack of coordination in the planning and budgeting for those activities leaves scope for duplication as well as under-allocation of resources (Chaudhury, Hammer, 2003).

The current increment list allocation system fails to discriminate between population needs across areas. For historical reasons, the existing infrastructure is often poorly distributed, so in practice this method of resource allocation perpetuates inequitable patterns of distribution. In response to this, the Ministry of Health and Family Welfare has now developed a needs-based formula for allocating health-care resources across districts. The formula will be piloted after approval.

It is observed that actual final expenditure falls short of the approved budget in almost every year within the Ministry of Health and Family Welfare (Huque, Barkat et al., 2011). Underspending of the

6 Capacity and historic normatives mean that budget setting is based both on the size of physical capacity as measured by the number of facilities, staff or beds and also funding provided to the same facilities in previous years. Likewise, historic patient flows are taken into account in setting the budgets for food.

allocation is significantly higher in the case of the development budget (MOHFW, 2011).

3.7.2 Payments to private providers

In Bangladesh, most transactions (64% of THE) are made directly from patients to providers as out-of-pocket payments. Providers in such cases receive a specific amount directly from the patients for defined care, called fee-for-service. However, it is observed that the fees may vary according to geographic area, the type of clinics/hospitals, and even in some cases the socioeconomic status of the patient. The payments are generally made to the providers or their representatives.

3.7.3 Payments for voucher scheme

Due to weaknesses in supply-side interventions, interest has grown in demand-side financing (DSF) in order to improve the efficiency of health-care providers in many developing countries, including Bangladesh (Ensor, Dave-Sen et al., 2002). In DSF initiatives, individuals are provided with vouchers or coupons that can be exchanged for services with Government and nongovernment providers as a potential method of overcoming some demand-side barriers. This arrangement thus involves channelling a part of the Government subsidy for health services directly to households by allowing them to purchase health services themselves or through an agency (Bhatia, Yesudian et al., 2006). This initiative aims to raise the overall consumption of a specific service (such as maternal care) and consequently, increase access to quality health care in identified vulnerable groups.

The Ministry of Health and Family Welfare is using DSF to implement a maternal health voucher scheme in 53 subdistricts around the country under the HPNSDP. The programme aims to increase the use of qualified birth attendants and remove the financial barriers for safe delivery. The programme additionally includes private and NGO facilities as potential providers of maternal care, which can stimulate competition among providers so that efficiency as well as quality of care can improve.

3.7.4 Paying health workers

Public service providers are paid salary and allowances according to standard rates set by the Public Service Commission. These rates are based on the civil service classification. Additional allowances may be

paid for particular locations. In addition, most public service providers also work after hours in private practice, where they receive fees for service in direct payments from patients, or payments from employer insurance agencies.

4 Physical and human resources

Chapter summary

Bangladesh has an extensive PHC infrastructure in the public sector but these are not adequately provisioned for human and other resources such as drugs, instruments and supplies. During 2007–2013, there has been a steady increase in the number of both hospitals and total number of beds in the public sector. The number of beds in PHC facilities at upazila-level and below reached 18 880 across 472 facilities in 2013, and 27 053 in 126 facilities at secondary and tertiary level. In the private sector, there were 2983 registered hospital and clinics, with 45 485 beds. Taken together, there is now one bed for every 1699 population which is still inadequate. Meanwhile, to bring health facilities closer to the doorstep of the population, there is a community clinic for every 6000 people (n=12 527) providing primary health-care services.

There is a large cadre of health-care providers in the informal sector. This comprises semi-qualified allopathic providers (such as community health workers, medical assistants and trained midwives), unqualified allopathic providers (e.g., drug shop retailers, rural doctors), traditional healers (practitioners of Ayurvedic, Unani and homeopathic medicine) and faith healers. They are not part of the mainstream health system but a major health-care provider for the poor rural population, especially in remote and hard-to-reach areas.

In the public sector, the Central Medical Store is responsible for procurement and supply of medical and surgical equipment and products including drugs. Public sector health facilities in Bangladesh are poorly equipped with medical equipment and instruments. Many of the lower-level facilities lack basic instruments like clocks and height measuring scales. Supply of drugs is also inadequate and the supply chain is frequently disrupted. On the other hand, the private sector, especially the recently emerging high-cost hospitals and clinics in the urban areas, have all the major state-of-the-art diagnostic equipment and facilities.

The Bangladesh health workforce is characterized by "shortage, inappropriate skill mix and inequitable distribution"of health workforce. At present there are 64 434 registered doctors, 6034 dentists, 30 516 nurses, and 27 000 nurse-midwives in the country (cumulative figures unadjusted for attrition due to deaths, retirements, migration, change of profession or inactivity). In addition, the health workforce is skewed towards doctors with a ratio of doctors to nurses to technologists of 1:0.4:0.24, in stark contrast to WHO recommended ratio of 1:3:5. The engagement of the health workforce in the private sector is increasing, as revealed by an estimated 62% of the medical doctors working in the private sector in 2013. The formal health workforce (doctors, dentists, nurses) is mostly concentrated in the urban areas, with variation among the different regions. Retention and absenteeism of health workers are two major problems facing rural areas.

4.1 Physical resources

4.1.1 Capital stock and investments

The major share of total health expenditure in 2007 was spent on drug retail services (46.1%) and curative care services (28.6%) followed by prevention and public health services (11.2%) (Ministry of Health and Family Welfare, 2003). The latter include maternal and child health services, family planning, and health awareness building services. Capital formation, i.e. capital consumption of domestic health-care provider institutions (including depreciation but excluding retail sale and other providers of medical products) amounts to around 6.3% of THE.

When disaggregated by provider, the top three investments (of THE) were as follows in 2007: drug outlets and medical goods retailers (43%), hospitals (27%) and ambulatory health services (22%). Ambulatory services primarily include outpatient services offered by physicians, family planning centres, and diagnostic laboratories. The increase in expenditure for hospitals as a share of THE is the most significant change in the period 1997–2007. Overall hospital spending increased from 17% to 27% of THE. This change was due to expenditure at private hospitals increasing much faster (from 25% of THE in 1997 to 54% in 2007) than expenditure at public hospitals (from 75% in 1997 to 46% in 2007) (Ministry of Health and Family Welfare, 2003).

Public expenditures at District and General Hospitals across the country in 2007 were around 8.7% of total expenditure on hospitals. Although public hospitals at upazila-level and below continue to be major providers

of health services, their relative share of total hospital expenditures has declined from 34.1% in 1997 to 24.1% in 2007 (Ministry of Health and Family Welfare, 2003). For public sector health facilities, allocation is based on the number of beds following a pre-determined norm, and thus biased towards secondary and tertiary health facilities (Rahman, 2000). This is supplemented by other allocations to meet special requirements and urgent institutional needs, which are by definition unfixed and irregular.

4.1.2 Infrastructure

Bangladesh has an extensive public sector health infrastructure spanning the country and consisting of primary, secondary and tertiary health care facilities. PHC facilities are the first level of care at the community level while the secondary and tertiary facilities are those where more advanced and specialty care is provided.

PHC level health facilities

The core of the PHC facilities is the community clinics, a flagship programme of the current government. With one for every 6000 people, a community clinic brings family planning, preventive, and limited curative services closer to the population, usually within 30 minutes' walking distance. Each clinic consists of two rooms with drinking water and lavatory facilities, and a covered waiting area. Funds for building the clinics were provided centrally, but communities were required to donate land so that there was a sense of ownership. To boost this sense, each community was required to set up a group to support and assist with their management, although the staff and supplies are provided by the Government. As of 2012, there were 12 527 functional community clinics in the country (Ministry of Health and Family Welfare, 2013). They are staffed by one Health Assistant (DGHS), one Family Welfare Assistant (DGFP) and one Community Health-care Provider (CHCP) from the project. All provide similar services. When one is preoccupied with domiciliary services, the other staff take responsibility for providing services at the facility, which include health, family planning and nutrition services.

Besides community clinics, the primary infrastructure includes 467 hospitals at upazila-level and below with a bed capacity of 18 880 (Table 4.1) (MOHFW 2013).There are also 1275 union subcentres and 87 Union Health and Family Welfare Centres (UHFWC) which provide outpatient services only. Besides these, there are five 10-bed (in number)

and 18 20-bed hospitals at the union level under the DGHS. DGFP runs 3827 Union Health and Family Welfare Centers, of which 1500 have been upgraded to provide primary and outdoor care (Bangladesh Health Sector Profile, 2010). At the union level, 24 Mother and Child Welfare Centers (MCWC) mainly offer outdoor services, with a few providing Emergency Obstetrical Care (EmOC) services (MOHFW 2012).

Table 4.1 Distribution of beds in the public sector at upazila (sub-district) level and below

Type of facility	2007		2010		2013	
	hosp	bed	hosp	bed	hosp	bed
Upazila Health Complex	413	15 741	424	15 877	436	18 290
50 bed hospital	153	7650	156	7800	268	13 400
30/31 bed hospital	260	8091	254	7874	151	4670
10 bed hospital	-	-	11	110	11	110
Union hospital	17	340	27	410	31	490
20 bed hospital	35	700	14	280	18	360
10 bed hospital	-	-	13	130	13	130
Total	430	16 781	451	16 287	467	18 780
Trauma Centre (20 bed)	-	-	5	100	5	100

Source: Bangladesh Health Bulletins 2007, 2010, 2013

Secondary and tertiary level facilities

This category of hospitals comprises general hospitals, district hospitals, medical college hospitals, specialty hospitals, and other hospitals. At the district level, DGHS operates 53 district hospitals, nine general hospitals, three leprosy hospitals, three communicable disease hospitals, 13 chest disease/TB hospitals, 43 chest/TB clinics and 23 school health clinics (MOHFW, 2012). The district and general hospitals offer primary and secondary care through outdoors, indoors (outpatient and inpatient services) and emergencies. Leprosy, communicable diseases and chest disease/TB hospitals provide specialized services through outdoors and indoors. Chest/TB and school health clinics provide outdoor services only. The DGFP at the district level operates 60 MCWCs (mostly 10 beds although some are upgraded to 20 beds). In these facilities, outdoor and indoor services are provided along with EmOC services (MOHFW, 2012).

At the national level, DGHS has 17 medical college hospitals under its jurisdiction; these hospitals also offer dental (20 beds), homeopathic and ayurvedic services (each with 100 beds) (MOHFW, 2012). In addition, DGHS operates eight super-specialized teaching hospitals covering chest

diseases, traumatology, CVDs, ophthalmology, cancer, kidney/urology, neuromedicine and mental health. All of these facilities are located in Dhaka, with the exception of the mental health hospital in Pabna. The DGFP operates two 100-bed hospitals, both in Dhaka, providing outdoor, indoor and EmOC services.

The Bangabandhu Sheikh Mujib Medical University (BSMMU) has been the leading postgraduate medical institution in Bangladesh since 1998; it was later made autonomous by the Ministry of Health and Family Welfare(Bangladesh Health Sector Profile, 2010).Later, two other specialized hospitals of the Ministry – Institute for Child and Maternal Health (ICMH) and National Institute for Kidney Diseases and Urology (NIKDU) –also received autonomy.

The distribution of beds in the respective secondary- and tertiary-level hospitals by year is shown in Table 4.2. As can be seen, there has been a steady increase in both number of hospitals and total number of beds. In the process, there have been realignments, upgrading and opening of new specialized hospitals such as trauma centres at the upazila level and specialized centres for COPD/bronchial asthma and burn at the secondary/tertiary level.

Table 4.2 Distribution of beds in the secondary and tertiary hospitals by year

Type of facility	2007		2010		2013	
	hosp	bed	hosp	bed	hosp	bed
District hospital	49	4950	53	7650	53	7850
General hospital	13	2950	9	1250	11	1350
Infectious disease hospital	5	180	5	180	5	180
Medical/dental /alternative medicine college hospital	16	8280	17	10 005	22	11 960
Specialized hospital affiliated with post-graduate institutes	7	1914	7	2114	7	2300
Specialized hospital (other)	1	500	2	500	2	750
Chest disease/TB hospital	11	550	12	546	13	816
Leprosy hospital	3	130	3	130	3	130
Specialized centres	---	---	3	150	3	200
Other hospital	3	525	6	305	6	305
BSMMU (Medical U)	---	---	---	---	1	1212
Total	108	19 979	117		126	27 053

Source: Bangladesh Health Bulletins 2007, 2010, 2013

Private sector hospitals and beds

There has been rapid increase in for-profit private sector health care facilities in the country commensurate with successive governments' open-door economic policy since the 1990s. The country now boasts of state-of-the art (by south Asian standards) hospitals such as Apollo Hospital and Square Hospital. However, the cost of treatment in such facilities is beyond the financial capacity of even the middle-class populations. There are also hospitals and clinics and diagnostics which are of modest standard and less costly.

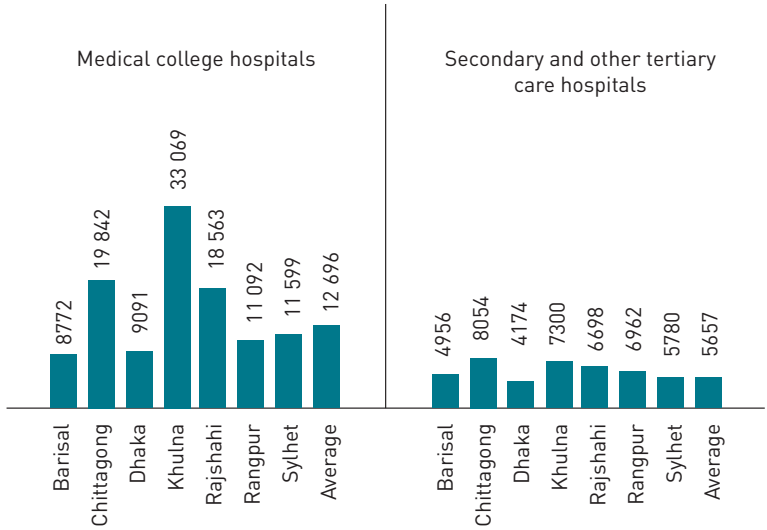
Currently, there are 2983 registered private hospitals and clinics in the country providing about 45 485 beds (MOHFW, 2013). Only a few among these have free beds for the poor and disadvantaged. Besides the registered ones, there are a substantial number of clinics and hospitals which are not registered with the regulatory bodies, and do not fulfil the minimum standards of operation.

Thus, the total number of functional beds (public and private) in the country is around 91 000.

Population bed ratio

The number of hospital beds indicates resources available for delivering care to patients admitted to hospitals. In Bangladesh there is less than one bed per 1000 population, which indicates inadequate resource for delivering hospital services (OECD/World Health Organization, 2012). A more recent estimate reported by the government is that on average there is one bed for every 1699 people which is quite inadequate (MOHFW, 2013). Figure 4.1 shows the most recent data on population-to-bed ratio in government medical college hospitals and secondary/tertiary hospitals according to the seven administrative divisions of the country (MOHFW, 2013). As can be seen, Khulna has the highest population–bed ratio (33 069) for a medical college hospital while Chittagong in the south-east of the country has the highest population–bed ratio (8054) for secondary and tertiary care hospitals. Meanwhile, the capital Dhaka has the lowest ratio (4174). The average length of stay in hospitals is three days (OECD/World Health Organization, 2012) and there is optimum use of beds (100% or more) in secondary and tertiary hospitals compared to the PHC-level hospitals (Table 4.3), indicating inadequate hospital resources at a relatively high cost (BRAC, 2012).

Figure 4.1 Population per bed in public sector (medical college and secondary and tertiary care) hospitals in different divisions of Bangladesh in 2012



Source: Bangladesh Health Bulletin 2013

Table 4.3 Distribution of utilization (bed occupancy) of public hospitals, 2010

Division	Upazila Health Complex			Secondary and tertiary level hospitals				All hospitals
	10–50 bed			100–150 bed		200–250 bed		
	Total	Hospitals with 100% or higher Bor**	Percentage of hospitals with 100% or higher Bor*	Total	100% or higher Bor*	Total	Hospitals with 100% or higher Bor*	Percentage of hospitals with 100% or higher Bor*
Barisal	33	4	12.1	4	1	1	0	20.0%
Chittagong	82	5	5.9	9	6	3	2	66.7%
Dhaka	103	13	12.6	11	6	3	0	42.9%
Khulna	50	9	18.0	8	5	2	2	70.0%
Rajshahi	111	21	18.9	11	9	2	1	76.9%
Sylhet	31	0	0.0	3	2	0	0	66.7%
Total	413	52	12.6	46	29	11	5	59.6%

Source: Bangladesh Health Watch, 2011

4.1.3 Medical equipment

In the public sector, the Central Medical Store is responsible for procurement and supply of medical and surgical equipment and products including drugs. The public sector has provisions for all basic medical and diagnostic facilities (laboratory, radiography, ultrasonogram, etc.)

including specialized diagnostic facilities in tertiary care hospitals (e.g. CT scans). The private sector, and the recently emerging high-cost hospitals and clinics in particular, have state-of-the-art diagnostic equipment and facilities.

The public sector health facilities in Bangladesh are poorly equipped with medical devices, instruments and supplies (World Bank, 2012). Many of the lower-level facilities lack basic instruments such as clocks or height measures. Greater than 50% of the surveyed MCWCs (n=50) did not have child height measurement scales and 255 of the surveyed district hospitals (n=40) did not have a clock with second hand and lacked minor surgical tools. About half of the community clinics (n=758) did not have blood pressure measuring devices or thermometers. In the surveyed UHCs, out of 34 basic laboratory items, 19 items were available in less than 60% of the facilities. Around 83% of the surveyed UHCs (n=80) and 62% of the MCWCs have ambulances which are functioning. Forty-seven percent of the district hospitals (DH), 41% of the UHCs and 25% of the MCWCs reportedly restricted the use of ambulances due to funding shortfalls. From the same survey, data reveal that 65% of the DHs and 52% of the UHCs have functioning X-ray machines, 61% of the DHs and 57% of the UHCs have functioning ultrasonograms, and 86% of the DHs and 83% of the UHCs have functioning ECG machines (World Bank, 2012).

4.1.4 Information technology

The health system of Bangladesh is rapidly adopting technology to its information and management systems. Under the HPNSDP (2011–2016), the Health Information System (HIS) and e-Health is implemented through an operation plan (MOHFW, 2012). The HIS Management Information System (MIS) collects data electronically from all facilities from national to upazila-level. Expansion of internet access to union-level facilities and community clinics has started and soon will be within the HIS net. The HIS is being used for generation of various databases to aid management decision-making.

Under e-Health, mobile phone-based services and telemedicine is provided. All the UHCs and district hospitals have a dedicated mobile phone number which connects to a call centre accessible round the clock for everyone in the catchment area. Those living in the catchment area can call and a doctor on duty answers and gives necessary medical advice free of charge. Gradually, this service will be extended to community clinics.

Launched in July 2011, telemedicine service is now available from nine hospitals (three UHCs, three district hospitals and three tertiary hospitals) and uses high-quality video conferencing devices. It has thus expanded the opportunity of medical consultation to rural areas often not served by specialist doctors. By 2013, telemedicine services will be expanded to several thousands of community clinics and to facilitate this, internet-ready mini-laptops are being distributed to the clinics.

Currently, a pilot project named MOVE-IT is in place to build a unified electronic information system to register all pregnancies, births, deaths, cause of death, non-fatal health events and coverage of priority services for maternal and child health harnessing the power of mobile and IT. This is being implemented by the Government in partnership with an NGO and an IT company under funding from the WHO Health Metrics Network.

4.2 Human resources

WHO defines health workers as "all people engaged in actions whose primary intent is to enhance health". In the context of low-income countries like Bangladesh, health workers include professionals (doctors, nurses and midwives, dentists, public health professionals), allied professionals (medical assistants, physiotherapist, pharmacists, dietitians, etc.) and health-care providers in the informal sector who operate "outside the purview of regulation, registration, or oversight by the government or other institutions" (Ahmed, Hossain et al., 2009). Thus, the heterogeneity of the health workforce at different levels of administrative units is a fact of life in Bangladesh, like all transitional societies.

At the community level, there are all kinds of informal providers – traditional birth attendants, practitioners of traditional medicine and faith healers, village doctors, drug vendors/retailers and self-educated homeopaths – along with some semi-qualified allopathic providers such as community health workers/providers (Table 4.4). Given the shortage of professional health-care providers, they have become the major providers of health care to the vast majority of the population, especially in rural areas. Qualified health professionals become available from union level (the lowest administrative unit comprising several villages) and above. At the apex of the pyramid are the district and medical college hospitals and specialized tertiary hospitals where various specialists are available and only a fraction of the population has access to these due to geographic, socio-cultural and financial barriers.

Table 4.4 Informal health-care providers at PHC level in Bangladesh

Provider	Training	Type of services provided	Health sector
Faith healer (Ojha/ pir/fakir)	Not applicable	Non-secular; based on religious belief	Private
Traditional healer (Kabiraj)	Mostly self-trained, but some may have training from Govt. or private colleges of traditional medicine	Ayurvedic, based on diet, herbs and exercise etc. Sometimes also combine allopathic medicine such as antibiotics and steroids etc.	Private
Traditional healer (totka)	Self-trained, combines ayurvedic, unani (traditional muslim medicine originating from Greece) and shamanistic systems; also use allopathic medicine	Combination of ayurvedic, unani and faith healing	Private
Village doctors/ Rural medical practitioners (RMPs); in Bangla, Palli Chikitsok	Few have one year training from Govt. Organizations which stopped in 1982; majority have three to six months training from unregistered private organizations	Allopathic	Private
Homeopath	Mostly self-educated, but some possess recognized qualification from Govt. or private Homeopathy Colleges	Homeopathic	Private
Drug vendor/drug seller; also village 'quack'	No formal training in dispensing; none of them are trained in diagnosis and treatment; some learn treatment through apprenticeship or working in drug stores ('quack')	Allopathic; in addition to dispensing, they also diagnose and treat	Private
Traditional birth attendants	No training or short training on safe and clean delivery by Govt./ private organizations/NGOs	Assisting normal delivery	Private
Community health workers (health/ family welfare Assistant, NGO CHWs etc.)	Training on basic curative care for common illnesses and preventive health by Govt./ private/NGO organizations of varying duration	Allopathic: curative and preventive/ health promotion	Public/private/ nonprofit NGOs

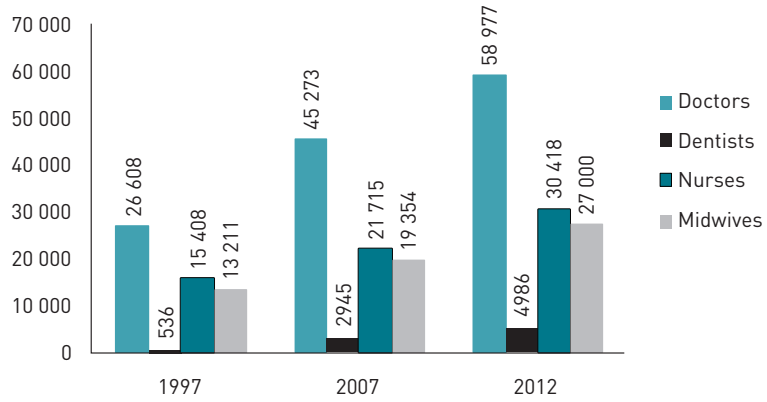
Source: (Ahmed, 2005)

4.2.1 Health workforce trends

The health system in Bangladesh is characterized by a massive shortage of skilled health workers with twice as many doctors as nurses, clustered disproportionately in urban areas while rural facilities are overburdened, understaffed and insufficiently equipped. It is one of the 57 countries identified by WHO as having critical shortage of health workforce (WHO, 2006). The recent report of WHO suwggests that there are 0.3 doctors and 0.3 nurses per 1000 population and cumulatively less than 23 doctors, nurses and midwives per 10 000 population. Facilities as well as human resources are planned on geographical considerations rather than the size of population of a given area.

The size of the professional health workforce is consistently increasing over time, but not according to requirements (Figure 4.2). At present there are 64 434 registered doctors, 6034 registered dentists, 30 516 registered nurses, (MOHFW, 2013) and 27 000 nurse-midwives (MOHFW, 2012). These are cumulative figures, and though there is a provision for updating the register every five years, this is hardly done on a regular basis. Attrition occurs from professional mobility and "brain drain", failure of rural retention, death and retirement. Some leakage occurs in the form of drop-out (becoming inactive in the profession), change of profession, and migration. Thus, the number of currently available doctors in the country is 46 951; no updated data is available for other categories of providers.

Figure 4.2 Bangladesh Medical and Dental Council (BMDC) registered health workforce in 1997, 2007 and 2012



Source: Bangladesh Health Bulletins 1997, 2007, 2012

The recent trend of feminization of the health workforce (especially doctors) in Bangladesh is especially serious because it is difficult to post women in remote rural and hard-to-reach areas due to lack of infrastructure and other socio-cultural reasons. Many female doctors, nurses, medical technologists and para-professionals choose to remain as housewives after marriage and become inactive in profession for limited time or permanently.

Shortages also exist among other cadres such as medical assistants and health technologists. This results in many sanctioned posts lying vacant in the public sector. In case of doctors, dentists and nurses, the vacancy exceeds more than one fifth of the sanctioned posts (MOHFW, 2013). In case of public sector recruitment, the average lead-time is two years from requisition to completion of selection. Thus, if the Ministry makes a request to the Public Service Commission (PSC) for certain number of physicians due to vacancies, PSC can only supply these after two years by which time the Ministry has already incurred further vacancies. Similarly, though the local authority (like head of hospitals or civil surgeon) is authorized to recruit class III and IV employees, they need to seek permission from DGHS, which usually cuts 20% of the request almost routinely. Thus, 20% of vacancies always remain in the public sector health services, mostly in rural areas.

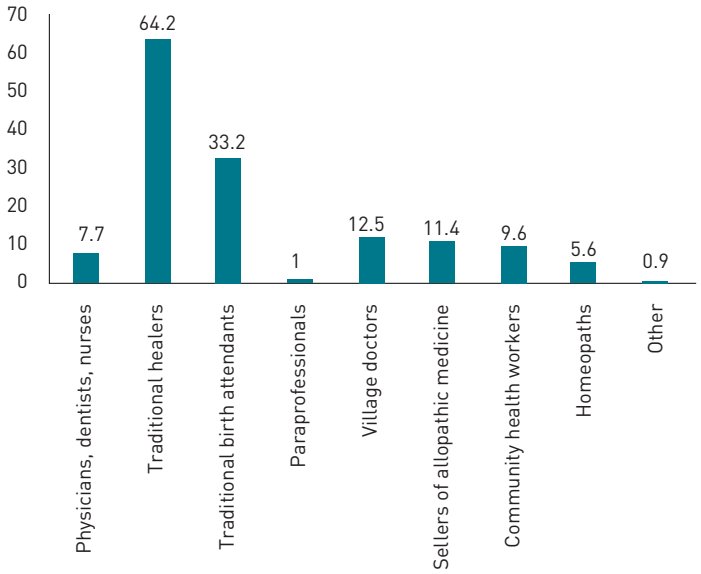
Doctors in private sector

According to an estimate in 2003, around 50% of the doctors, 42% of the nurses and 65% of the paramedics work in the private sector exclusively, besides those public sector employees who also practice privately after office hours. The involvement of the health workforce in the private sector is increasing, as revealed by an estimated 62% of the medical doctors working in the private sector in 2013 (MOHFW, 2013). No such current data is available for the other health professionals.

Density of health workforce

Figure 4.3 presents the density (per 10 000 population) of different types of health-care providers from a study on health workforce in the formal and informal sectors. There are about eight formally qualified HCPs (doctors, nurses, dentists) per 10 000 population (5% of the currently active health-care providers) in Bangladesh. It has now around five physicians and two nurses per 10 000 populations, the doctor-nurse ratio being 0.4 (Ahmed, Hossain et al., 2011).

Figure 4.3 Density of health-care providers per 10 000 populations

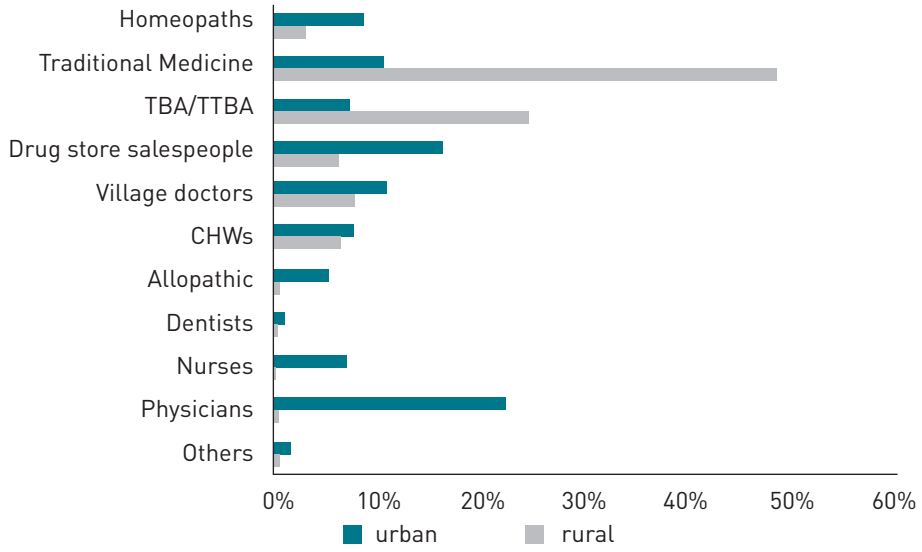


Source: Bangladesh Health Bulletins 1997, 2007, 2012

Distribution of health workforce

The existing health workforce in Bangladesh is very inequitably distributed as demonstrated amply from a recent study (Ahmed, Hossain et al., 2011). All significant health institutions are located in the capital city which shows great centralization, while health workers are concentrated in urban secondary and tertiary hospitals, although 70% of the population lives in rural areas (Country Case study) (GHWA, 2008). The overwhelming urban bias of the distribution of qualified professionals remains a persistent phenomenon (Figure 4.4). They are mainly concentrated in the urban areas, and disproportionately in Dhaka division including the capital city. On the other hand, unqualified/semi-qualified allopathic practitioners such as village doctors and Community Health Workers (CHWs) are mainly concentrated in rural areas. Drug shop attendants are evenly distributed. There are also the usual stock of traditional healers and trained/traditional birth attendants in rural areas. A comprehensive HRH strategy is currently being developed by the Human Resource Development Unit of Ministry of Health & Family Welfare, Bangladesh Secretariat (WHO, 2014).

Figure 4.4 Rural-urban distribution of health-care providers by type (per 10 000 populations)



Source: Bangladesh Health Watch, 2007

Health workforce gaps, projected workforce needs and current production

Currently, the health workforce is skewed towards doctors with a ratio of doctors to nurses to technologists of 1:0.4:0.24. According to the WHO recommended ratio of 1:3:5, Bangladesh has a staggering shortage of over 90 000 doctors, 273 000 nurses and 455 000 technologists (Table 4.5). The Ministry has a target of achieving a ratio of 1:1:1 in the foreseeable future.

Table 4.5 Projected workforce per 10 000 populations based on WHO recommended skill mix ratio and MOHFW targeted skill mix ratio using 2007 data

Health-care provider	MOHFW 2007 estimates	Workforce ratios 2007	MOHFW projected skill mix ratios	WHO recommended skills mix ratios	MOHFW workforce projection	Workforce projection using WHO ratios
Doctor	38 537	1	1	1	91 000	91 000
Nurse	15 415	.4	1	3	91 000	273 000
Technologist	9249	0.24	1	5	91 000	455 000

Source: World Bank 2010

4.2.2 Professional mobility of health workers

While there is already a shortage of qualified doctors in the country, of even more concern is the fact that the migration of skilled workforce is occurring on a continuous basis. According to one estimate, there were 1794 registered Bangladeshi doctors working in the United States, Canada, United Kingdom, Australia, New Zealand and Saudi Arabia in March 2001 (Peters and Kayne, 2003). This is a gross underestimate because data is not available for other Middle Eastern countries and India. No current data is available. It is estimated that on an average, 200 doctors from the public sector move abroad every year (Adkoli, 2006). Medical technologists and some nurses also migrate annually, but no reliable data are available.

4.2.3 Training of health workers

The basic undergraduate degrees such as Bachelor of Medicine and Bachelor of Surgery (MBBS), Bachelor of Dental Surgery (BDS) and Diploma of Nursing are awarded by medical and dental colleges and nursing schools respectively. A brief description of the different cadres is given below:

Doctors: Basic allopathic medicine is the mainstream of medical education. It is a five-year degree offered as MBBS after 12 years of schooling. After passing the final professional examination, one year of internship is a prerequisite to get formal registration to work as a practicing physician.

Nursing: Nursing as a profession in Bangladesh is not as prestigious as the medical profession due to various socioeconomic, cultural and religious factors. Currently, the basic nursing course comprises a three-year diploma course after 12 years of schooling. Midwifery was offered as a separate training programme (12 to 18 months) until the late 1970s. Later it was incorporated within nursing training, with one year of midwifery training at the last year of the Diploma in Nursing. Recently, considering the deficiency of this cadre, a separate programme for midwifery was reintroduced in 2011 as a three-year course.

Dental surgeons: A four-year graduate course is offered by public and (mainly) private sector dental colleges to produce dental surgeons.

Public health professionals: The first institution established was the Institute of Public Health Nutrition (IPHN) in 1974. This was followed

by the establishment of Institute of Epidemiology, Disease Control and Research in 1976 and the National Institute of Preventive and Social Medicine (NIPSOM) in 1978. The latter formally introduced the Diploma in Public Health (DPH) and Diploma in Community Medicine (DCM) courses which ultimately evolved into Master of Public Health (MPH) courses.

Medical assistants: Introduced in 1976, they are trained to provide basic primary care including prescribing and referral in assistance with a doctor and even in the absence of a doctor to provide services at UHC/ UHFWCs. It is a three-year diploma course after 10 years of schooling.

Medical technologists: These include various disciplines such as laboratory, radiology, physiotherapy, sanitary inspection, dentistry, pharmacy, and radiotherapy. There are both diploma and Bachelor courses. As of December 2011, 22 institutes offer BSc courses in different disciplines such as Physiotherapy, Laboratory Medicine, Dentistry, Occupational Therapy, Speech Therapy, Optometry and Pharmacy. Two NGOs and a private hospital offer different technical courses in ophthalmology including optometry, refraction, and training for ophthalmic assistants and ophthalmic nursing assistants. The National Institute of Cardiovascular Diseases and Hospital (NICVDH) offers a Cathlab technologist course with 10 seats.

Family Welfare Visitors (FWVs): The National Institute of Population Research and Training (NIPORT) and Directorate General of Family Planning (DGFP) offer an 18-month FWV course as in-service training to selected women, who after passing are posted as FWVs, mostly at the UHFWCs under DGFP.

Community-based skilled birth attendants (CSBAs): To facilitate attendance of births by skilled health personnel, the Ministry of Health and Family Welfare started a programme in March 2003 to produce community-based skilled birth attendants by providing six months training to accredited female field workers. However, many NGOs such as BRAC and projects like UNDP's Chittagong Hill Tracts Development Facility trained their workers as CSBAs at other institutions including the Institute of Child and Mother Health, and Ad-din Hospital at Jessore.

Community paramedics: Two-year Community Paramedic courses are offered exclusively by the private sector, for which institutes are accredited by NIPORT and Bangladesh Nursing Council.

The annual production capacity of health workforce is shown in Table 4.6 below. With the exception of nursing, there are more seats available for doctors, medical technologists, and medical assistants in the private sector than in the public sector. These numbers have increased to some extent recently. However, compared to the existing gaps, the current combined capacity to produce health workforce is inadequate.

Table 4.6 Annual production capacity of health workforce including private sector as of 2013

HRH categories	Number of institutes			Number of seats for admission		
	Total	Public	Private	Total	Public	Private
Physicians						
Post graduate	33	23	10	2260	2091	169
Medical college	87	23	64	7712	2862	4850
Dental college	27	9	18	1597	532	1065
Sub-total for physicians	147	55	92	11 569	5485	6084
Medical assistants	111	8	103	6821	716	6821
Nurses and allied HRH						
Nursing (Diploma)	91	44	47	4540	2630	1910
Nursing (B.Sc)	36	13	23	2845	1285	775
Midwifery	12	-	12	320	-	320
Community skilled birth attendant	47	45	2	NA	NA	NA
Specialised nursing	4	-	4	80	-	80
Sub-total for nurses and allied HRH	190	102	88	7785	3915	3085
Medical technologists						
Inst. of health technology (Diploma)	90	8	82	12 650	2419	10 231
Inst. of health technology (B.Sc)	18	3	15	1425	265	1160
Sub-total for medical technologists	104	11	97	14 075	2684	11 391

Source: Author's calculation from Bangladesh Health Bulletin 2013

4.2.4 Alternate medical care providers

In the National Health Policy 2000, Ayurvedic, Unani and Homeopathy were added as an alternative education system along with the mainstream medical education so as to produce alternative medical practitioners. Two types of courses are offered: graduate with five years

of study and 12 months of internship (BUMS and BAMS), or diploma with four years of study and six months of internship (Diploma in UMS and AMS)(MOHFW, 2011). The different institutions teaching and training in alternative medicine is shown in Table 4.7 below. The annual intake of these institutions currently stands at about 400 students.

Table 4.7 Academic institutions for teaching and training alternative medicine in Bangladesh

Name of institution	Total	Govt.	Private	Duration of course	Duration of internship	Degree offered	No. of seats
Govt. Unani and Ayurvedic Medical College	1	1	0	5 years	1 year	BUMS (Bachelor of Unani Medicine and Surgery); BAMS (Bachelor of Ayurvedic Medicine and Surgery)	50
Homeopathic Medical College	2	1	1	5 years	1 year	BHMS (Bachelor of Homeopathic Medicine and Surgery)	50
Tibbia College / Unani Diploma College	12	1	11	4 years	6 months	DUMS (Diploma of Unani Medicine and Surgery)	25*
Ayurvedic Diploma College	8	0	8	4 years	6 months	DAMS (Diploma of Ayurvedic Medicine and Surgery)	na
Homeopathic Diploma College	41	0	41	4 years	6 months	DHMS (Diploma of Homeopathic Medicine and Surgery)	na
Total	64	3	61				

*only in government institutions, na - not available
Source: Asia Pacific Observatory on Health Systems and Policies

4.2.5 Doctor's career paths

Doctors

The career prospects of general physicians in the public sector are not good. Within the health cadre are teaching and administration subcadres who have different entry requirements and pathways for career development. In the teaching subcadre, postgraduate qualification is a prerequisite which limits their number to start with, and as such, they enjoy the opportunity of speedy promotion since there are more posts at upper levels. But in the administration subcadre, a postgraduate qualification is not required and since the base of this subcadre is large and posts at

the upper level are limited in numbers, the opportunity for promotion is very limited. The majority of the doctors working in the administration subcadre obtain their first promotion almost at the end of career and retire before moving to more higher posts. These two distinct promotional pathways place both sides in unequal competition and create tension. Since there are shortages of health cadre officials at higher levels like Director, Army Medical Corps officers on deputation come to serve in those positions. Since they belong to the army and not the regular civil health administration, conflicts also arise between these deputed army officers and their civilian counterparts or superiors.

In the case of doctors, there are postgraduate courses on preclinical, paraclinical and clinical subjects. In these subjects, doctors have the option to acquire further specialization in two different ways– postgraduate courses and fellowships. A doctor can be specialized in a subject in either way, for example he/she can have a MS in Ophthalmology or be a fellow of ophthalmology.

Formal postgraduate courses offered in different institutions which include a two-year Diploma, a five-year Masters (Masters in Surgery/ Masters in Medicine), a three-year MPhil, or an 18-month MPH Master of Transfusion Medicine or Master of Medicine (MMED). At first there was only one institution (Institute of Postgraduate Medicine and Research (IPGMR), now Bangabandhu Sheikh Mujib Medical University (BSSMU)) offering postgraduate courses for doctors, but since the late 1990s the old medical colleges started offering these courses (Faiz, 2007). Recently, some private medical colleges and institutions have also started offering these courses. In December 2011, 2237 seats for postgraduate courses were available in the country (Table 4.8).

Table 4.8 No. of seats for postgraduate courses offered by different institutions (Health Bulletin 2013)

Name of institutions	MS	MD	M.Phil	Diploma	MPH	MTM	MMED	Total
Medical University (BSSMU)	140	150	70	106	-	10	-	476
22 Government institutions	312	360	242	478	185	-	15	1592
10 Private institutions	21	38	15	95	-	-	-	169
Grand total	473	548	327	679	185	10	15	2237

Source: Asia Pacific Observatory on Health Systems and Policies

Fellowship (FCPS) and membership (MCPS) are offered to the doctors through four years of training by an autonomous authority, the Bangladesh College of Physicians and Surgeons (BCPS). Table 4.9 shows the number of awards given by year and fellowship/membership. These options create more opportunities for individual career paths and total production of specialized doctors. On the other hand, different degrees in the same profession may create confusion in the service sector rules regarding recruitment and promotion, for example.

Table 4.9 No. of fellowship and membership awardees by year and category (Health Bulletin 2012)

	FCPS					MCPS				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Total	172	216	239	288	320	108	79	93	125	118

Source: Asia Pacific Observatory on Health Systems and Policies

4.2.5 Other health workers' career path

Nurses

After passing the diploma, nurses can undergo a two-year post-basic BSc nursing course as in-service training. In 2004, a Bachelor of Science in Nursing was introduced as a four-year graduate course. However, the numbers of BSc nurses are low and out of 174 sanctioned posts of Class I nurses, only one is filled as of June 2013 (MOHFW, 2013). Specialized nursing courses like cardiac nursing, rehabilitation and pediatric nursing and junior nursing (midwifery) are offered by institutions in the private sector.

4.2.6 Dual practice

Dual practice by physicians in the public sector is a common behaviour in Bangladesh. About 80% of government physicians, particularly at secondary and tertiary level hospitals, commonly run private chambers after office hours (Gruen, Anwar et al., 2002).The main reason physicians carry out dual practice in the health sector is to supplement their income derived from public service. The rate of absenteeism is high among public doctors and especially those known to have a private practice and engaged in dual practice to double their income (Gruen, Anwar et al., 2002; Chaudhury, Hammer et al., 2006). There is no regulation of such dual practice, except for a few large private hospitals where private practice after hospital hours is restricted.

5 Provision of services

Chapter summary

Health services are delivered by both the public and non-public sectors in Bangladesh. In the public sector, the Ministry of Health and Family Welfare is the main agency providing public health services, including promotive and preventive services. The public health services include programmes for the control of TB, now covering all upazilas with the Directly Observed Treatment Strategy (DOTS); the National Leprosy Elimination Programme, which reduced prevalence rates to 0.24/10 000 by 2010; the Malaria and Parasitic Disease Control Programme which targets approximately 11 million people in high-risk areas; Kala-azar control which has now expanded to cover 27 districts; and the HIV/AIDS programme which has managed to keep the incidence of HIV below 1% among high-risk populations. These programmes are supported by National Public Health Institutes, while health promotion programmes are organized by the health promotion sections of both DGHS and DGFP.

Primary and ambulatory care is delivered through the public network of facilities, particularly through the community-based health-care programme delivered by community clinics; and by the private formal and informal and NGO providers. In urban areas, patients tend to use the outpatient units of the major urban hospitals for ambulatory care. Secondary and inpatient care is provided through public facilities at upazila, district, medical colleges and specialized urban hospitals, as well as private hospitals mainly in urban areas. There is no structured referral system, so that patients with minor ailments may also present directly to hospitals for treatment.

Due to epidemiological and demographic change, Bangladesh is facing the double burden of communicable and noncommunicable disease including the emergence and re-emergence of other diseases (avian flu, dengue, etc.). Moreover, with recent incidents in garment factories, the focus is shifting towards the occupational health and safety of workers in the ready-made garment sector. The public health programmes need to

be revisited and redesigned to effectively address emerging challenges. Bangladesh has made significant progress in the development of its domestic pharmaceutical sector, with the introduction of the National Drug Policy (NDP) in 1982. Domestic manufacturers now provide 75% of total drug sales, and are expanding to develop an export market. Within the public sector, the Central Medical Stores procures and distributes drugs to public sector hospitals and facilities where they are provided free of charge. However, outside the public sector, there is a chaotic market of some 64 000 licensed pharmacies and 70 000 unlicensed drug stores, selling all types of medicines without requiring prescriptions. Polypharmacy and dispensing by the prescriber are also common in the private sector and constrains the rational use of medicines.

5.1 Public health

Provision of public health services, including emerging and noncommunicable diseases, is primarily the responsibility of the Ministry of Health and Family Welfare provided through a sector wide approach implemented by the Directorate General of Health Services and Directorate General of Family Planning. The SWAp provides service coordination, curative care, urban health, NCD/CD care, and more through its Essential Services Delivery[7] Operational Plan (ESD OP) (MOHFW, 2011). However, with rapid urbanization, addressing health issues in urban areas is a mounting challenge. Provision of public health services in the urban areas is a prerogative of the Ministry of Local Government, Rural Development and Cooperatives, while the Ministry of Health and Family Welfare provides the technical oversight and logistics. In order to improve health service delivery, coordination between the two ministries needs to be strengthened. Though there is an Operational Plan focusing on NCDs, preventive care as well as treatment of NCDs is limited. There has been some achievement in reducing MMR and IMR, but Bangladesh lags in addressing nutrition. The percentage as well as the absolute number of malnourished women and children in Bangladesh is on a declining trend, but the figures remain high. Drowning, one of the major causes of under-five mortality today, is a growing concern. Arsenic in groundwater, the main source of safe drinking water has emerged as a major public health problem. Based on these changing trends, looming

7 The ESD OP covers primary health-care services in Bangladesh which include: health education, nutrition, adequate and safe water sanitation, maternal and child health, immunization, prevention and control of endemic diseases, treatment of common ailments and injuries, and provision of essential drugs (ESD OP, 2011).

challenges, double burden and the emergence/re-emergence of diseases, the public health programmes need to be reviewed and updated to incorporate new programmes and phase out older ones which are less effective.

Disease surveillance and notification

Two key organizations, Institute of Epidemiology, Disease Control and Research (IEDCR) and International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) support disease surveillance. The surveillance systems cover priority communicable diseases, sentinel surveillance for influenza-like illnesses, emergency outbreak investigations and more. After diagnosis, WHO along with the Government is notified as per the International Health Regulations, as Bangladesh is IHR-compliant. A hospital-based influenza surveillance system is functional in 12 hospitals across the country.

Occupational health

As a developing country, Bangladesh is moving fast towards industrialization. However, the physical and organizational infrastructure is yet to meet safety standards for occupational health and the human rights of employees. New, emerging industries like shipbreaking, shipbuilding, ready-made garments and construction are highly risky and offer unsafe work environments. According to a survey in 2010, 1310 employees were killed and 899 injured in the year to June 2010 in various work-related incidents, of whom 456 workers were killed and 356 critically injured in workplace incidents (e.g. falls, electrocution, suffocation, fire, explosion) due to unsafe work environments (Occupational Safety, Health and Environment Foundation Bangladesh, 2010).

There are over 4000 Ready Made Garments (RMG) factories, employing more than four million workers generating billions of dollars in exports (Yardley J, 2011). The rapidly-growing ready-made garment sector is especially vulnerable and accidents such as building collapse and fire have become almost a regular occurrence. In November 2011, 111 workers died in the Tajrin fire incident (AMRC, 2013). In one of the largest industrial accidents, the collapse of a multistoried building housing several ready-made garment units killed a staggering 1143 workers and injured thousands in April 2013 (Odhikar, 2013).

The shipbreaking industry is another hazardous industry which is a source of livelihood for around 500 000 people directly or indirectly, and a source for 50% of the country's production of steel (World Bank, 2010). However, the infrastructure including mechanization is very poor in Bangladesh. The hazardous waste and associated occupational health hazards pose a significant national (and global) concern. The working conditions have been very poor with very limited use of personal protective measures. Workers' right to union membership is absent and the health and safety of workers compromised. In 2013 alone, 20 deaths were reported in the sector (FIDH, 2013).

The country has not yet ratified key international labor standards on occupational safety and health (OSH) policy such as the Promotional Framework for Occupational Safety and Health Convention 2006 (No. 187) and the Occupational Safety and Health Convention 1981 (No.155) (ILO: OSH Country Profile Bangladesh). However, the recently amended Bangladesh Labor Act 2013 requires that safety committees be created in factories with 50 workers or more, and that safety welfare officers be posted in workplaces with more than 500 employees. It stipulates the establishment of health centres in workplaces with over 5000 employees. The Department of Inspection for Factories and Establishments (DIFE) under the Ministry of Labor and Employment (DIFE web) is responsible for enforcing labor laws. It also provides information and advice to employers and workers concerning the most effective means of complying with the legal provisions.

Communicable Disease Control Programs

TB: Detection rates have increased, yet Bangladesh continues to rank the sixth-worst on the list of highest burden countries for TB in 2012 (WHO, 2013). While treatment success rates have increased, due to urbanization there has been an increase in the slum population (an increase in the population density) and that has led to the rise in the spread of TB. Furthermore, another major problem is the spread of MDR-TB, which requires further attention.

In order to control and eliminate TB, the Government has created a separate Operational Plan under the health sector programme (MOHFW, 2012), the National Tuberculosis Control Programme (NTP). The NTP adopted the Directly Observed Treatment Strategy in November 1993 and since then has expanded to cover all upazilas; by 2007, the geographical coverage was 100% (MOHFW, 2011). Bangladesh is on track

to achieving the sixth MDG, with TB deaths declining from 76 to 43 per 100 000 (MOHFW, 2011). A joint reassessment by WHO and the NTP will be undertaken following the completion of the prevalence survey planned for 2014 (WHO, 2013).

There are seven divisional chest disease hospitals and 44 chest clinics throughout the country that provide diagnosis and treatment services. Besides these facilities, the Upazila Health Complexes also diagnose and treat TB patients.

Bangladesh received the GFATM grants in Round-6 and Round-9 and the programme is now being managed by the Government in collaboration with the BRAC-led 21-member NGO consortium. Long-term momentum needs to be maintained to control the disease on a sustainable basis, particularly keeping in mind the emergence of MDR-TB (GFATM, 2012).

The Ministry of Health and Family Welfare, with the support of USAID, launched the Community-based Programmatic Management of Multidrug-Resistant Tuberculosis (MDR-TB) Programme. There are around 6000 new MDR-TB cases each year. Eight GeneXpert machines have been procured for high-volume chest disease clinics nationwide. With the machines, diagnosis of MDR-TB is completed in two hours and patients can be started on treatment the same day. Upazila health workers are trained under this approach to manage patient care in their communities (USAID, 2012).

Leprosy: Countrywide expansion of the leprosy programme has resulted in a remarkable reduction of the prevalence of leprosy. The National Leprosy Elimination Program (NLEP) consolidates its efforts to achieve subnational (district-level) elimination and to sustain elimination status. The NLEP further works to reduce the prevalence at national level and to achieve grade 2 deformities among new cases of less than 5% (MOHFW, 2011). Countrywide expansion of multi-drug therapy at all upazila hospitals, integration of leprosy services into the general health services, establishing model partnerships with NGOs, effective collaboration with some key groups like village doctors, religious leaders, Bangladesh Scouts and implementation of some focused activities like Special Action Projects for the Elimination of Leprosy, Leprosy Elimination Campaign, have helped towards the elimination of leprosy (MOHFW, 2011). Prevalence reached 0.24/10 000 population at the end of 2010. There are only two districts with a prevalence of more than 1/10 000 population in 2011 (PMMU, 2013).

Malaria: Malaria is endemic in 13 districts of the north-eastern border belt, including Chittagong Hill Tracts (CHT) and about 11 million people live in malaria high-risk areas (MOHFW, 2011). Presently, malaria control activities are carried out through the Communicable Disease Control (CDC) OP under DGHS. The Malaria and Parasitic Disease Control unit is responsible for the planning, implementation, monitoring and evaluation of the activities related to malaria control at the national, district and upazila levels (WHO, 2012). Access to diagnosis by microscopy is available up to the subdistrict level; however, this service is not available around the clock. Delays in reporting of positive cases need to be minimized to facilitate early initiation of treatment and the quality of microscopic diagnosis needs further improvement. Rapid Diagnostic Testing (RDT) has been introduced on a small scale in the country (WHO, 2012).

The Government's target is to reduce malaria morbidity and mortality by 60% of the baseline of 2008 by 2016 (MOHFW, 2011). Preventive services for malaria control include an integrated and strengthened surveillance system, selective vector control, promotion of insecticide-treated mosquito nets, epidemic preparedness and community participation. These activities need to be implemented and effectively monitored (MOHFW, 2011).

Bangladesh has secured GFATM funds for malaria control and implementation is ongoing. The Ministry of Health and Family Welfare works closely with a consortium of 21 NGOs, led by BRAC, to establish a network of community-level programmes that focus on the use of RDT and microscopy, effective treatment of confirmed cases, providing ITNs to people who live in the endemic areas, and implementing behaviour change and community mobilization programmes. Community Health Workers (CHWs) identify malaria symptoms, conduct blood tests using the RDT and provide treatment at the community level (BRAC, 2011). The impact of these efforts is monitored through an established surveillance and reporting mechanism from communities to the central level (GFATM, 2012).

A growing concern for Bangladesh is cross-border migration and the spread of new cases (Coker, Hunter et al., 2011). Moreover, security, geographical topography and remoteness issues, particularly in CHT areas, render implementation of the programme difficult. More effective regional collaboration is needed to control the disease.

Kala-azar: Kala-azar has re-emerged since the cessation of spraying operations. Since then, this has become a neglected tropical disease; attention and resource allocation has been inadequate. At least 20 million people in more than 27 districts are at risk, with the single district of Mymensingh accounting for more than half of all cases in Bangladesh. Similar to malaria, the Kala-azar Control Programme is the responsibility of the CDC OP. Both active and passive case detection and treatment, and disease and vector surveillance need to be further strengthened. Elimination is the goal of the current sector programme (with a prevalence of less than one case per 10 000 population in endemic areas by 2016) (MOHFW, 2011). Diagnosis needs to be strengthened through provision of microscopy, RDT and building the capacity of the staff. Under service provision, quality assurance of diagnosis needs to be strengthened for all vector-borne diseases in Bangladesh.

HIV: HIV prevalence is low and at present the epidemic remains concentrated among injecting drug users (IDUs) in a particular location. While HIV prevalence among men having sex with men and female sex workers has remained below 1%, unsafe practices among IDUs, particularly needle sharing, have caused a sharp increase in the number of people infected. Serosurveillance in 2005 showed that the incidence of HIV in IDUs was 4.9%, except for a small pocket in central Dhaka where it has reached 9%. Since Bangladesh is a low-prevalence country, interventions have not targeted the general population; however, low condom use and poor comprehensive knowledge of HIV/AIDS among youths (16% in 2006), increase the risk factors for contracting HIV/AIDS. The National Strategic Plan for HIV and AIDS guides the provision of services and is currently undergoing a midterm review (UNAIDS, 2012). The National AIDS and STD Programme (NASP) leads on HIV/AIDS control activities in Bangladesh, which are implemented mostly by NGOs – many of which are contracted through the sector programme; comprehensive service packages are directed to the most at-risk populations (including the provision of condoms, diagnosis and treatment of STIs, voluntary counselling and testing and behavioural change communication); scaling up ART treatment and care; and conducting regular serological surveillance (MOHFW, 2011).

Public health institutes

Several specialist agencies under the Ministry of Health and Family Welfare and some nonprofit private sector organizations are engaged in public health research and development, including knowledge

management. In the public sector these include the National Institute of Preventive and Social Medicine (NIPSOM), Institute of Epidemiology, Disease Control and Research (IEDCR), Institute of Public Health (IPH), National Institute of Population Research and Training (NIPORT), Bangladesh Medical Research Council (BMRC), Centre for Medical Education (CME), Institute for Child and Maternal Health (ICMH), and the DGHS Research and Development Unit. Autonomous bodies like the BSMMU and other medical colleges are also involved in research and development.

In the private sector, the lead research agencies include icddr,b, James P Grant School of Public Health, BRAC University and the Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM). There is close collaboration between some national institutes and private research institutions, such as icddr,b and IEDCR. Government also provides some support to some of private institutions, for example BIRDEM and icddr,b.

Promotive and preventive programmes

There are many ongoing promotional and preventive activities undertaken by the public and private sectors and NGOs. These activities range from family health, maternal and child health immunization, nutrition, to CDs (TB, malaria, leprosy), NCDs (diabetes, cancer, CVDs), and secondary prevention programmes (breast and cervical cancer). Most of the programmes have promotional components which are provided through various means: posters, leaflets, TV and radio drama series and "infomercials", uthanboithaks (courtyard meetings), personal interaction, home visits and mobile vans (caravan). Promotive and preventive services are discussed in detail in Section 5.3 under "Primary/ambulatory care".

5.2 Patient pathways

In Bangladesh, there is no structured referral system. Usually, the patients choose the most convenient provider or facility, based on availability, accessibility and affordability. Generally the first point of contact is either a pharmacy or a village doctor or the community health worker (either government or NGO field functionary) who visits them. In case of serious ailments, people go directly to public facilities for secondary and tertiary care. Affluent individuals choose the qualified private providers/facilities. There is no restriction on patients with minor ailments seeking care from specialists. In urban areas, people living in the vicinity of secondary or tertiary hospitals seek primary care

from these facilities. Under the sector programme, there is discussion of establishing a structured referral system, which will start from the lowest level of the community clinics up to the tertiary-level facilities at the national level (MOHFW, 2010). Patient referrals do not take place routinely, rather on an ad-hoc basis, especially for emergency cases. The structure of the referral network is fragmented, and it needs to be made more comprehensive.

5.3 Primary/ambulatory care

Ambulatory care consists of primary and specialized care (outpatient services). Primary care is delivered by a range of providers from the public sector (health and other ministries), NGOs, and the private for-profit sector. In the public sector, primary care is delivered at different tiers of Ministry of Health and Family Welfare facilities – services are provided from the lowest level of the community clinic to tertiary-level facilities. There are 12 394 functional community clinics providing primary and outdoor care. The community clinics are a flagship programme of the government (under the Community Based Health-care (CBHC) OP providing primary health care at the community level in Maternal, Neonatal, and Child Health, Reproductive Health (RH) and Family Planning (FP), IMCI, Nutrition and some CD/NCD services (MOHFW, 2012). The services are provided by Community Health-care Providers,Family Welfare Assistants, and Health Assistants (DGHS, 2011).

In urban areas, due to the lack of primary health facilities, secondary and tertiary facilities are the individual's first point of contact. Besides these facilities, there are a small number of public urban dispensaries providing primary care. The NGOs and for-profit private sector provide primary and specialized ambulatory care. Many NGOs provide these services in their health centres and hospitals, such as satellite clinics and static centers. For example, the USAID-funded network of NGOs provides primary care nationwide through its Smiling Sun clinics. In selected urban areas, NGOs contracted by the Urban Primary Health-care Project provide primary care, including comprehensive reproductive health care. Marie Stopes has a wide network providing a range of reproductive health services all over the country.

5.3.1 Promotive

Promotive health service activities are geared for improving the level of knowledge, attitude and practices in relation to health, family planning, and nutrition. A wide range of health promotion activities is undertaken

by both the public and the non-public sectors. Activities under the public sector are carried out by several ministries, departments, institutions, in addition to the Ministry of Health and Family Welfare and its directorates. The Ministry has dedicated health promotion channels through both DGHS with its Bureau of Health Education (BHE) and DGFP through its Information, Education and Motivation (IEM) unit. The BHE and IEM structure extends to the districts with designated officials and staff at each level.

The majority of Ministry of Health and Family Welfare health programmes have adopted a behavioural change communication approach to health promotion. Some communicable disease prevention programs like TB, malaria, HIV/AIDS, Kala-azar, diarrhoea and filariasis have adopted an advocacy, social mobilization and communication approach to stimulate informed demand.

It is widely recognized that NGOs play a significant role in advocacy, communication and social mobilization services and bring about behavioural change through extensive health promotion services in areas like maternal and child health, population control, and communicable diseases. Many for-profit enterprises, as a part of their CSR activities, are also involved in promotion of health and wellbeing (e.g. promotion of hand-washing by Unilever). The services now need to strengthen the focus on activities to prevent the spread of CDs and the rise of NCDs by encouraging healthy lifestyles, healthy diet and food practices.

5.3.2 Preventive

Primary and secondary preventive initiatives are undertaken by both the public and non-public sectors; however, the public sector plays a more dominant role. Initiatives focus on disease prevention programmes and outpatient care (e.g. screening and medicine). In order to address child illnesses and child health, the Government has undertaken several activities including: EPI, Integrated Management of Childhood Illnesses and nutrition corners (Planning Wing, 2013), ORT corners and ARI control (MOHFW, 2010). An achievement of Bangladesh to this extent is the extensive use of ORT and zinc tablets for diarrhoea prevention in children, helping to reduce diarrhoea rates. The Government adopted the Integrated Management of Childhood Illnesses (IMCI) strategy in 1998. The NGO-private sector partnership between icddr,b and a pharmaceutical company was instrumental in the development of the Baby Zinc Formula.

Bangladesh has achieved immunization equity in all aspects. However, in the case of antenatal care, inequity prevails (for example, antenatal care from a medically-trained provider for the lowest wealth quintile is 31% compared to the highest quintile at 75%) (NIPORT, 2013). Meanwhile, under preventive care, child health measures and CDs (HIV, TB, malaria) have been emphasized to a greater extent. However, similar investments have not been made in other programmes, such as NCDs.

5.3.3 Chronic disease

NCDs in Bangladesh were not considered a public health priority until 2007 when they were included in the HNPSP (Alam, Robinson et al., 2013). The Government has taken several critical policy decisions related to NCDs such as signing and ratifying the Framework Convention on Tobacco Control, endorsing several national strategies related to NCDs including undertaking national prevention and surveillance, developing the first comprehensive strategic plan of surveillance and prevention of NCDs 2007–2010, undertaking the national risk factor survey in 2010 and recently establishing a separate operational plan for NCDs under one line director in the DGHS (Alam, Robinson et al., 2013). Several issues have been hindering the implementation of strategic plans for NCDs including lack of clear lines of responsibility, absence of dedicated financing, and competing priorities (World Bank, 2011).

Nonetheless, as the result of the first national NCD survey, care for NCDs has been initiated, with DGHS establishing NCD "corners" in selected Upazilla Health Complexes in parallel with the existing services already in place. Dedicated to providing services for cardiovascular diseases, diabetes and chronic respiratory diseases (asthma and COPD) and screening for certain cancers, this initiative serves as a key change in service delivery for NCDs in Bangladesh. Each NCD corner is planned to have dedicated staff and equipment, and has been piloted in three UHCs (Alam, Robinson et al., 2013).

In general, however, care for NCDs is provided through health service delivery in public sector which has not yet integrated NCD prevention and treatment (Alam, Robinson et al., 2013). According to the World Bank, health workers in the primary health-care system in Bangladesh are not yet trained in NCD treatment (World Bank, 2011). Furthermore, the number of trained personnel for secondary and tertiary care services is inadequate, the biochemical investigations required for accurate diagnosis are currently only available on a fee-for-service basis, and the

provision of basic drugs for treatment is limited and sporadic at best (Alam, Robinson et al., 2013). In addition, even though Bangladesh has a national essential drugs policy and a list of essential drugs to be used in the public health services system, drugs for treating NCDs are not included in the list (World Bank, 2011). Currently, financing for NCD treatment is heavily dependent on OOP payments, which restricts access for many citizens (Alam, Robinson et al., 2013).

5.4 Inpatient care

The secondary and tertiary (specialized and teaching hospitals) facilities provide specialized ambulatory care for different specialties like cardiology, nephrology, orthopedics, endocrinology, neurology, cancer and ophthalmology at the different levels.

The primary, secondary and tertiary facilities all provide inpatient care. In the public sector, there are 583 hospitals with 41 655 beds offering inpatient care. Earlier, UHCs were the first primary-level facilities providing services. Recently, in some of the unions, Union Health Family Welfare Centers have been upgraded to 10-bed hospitals providing inpatient care, especially institutional deliveries (MOHFW, 2012). Further attention needs to be directed towards building capacity of the lower-level facilities, which provide these services to the rural areas.

The secondary-level facilities offering inpatient care include district hospitals and Maternal and Child Welfare Centres. Medical college hospitals and specialized hospitals are tertiary-level facilities. Tertiary curative care is mostly provided at the national and divisional levels through large hospitals affiliated with medical schools. The BSMMU has over 1200 beds providing general and specialist hospital services through 14 departments.

Some international hospital networks operate in the country (e.g. Apollo Hospital) and there are some which have affiliations (such as United Hospital). Private medical colleges provide clinical services as part of their clinical training for their students. Private health care facilities are governed by the Medical Practice Private Clinics and Laboratories (Regulation) Ordinance 1982 (amended in 1984). In the late 1990s, there was a rapid increase in private hospitals, clinics, and medical colleges, not only in Bangladesh but throughout the subcontinent. However, accessibility is limited to the better-off and particularly those in urban areas.

Many NGOs like Gonosasthaya Kendra and Ad-din operate secondary care hospitals. Bangladesh Diabetes Association runs a network of hospitals

under its National Health Network. Many of these facilities provide secondary care in addition to primary care. In Dhaka, the Diabetes Association runs a cardiac hospital providing super specialist services. Various branches of the Bangladesh National Society for the Blind operate eye hospitals in many parts of the country. The Society of Hearing Impaired Children operates a super specialized ear-nose-throat hospital. The Centre for Rehabilitation of the Paralyzed is well known for its rehabilitation services and operates in limited places.

5.5 Emergency care

Emergency care is delivered at different levels, from the subdistrict UHCs to the tertiary public sector facilities. Large hospitals in the nonprofit and for-profit sectors also provide emergency care (among them Square, Apollo, Lab-Aid, Holy Family, Kumudini, GK and Ad-din).

Emergency transport services (ambulance) are available in public sector facilities. There is no centralized system geared for accessing ambulance services. Individual facilities need to be approached to access the service. There are also some for-profit private enterprises that provide emergency transport services. However, the public sector ambulance services can be ill-equipped, out of order, and sometimes used for other purposes. Table 5.1 illustrates that the availability and use of emergency transport services are adversely affected due to lack of funding.

Big hospitals in the nonprofit and for-profit private sector provide emergency ambulance services. Ad-din has a fleet of small ambulances mainly for the transport of pregnant women within Dhaka City. Some hospitals such as Square and Appllo also offer air ambulance services. Nonprofit organizations such as Anjuman Mofidul Islam and Markajul Islam provide free emergency transport for patients and also for dead bodies.

Table 5.1 Availability and functional status of ambulance (2011)

Percent of health facilities reporting the items by facility-type Year 2011			
	DHs	UHCs	MCWC
Has ambulance	100%	93.6%	70.7%
Ambulance functional	97.5%	83.5%	61.7%
Lack of funding restricts the use of ambulance	47.5%	41.0%	24.1%

Source: BHFS 2011

5.6 Pharmaceutical care

5.6.1 Pharmaceutical production and supply

The National Drug Policy 1982 was instrumental in improving the supply of quality essential drugs at an affordable price, especially in the early years (Islam, 1999). This was made possible by allowing local pharmaceuticals to buy raw materials from international competitive markets and establishing a transparent mechanism for fixing drug prices (Ahmed 2004). The Essential Drug Company Ltd. was set up by the Government to supply the bulk of public sector demand (>80%). Bangladesh became the first low-income country to develop an indigenous pharmaceutical industry, thanks to NDP 1982 (Hogerzeil, 2004). It has grown to account for a market share of more than 75% of total drug sales compared to 25% before the policy was enacted. The subsequent surge in manufacturing capacity is evident in the near exponential growth in annual drug sales to US$ 1.25 billion in 2011, a more than 100-fold growth over 30 years (Ali M, 2008).

The burgeoning pharmaceutical sector has cemented its achievement by successfully exporting its products to countries of Asia, Africa, Latin America and Europe (from 37 countries in 2004 to 84 in 2011) (Shawon, 2011). The expansion of the pharmaceutical sector is further facilitated by the unique opportunity to capitalize on the exemption of patent regulations under WTO/TRIPS until January 1, 2016. The pharmaceutical industry now contributes about 1% of the country's total GDP and is the third largest contributor of government revenue (Saad, 2012).

Bangladesh is now fulfilling 95% of its demand from indigenous sources (Shawon, 2011; Saad, 2012). It now imports some essential lifesaving drugs and other high-quality drugs not manufactured in the country such as cancer drugs, vaccines and insulin, but the situation is changing (see below). Also, 80% of the active pharmaceutical ingredients (API) are imported, and currently 21 companies are producing 41 types of APIs. The government is in the process of establishing an API park which is expected to cut the cost of APIs by 20% (Shawon, 2011;Saad, 2012).

Market share of different companies

The pharmaceutical market in Bangladesh is highly concentrated and limited to a few big indigenous companies. At present, out of the top 10 pharmaceutical companies, eight are based in Bangladesh. The top 10 have 68% of the market share and the top 20 have 78%, while the

top 10 multinational companies have only 9% of market share (Shawon, 2011). The market leader, indigenous company Square Pharmaceuticals, alone has 19%+ of the market. Currently, there are 265 allopathic drug manufacturing companies in the country, of which 30 are considered large-scale units that dominate the market (Begum, 2007). The number of registered items (in brand names) exceeds 8000 (DGDA, 2011). Besides the allopathic pharmaceutical companies, there are 204 Ayurvedic, 266 Unani, 79 homeopathic and 25 herbal companies (DGDA, 2011).

Vaccines, contraceptives and other products

The Government carries out free vaccination for children under-five and women through its EPI. It has to buy US$ 20 million worth of vaccines per year besides the support from GAVI. Fortunately, this state of affairs is coming to an end. In January 2012, one of the top domestic manufacturers, Incepta, opened the first vaccine plant in the country with an annual capacity of 18 million vaccine doses (Hasib, 2012). The company also launched production of insulin.

Until 1998, all types of contraceptives including condoms were supplied by donors free of charge. Later, with technical assistance from USAID, the Ministry of Health and Family Welfare developed the capacity to procure these products from international markets. The contraceptives are marketed through the Social Marketing Company which grew out of a pilot project of USAID-funded Social Marketing Sustainability Programme. Currently, several brands of contraceptive pills and condoms are marketed through the company. Major proportions (>80%) are imported but some brands of contraceptive pills are procured from the local manufacturers, and there is a public sector condom manufacturing plant under the government-owned Essential Drugs Company to produce condoms for the local market. Out of 3 billion condoms required annually, the company is currently supplying 250 million.

5.6.2 Distribution of drugs

Central Medical Stores distributes drugs to public sector hospitals and facilities where the consumers receive them free of charge (WHO, 1985). The pharmacies in the public sector facilities are run by the Diploma pharmacists (Grade B pharmacists who have completed a three-year course following 10 years of schooling). Graduate pharmacists (Grade A pharmacists) are mainly employed in the burgeoning pharmaceutical industry, and partly in academia.

Outside the public sector, retail distribution is chaotic in the absence of any regulatory mechanism. According to the Bangladesh Chemist and Druggist Samity (BCDS), there are about 64 000 licensed pharmacies (of which 14 000 are members of the Samity or "association") and around 70 000 unlicensed drugstores in the country involved in selling drugs over the counter (Zahedee, 2009). In reality, there are no "prescription-only"drugs in Bangladesh. Anybody can buy any medicine in any amount including addictive drugs without prescriptions from these drugstores. Most of the sales people do not have training in dispensing of drugs, let alone diagnosis and treatment, yet this does not stop them from doing these things. According to law, persons dispensing drugs at the drugstores (community pharmacies) should have at least a short training of twelve weeks duration (Grade C pharmacists) before they are able to apply for a Pharmacy license. This certificate course is conducted by the Bangladesh Pharmaceutical Society (BPS) in cooperation with the BCDS through 45 tutorial centres (Mazid and Rashid, 2011). The content, form, and utility of this training remain a matter of grave concern (Amzad, 2013).

As these drugstore sales people have no other channel of information from the formal sectors open to them, they are easy prey for the aggressive marketing strategies of the pharmaceutical companies (Applbaum, 2006). Irrational use of drugs such as overprescribing, multi-drug prescribing, use of unnecessary expensive drugs and overuse of antibiotics and injections are the most common problems found with these retailers (Ahmed and Hossain, 2007). These shops are also the main channels through which the counterfeit, substandard and expired drugs are marketed (Star Report, 2003).

5.6.3 Availability and affordability of drugs at PHC level, and rational use of drugs

Availability of essential drugs is an important factor to prevent bypass of PHC facilities by the community for accessing health-care services (SIDA, 2001). Despite the decades since NDP was implemented, evidence exists of frequent and persistent unavailability of essential drugs, especially in the government health facilities where they are provided free of charge (Omer and Cockcroft, 2003). Irrational use of drugs such as overprescribing, multi-drug prescribing, use of unnecessary expensive drugs and overuse of antibiotics and injections is prevalent (Guyon, Barman et al., 1994; Islam, 1999). A recent survey on essential drugs at Upazila Health Complexes found the availability of essential drugs for

common illnesses to be poor. When the service users have to go to the market to procure drugs not available in the UHCs, affordability is also compromised due to the widely differing prices by brands (Ahmed and Islam, 2012). The study also found polypharmacy on the rise, as well as use of antibiotics in inappropriate indications and doses. This is not surprising, especially in rural Bangladesh where the provider/prescriber and the dispenser are very often the same person (village doctors, salespeople at drug shops), thus giving rise to conflicts of interest (Axon, 1994). To maximize profit, they often prescribe drugs in stock whether they are needed or not, especially the costly ones like the brand antibiotics. Added to this are the aggressive marketing strategies of the pharmaceutical companies, especially in case of the unqualified/semi-qualified providers who do not have any other channel of information from the formal sectors open to them. However, other qualified providers are not exempt from this pressure.

5.6.4 Generic prescription

The habit of writing generic prescriptions is almost non-existent in Bangladesh although marketing of drugs in generic names does occur in the public and private sectors. The list of essential medicines needed for this is not available in around half of the UHCs and urban clinics (Ahmed and Islam, 2012). A study on the prescribing practices of private practitioners in Bangladesh found medicines prescribed in generic names in only 0.2% of prescriptions written (Begum, 2012). In another study from a tertiary public sector hospital in Dhaka, only 1.33% of the prescriptions had medicines prescribed in generic names (Alam, Parveen et al., 2011). To improve this situation, concerted efforts are necessary to train and motivate doctors and allied health professionals about the benefits of generic prescription and prescribing from essential drug lists which may lead to cost savings, especially for poor patients.

5.7 Rehabilitation/intermediate care

Rehabilitative services are limited in availability due to the scope of care. Rehabilitative care can be grouped into three categories: recovery from injury like accidents (hip replacement); illnesses/disease (neurological, stroke) and substance abuse. Most of the services are concentrated in urban areas, particularly in metropolitan regions. NGOs are the main providers of rehabilitative services, followed by the public sector. Currently, the for-profit sector is also expanding in this field of care.

The National Institute of Traumatology and Orthopedic Rehabilitation (NITOR) hospital along with a few trauma centres located in different parts of the country provide rehabilitative care in the public sector. NITOR is a 500-bed tertiary level centre which receives referral patients from all over Bangladesh. The Centre for the Rehabilitation of the Paralyzed is an NGO providing curative and rehabilitative services for injuries, orthopedic conditions and strokes. There are very few treatment and rehabilitation facilities which deal with substance abuse. In the public sector, there is only one detoxification center with 40 beds in Dhaka. Some NGOs run rehabilitative centers for substance users, like Caritas and Dhaka Ahsania Mission. In the for-profit sector, there are some centres with inadequate facilities for rehabilitative services. These facilities are too costly for middle-class and poor families.

5.8 Long-term care

There is no long-term care facility in Bangladesh as yet. An unpublished report suggests that there are about six registered aged care homes in different parts of the country, but senior citizens need to be mobile as well as capable of taking care of themselves in order to live there. The homes do not get government subsidies and are run on the profit generated from the residents. The Government has recently allocated BDT 8.91 billion in 2011–2012 for providing old age allowances for senior citizens, and people with physical infirmities, handicaps and partial handicaps are given priority (Department of Social Services, 2014).

5.9 Services for informal carers

Elderly people in Bangladesh are generally taken care by their immediate family, such as sons or daughters, and get long-term care by family in case of debilitating old age. The majority of care for the elderly, disabled and chronically ill is provided by family members, and this can be a significant factor in reducing opportunities to earn income for families, and contributing to keeping them in poverty. There is currently no government support for informal carers, and very little support in terms of respite care or domiciliary care for those providing care in the home. However, in October 2013 the parliament has passed the 2013 Parents' Care Act, an unprecedented law mandating children help their elderly parents financially if they live separately. Under the law in effect, children must give parents who live apart from them a monthly income as a subsistence allowance or violators face a three-month sentence or a fine (US$ 1,280) (Chowdhury KR 2014).

5.10 Palliative care

Palliative services are very limited in availability. There are only a few private entities providing these services. Recently, the BSMMU started offering palliative care. Two memorial trusts (ASHIC Foundation for Childhood Cancer and Mosabbir Cancer Care Center) in the nonprofit private sector also provide palliative care to children with cancer.

5.11 Mental health care

There is widespread stigma against people with mental illness in Bangladesh, with myths and superstitions prevalent around the cause and outcome of mental illness. These phenomena result in delayed care-seeking, neglect and abuse (Firoz, Karim et al., 2006). In 2003–2005 a nationwide survey in Bangladesh among 13 080 people aged ≥18 years found that 16% of adult population suffer from some kind of mental disorder, the prevalence being higher among women (19%) than men (12.9%) (Firoz, Karim et al., 2006). Antipsychotics, anxiolytics, antidepressants, mood stabilizers and antiepileptic drugs are included in the list of essential medicines in Bangladesh. However, psychotropic drugs are not widely available. Few patients visiting Government facilities are provided with these.

There are only a few outpatient mental health facilities (n=50) and no community-based follow-up care or day treatment facilities in the country. There is only one dedicated mental hospital in Bangladesh which has 500 beds, where the patient stay is 137 days on average. The National Institute of Mental Health also runs a 150-bed hospital in Dhaka. There are also 15 beds in forensic inpatient units, and 3900 beds in residential facilities (e.g. homes for the destitute, inpatient detoxification centres, and homes for people with mental disability). Quite a few substance abuse treatment and rehabilitation facilities are privately run and not mentioned in any official register. Most mental health facilities are clustered in urban areas, especially in metropolitan cities. The absence of a specific mental health authority makes it difficult to monitor and evaluate the mental health services systematically.

In 2006, Bangladesh approved a mental health policy, strategy and plan as part of the policy for surveillance and prevention of NCDs. The policy recommended community-based mental health as the main approach to be followed for addressing mental health issues (WHO and Ministry of Health and Family Welfare, 2007). Mental health in Bangladesh is

legally restricted by the outdated Indian Lunacy Act 1912. To remedy this situation, a mental health act has been drafted and is currently awaiting enactment.

Challenges in providing mental health care

Lack of human resources and inadequate training facilities pose a serious challenge to mental health care in Bangladesh. A limited number of mental health specialists are available and the density of mental health professionals in public and private sectors combined is 0.49 per 100 000. Psychiatrists and psychologists occasionally need to work together. However, coordination among the various mental health professionals is challenging due to institutional structures and limitations. Facilities for mental health training are insufficient with provision for only 4% of the medical doctors and 2% of the nurses. Most primary health care facilities are heavily dependent on physicians, who make very few referrals to mental health specialists.

Budget allocation for mental health is minimal. In 2005, less than 5% of the total government health budget (approximately US$ 1.4 million) was spent on mental health services. A major proportion of the expenditures were devoted to the mental hospital (67%) with limited allocation for community-based mental health care. Social insurance schemes do not provide coverage for mental disorders (WHO and Ministry of Health and Family Welfare, 2007). Mental health is yet to be included in the initiatives for universal health coverage.

Integration of mental health services in primary health care

To address these problems, joint initiatives by the Bangladesh Government and WHO resulted in development of a blueprint for community-based mental health services (WHO-South-East Asian Regional Office,2007). In 2011, the National Institute of Mental Health (NIMH) provided the justification, advantages and feasible ways of providing mental health services through primary health care. This integration was proposed as a viable way of closing the treatment gap to ensure effective, affordable and acceptable mental health services. The consensus was to develop trained non-specialist workers, referral and back-referral with occasional shared models of care in model upazilas in the context of a limited number of specialist mental health service providers and the absence of separate community mental health centres in Bangladesh (NIMH & DGHS, 2011).

Recent initiatives

In the past, there have been some research, policy, training and advocacy initiatives in mental health that look promising in spearheading the mental health agenda. In 2009, a pilot study on paramedic-conducted mental health counselling for abused women in rural Bangladesh revealed promising results warranting the scale-up of such community-based mental health services (Naved, Rimi et al., 2009). In 2013, the Government was active in preparing a final draft of a mental health act that has been submitted to the health ministry and in the process of review by the law ministry. It is hoped that the draft act will be submitted to the Parliament and approved soon.

In 2013, a course in leadership for mental health system development has been launched for the first time in Bangladesh by the James P Grant School of Public Health at the BRAC Institute of Global Health to create leadership in the field of public mental health (Movement for Global Mental Health, 2013). This initiative was followed by the formation of an informal mental health network comprised of psychiatrists, psychologists, lawyers, activists, patient rights groups, NGOs, academic institutions and interested individuals. It remains to be seen how such academic and informal network initiatives can contribute to advancement in policy and implementation. For the first time, a recently formed NGO, Innovations for Well-being, is making efforts to provide nationwide training on first aid in mental health. In the wake of the recent human tragedy of a building collapse that killed more than 1000 people, the National Institute of Mental Health and the Clinical Psychology department in Dhaka University as well as BRAC, the biggest local NGO, and many other NGOs and private organizations were actively involved in providing emergency relief and planned for longer-term mental health services to the victims and their families (BRAC, 2013; WHO, 2013).

5.12 Dental care

Dental services are provided by both public and private sectors, concentrated in urban areas. Government provides for the position of a dental surgeon at upazila-level facilities but most of the positions remain vacant. It is difficult to retain dental practitioners in rural areas.

5.13 Complementary and Alternative Medicine (CAM) and Traditional Medicine

Alternative medical care includes homeopathic, Unani, and Ayurvedic medical services, predominant mostly in the rural areas. The government provides services through the district and upazila level facilities – medical officers, herbal assistants and compounders provide alternative medical care in the outdoor departments (DGHS, 2011; PMMU, 2013). Services are also offered by private providers. While the Government has established a few alternative medical institutes in the country, they are largely in the private sector. Alternative medical practices need to be more effectively and more complementarily integrated into health systems (aligning with the allopathic services, further developing the capacity of service providers, ensuring quality, and improving education and job standards, for example).

5.14 Health services for specific populations

The Ministry of Health and Family Welfare provides limited health-care services for special populations, such as drug addicts. The majority of health services for HIV/AIDS patients, street dwellers and sex workers are provided by private organizations at a limited scale. There are both public and private rehabilitation centers for treating drug addicts in Bangladesh. So far, there is at least one public treatment centre in Dhaka, Chittagong, Rajshahi and Khulna including three additional treatment centres in Jessore, Rajshahi and Camilla Central Jail. There are 68 private centres registered by the Department of Narcotics Control under the Ministry of Home Affairs for treatment and rehabilitation of addiction (Ministry of Home Affairs, 2014).

In 2002, icddr,b opened the first voluntary counselling and treatment (VCT) centre, Jagori, in order to provide the full range of confidential and voluntary counselling and testing with quality control in Bangladesh. Jagori also provides primary health care, including management of sexually transmitted infections; referrals to other specialists, such as antenatal care, skin specialists, clinical psychologists, and management of post-exposure prophylaxis are all available. Jagori works closely with two HIV-positive support groups in Bangladesh, Ashar Alo Society and Mukto Akash, and several other organizations that run more than 50 testing centres around the country. Jagori services have been expanded to five key cities including Dhaka, Sylhet, Chittagong, Jessore and Rangpur. In 2013 the Ministry of Health and Family Welfare planned to introduce

free health services for HIV/AIDS patients in public hospitals through five medical college hospitals in Dhaka, Chittagong, Khulna, Sylhet and Rajshahi. The Ministry plans to sign an agreement with three NGOs, Ashar Alo Society, Mukto Akash and CAAP (Confidential Approach to AIDS Prevention) which will be responsible for monitoring and supervising the service (Uzzal M, 2013;icddr,b, 2014).

There are no formal health services for the Hijra or gay community. A few NGOs provide limited health-care services for brothel-based sex workers. A small number of NGOs provide health services for the urban homeless (apart from sex workers) and there are 18 registered red light areas in Bangladesh. So far, there is no formal service available to street dwellers apart from the Essential Services Package provided through the Government and NGOs in rural and urban areas (icddr,b, 2014).

6 Principal health reforms

Chapter summary

Recent health reforms in Bangladesh commenced with the Health and Population Sector Strategy developed by the Government and donors in 1997. This strategy advocated a number of institutional and governance reforms, notably the shift from a project basis towards a coordinated sectoral programme. These reforms were then implemented through a series of five-year sectoral programmes, commencing with the HPSP of 1998–2003. Key reforms included: pooling of donor funds in a SWAp, provision of selected primary health-care services under an Essential Services Package to the poor, introduction of one-stop services through community clinics, and unification as well as bifurcation of health and family planning wings of the Ministry of Health and Family Welfare. Under the latest five-year programme, the HNPSDP, health sector activities have been grouped into 38 operational plans implemented by 38 Line Directors. While the SWAp has improved coordination and alignment among multiple donor projects, there remains fragmentation within the vertical programmes of the Ministry, continuation of a number of vertical programmes funded outside the SWAp, and a lack of a comprehensive ministerial plan.

Other key reforms include: the establishment of community clinics to replace domiciliary visits; their withdrawal when coverage of key programmes fell, and then re-instatement together with domiciliary programmes by the new government; unification of the DGHS and DGFP in 2000, and then subsequent re-separation in the face of poor performance by FP officers; attempts at decentralization of health services to the upazila level, although with limited delegated authority; and the recent maternal health voucher scheme.

Recently, in recognition that the high levels of OOP expenditure form a barrier to utilization, a Health-care Financing Strategy (2012–2032) has been developed to provide direction in achieving universal health coverage. The strategy puts emphasis on prepayment mechanisms

with scope of risk-pooling and separate mechanisms are suggested for people in different economic sectors (formal sector, informal sector and people in poverty). Taxes, social health insurance contribution and community-based health insurance schemes have been recommended. Over its 20-year implementation period (2012–2032), the strategy aims at reduction of OOPP from 64% to 32% of total health expenditure, increase in government expenditure from 26% to 30%, increase in social protection from less than 1% to 32%, and reduced dependence on external funds from 8% to 5%.

6.1 Analysis of recent major reforms in Bangladesh

Over the last decade, the health sector has undergone some major reforms leading to a breakthrough towards attaining greater equity and efficiency in resource use. The National Health Policy formulated in 2000 formalized some massive institutional reforms that the health sector had been going through in the 1990s under the influence of external donors. In 1996 the World Bank and other consortium members indicated to the Government that they would not proceed with further credits until a comprehensive, sector wide strategy had been adopted (Vaughan, Karim et al., 2000). This also included substantive structural and organizational reforms by the Ministry of Health and Family Welfare (Buse and Gwin, 1998). Accordingly, the HPSS approved in 1997 showed the health sector a new direction towards efficiency and cost-effectiveness through advocating certain institutional and governance reforms. The HPSS later fed into the 2000 National Health Policy. As a result, these documents advocated for a common set of institutional reform strategies.

Reflecting these strategies, in 1998, the Health and Population Sector Programme was launched. HPSP (1998–2003) emerged as a major reform programme that initiated certain major boosters to the health sector, many of which have been carried forward by the latter programmes including a SWAp for management, provision of selected primary health-care services under Essential Services Package to the poor, introduction of one-stop services through community clinics, and unification as well as splitting of health and family planning wings of the Ministry of Health and Family Welfare. The next five-year health programme, HNPSP 2003–2010, adopted a few more reform measures, including a maternal voucher programme to reduce maternal mortality. Major health reforms since 2000 and their impacts on the health system are presented in Table 6.1.

Table 6.1 Recent reforms and the accompanying changes in the health system

Policy/ Programmes	Changes in the health system	Impact on the health system
Health Policy 14 August, 2000	Basic services are provided through a package called Essential Service Package (ESP) to make health services cost effective.	ESP is implemented as a cost effective way of providing primary care services with some pitfalls. Urban areas have been kept outside the ESP intervention.
	All the basic services under ESP delivered through one-stop service centres at the thana (THCs), Union (UHFWC) and partially at the village level Community Clinics replacing domiciliary services.	Initially Community Clinics failed to produce the desired result due to noncooperation of service providers due to their conflict of interests and because of the unwillingness of the community to accept the withdrawal of domiciliary service. Above all, change of political regime also led to the underperformance of Community Clinics.
	Unification of health and family planning wings of the ministry of Health at the thana level and below instead of top-to-bottom unification.	Unification did not produce positive results as it was done without considering the institutional constraints. Deep-rooted differences between different cadres of personnel have posed serious constraints to adequate service provisions.
	Transition from a project driven approach to a Sector-Wide Approach (SWAp) has taken place. In planning, the newly introduced SWAp enfolded all the relevant programmes as a single entity rather than having separate plans for individual projects. In implementation, all sources of funding, including GOB, donors, and households were considered as sectoral resources as a whole.	SWAp has helped create a common funding pool for donors, reduced duplication, and brought about greater control over funds by the government. Uniform financial accounting procedure has been developed and implemented. Significant progress has been made in standardizing and unifying disbursement procedures and reducing transaction costs associated with managing multiple donor funds. Despite these achievements some structural issues still act as the barriers to the full implementation of SWAp.

Source: Asia Pacific Observatory on Health Systems and Policies

Table 6.1 Recent reforms and the accompanying changes in the health system (cont.)

Policy/ Programmes	Changes in the health system	Impact on the health system
The HNPSP (2003–2010)	DSF has been implemented in the form of maternal health voucher scheme. The scheme is implemented with provisions for antenatal and birthing care at home and in public or private sector facilities. It also provides for transport and maternity care in 46 poorest upazilas.	Voucher scheme has been able to produce a very positive result. The program coverage is expanding from initial 10 upazilas in 2007 to 46 upazilas in 2012. Performance data at the output level also continue to improve. Safe delivery rate is now at impressive 89% amongst the voucher recipients who constitute approximately 50% of the pregnant women in the target upazilas. More strikingly, the maternal mortality rate among the voucher-holder women is 12 per 100 000 live births, in sharp contrast with the national rate of 194 per 100 000 live births (DGHS 2011).
	Health and family planning wings have again been bifurcated	Implementation of the philosophy of integrated planning through SWAp is facing difficulty. Duplications, overlapping continue to exist.
	Domiciliary services have been reinstated and CCs have been revitalized	Currently, with the reinstatement of domiciliary services, and other upgrading attempts, CCs have been able to create enthusiasm among the villagers. Rate of CC utilization has been increased in recent years.
	Decentralization of health services has been implemented partially through delegation of some administrative and budgetary authority to the local level.	Centralized procurement of logistics for all programs result in delays in providing supplies and logistics. This often prevents the newly constructed health facilities from functioning properly.

Source: Asia Pacific Observatory on Health Systems and Policies

6.1.1 Introduction of Sector Wide Approach

HPSP introduced a transition from a project approach to a sector-wide approach of management through which all health sector projects were planned and managed in an integrated manner instead of as vertical initiatives. Accordingly, the SWAp was introduced in 1998 through HPSP (1998–2003) and the subsequent health programmes have made commitments to continue to follow this approach. World Bank (2009) notes, "SWAps represent a shift in the focus, relationship and behaviour of donors and governments. They involve high levels of donor and country coordination for the achievement of program goals, and can be financed

through parallel financing, pooled financing, general budget support, or a combination".

According to the SWAp, under the HNPSDP, the health sector activities have been grouped into 38 programmes with 38 operational plans to be implemented by 38 Line Directors with policy and administrative guidance from the Ministry of Health and Family Welfare. It has helped create a common funding pool for donors, reduced duplication, and brought about greater control over funds by the Government. All institutions in the health sector operate on the same planning and budget cycle. Development partners that are pooling resources (known as the "Pooled Development Partners") provide sector-wide support by making contributions to a foreign exchange account held by the Government at the Central Bank. Together with the Government's contributions, those funds are made available to the implementing agencies or spending units through state budgetary channels (IRT, 2009).

SWAp has produced impressive results. Regarding the impact of SWAp, the Ministry of Health and Family Welfare (2011) states,"SWAp has created opportunity for coordination, harmonization and alignment of multiple donor funded projects and resources. Uniform financial accounting procedure has been developed and implemented. Significant progress was made in standardizing and unifying disbursement procedures and reducing transaction costs associated with managing multiple donor funds". Despite these achievements, SWAp has still been facing challenges in its full implementation.

Fragmented structure: Although SWAp aims to eliminate vertical structures, the health sector itself is characterized by a vertical organizational structure (DGHS, DGFP, DNS, NNP, DDA, NIPORT), most of which are operating parallel systems for human resources, procurement, monitoring and financial reporting (IRT, 2009). Coordination among these institutions is very weak.

Ill-defined sectoral boundary: The boundary of the health sector is not clearly defined. There are 32 operational plans under the Ministry of Health and Family Welfare and a number of projects included in the sector. The Ministry is implementing several parallel projects included in its Annual Development Plan (ADP), which are outside the SWAp programme. The boundaries of the sector extend beyond the mandate of the Ministry.

Urban health is being managed by the Ministry of Local Government while a number of infrastructure projects still remain outside the purview of the HNPSDP or the SWAp. In addition to this, a number of vertical programmes like TB, Malaria, and HIV/AIDS as well as numerous NGO programmes are being implemented under separate financing arrangements. This hampers sector-wide monitoring and evaluation (IRT, 2009). A true SWAp would encompass both urban and rural health services provided by any ministries including the Ministry of Health and Family Welfare, Ministry of Local Government, Ministry of Chittagong Hill Tracts, Ministry of Home Affairs, as well as the buy-in and participation from other players, including the Ministry of Finance. Moreover, private sector and NGO expenditures constituting a large share of health budget remains outside the purview of SWAp.

Lack of a comprehensive ministerial planning and managerial guideline: SWAp is not working well even in aid coordination towards increased aid effectiveness. A common account has been opened into which all donors earmark funds to the Ministry but the Ministry often lacks adequate and timely information on all earmarked funds for planning purposes. Explaining the reasons, the ITR (2008) states,

> *"The coordination framework is weak, and does not inhibit development partners or MOHFW from pursuing agendas outside the HNPSP, sometimes sharing information, but other times not…parallel funding is still not harmonized, while the pool fund is only partially harmonized with [Government] procedures."*

On the other hand, although substantial progress has been made in the standardization of procurement procedures, no common guidelines have yet been developed for managing technical assistance. The procurement of technical assistance is, thus, still done under development partner-specific guidelines (MOHFW, 2008). Due to the bifurcated structure in the Ministry, adequate and timely monitoring of sector performance is yet to take a sustainable shape for using routine information for decision-making (MOHFW, 2011).

Box 6.1 Strategic interventions and supportive actions proposed by the Health-care Financing Strategy.

1. Design and implement Social Health Protection Scheme

- determine institutional arrangements for Social Health Protection Scheme
- design and implement Health Equity Fund/National Health Security Office
- implement SSK for Below Poverty Line (BPL) population
- Design social health protection scheme for above BPL (formal and informal)

2. Strengthen financing and provision of public health-care services

- implement needs- and performance- based allocation
- scale up/reinforce Result-Based Financing (MHVS)
- retain user fees at point of collection

3. Strengthen national capacity

- support information exchange platform/knowledge hub/resources pool
- develop the capacity to design and manage the social health protection scheme
- strengthen financial management and accountability
- improve monitoring and evaluation
- introduce mechanisms to support the production of additional key staff (nurses, paramedics and medical technicians)

Source: Asia Pacific Observatory on Health Systems and Policies

6.1.2 Selected primary health-care services under the Essential Service Package

To achieve the greatest health impact per taka spent and to serve the most vulnerable groups like women, children and the poor, an ESP containing five basic maternal, child and public health services has been introduced to be delivered from one single service point, called "one-stop shopping". The objective of introducing the ESP was to facilitate access to multiple health services for clients, for example enabling multiple family members to be seen during a single health facility visit. One-stop services (close-to-client) were provided in three tiers of facility: Thana Health Complexes at the thana level, Union Health and Family Welfare Centres at the union level and the community clinics at the village level. To achieve equity and efficiency in resource distribution, an ESP was designed to allocate 60–65% of the total health-care resources to the primary level (upazila and below) (Bangladesh Health Watch, 2012). ESP is being implemented as a cost-effective way of providing primary care services. It has some pitfalls. The Sixth Five Year Plan (2011–15) notes that the ESP was mainly directed towards rural areas, leaving a major gap in primary health-care coverage of the urban poor. Moreover, there is still no system in place to monitor health-related inequalities.

6.1.3 Establishment of community clinics, withdrawal of domiciliary services and their reinstatement

Until the introduction of HPSP in 1998 domiciliary health and family planning services were a very popular source of care for the rural illiterate poor women. Deeming domiciliary services not to be cost-effective (since the health workers did not have any office at the village level and their household visits did not guarantee meeting patients), it was thought that having a facility at the village level would make financial sense. Accordingly, the 1998 HPSP introduced a change from the previous household-level service to facility-level service by setting up community clinics in villages to provide one-stop services. During 1998–2001, under the leadership of the Awami League Government, 10 723 community clinics at a ratio of one for every 6000 population were established against the planned 1:18 000. Establishment of community clinics was also considered a step toward bringing primary health services closer to the people. Community clinics are managed as a partnership between Government and the community. Two Government health workers provide ESP services at the clinics with 30 items of necessary medicines, but the clinic is managed by a 9–13 member body of local people, called the Community Group. Community responsibilities include day-to-day maintenance, cleanliness, security and local fund generation.

Thus a major strategic shift in the service delivery pattern –from household domiciliary to facility-based services – was introduced. Such policy change was not based on an assessment of the needs of the population. As a result, it had a tremendously negative impact on the performance of health and family planning programmes. The sectoral achievement during the HPSP period was quite disappointing. The total fertility rate remained stagnant (3.3) for the entire period. Contraceptive prevalence rates saw a slight increase from 49.2% in 1997 to 53.8% in 2003 while maternal and infant mortality rates did not see any significant fall. Such a lacklustre performance was due to the non-receptiveness both of the service providers at the local level and the recipients. From the recipient side, rural women, who were so long accustomed to receive domiciliary services, were not ready to visit facilities to obtain the required services. On the other hand, service providers also had many conflicts of interest, as will be discussed in the next subsection. This conflict caused noncooperation from the provider side and ultimately the new facility failed to provide services as desired.

However, when the Bangladesh Nationalist Party assumed power in 2001, the community clinics were closed before producing any positive

results and domiciliary services were reinstated. However, the Awami League returned to power in 2009 and took initiatives to revitalize the community clinics as the top priority in the health sector. Accordingly, community clinics have been upgraded and alongside them, domiciliary services continue to function. Upgrading included making the existing community clinics functional, construction of 2876 new clinics, appointing one Community Health-care Provider for each clinic, and upgrading them with modern information technology to store, process and transmit health related data from the catchment areas. The increasing rate of utilization of community clinics in recent years (2009–2011) as projected in the Bangladesh Health Bulletin 2012 is a manifestation of the success of community clinics to be able to create an impact over the health system (DGHS, 2012).

6.1.4 Unification of Health and Family Planning wings of the Ministry of Health and the U-turn

Both wings of the health ministry – Health and Family Planning – implement programmes related to Maternal and Child Health, which often causes overlapping and duplication. In order to provide health and family planning services in a package under the ESP and to ensure efficiency gains, attempts were undertaken to integrate Health and Family Planning wings. Integration was far from smooth even during the Awami League regime that introduced it, due to bureaucratic politics. Fearing resistance from higher-level bureaucrats, integration was planned to take place in stages. By early 2000, the two wings were unified at the upazila level and below as the upper-level officials (from district to Directorate level) of the two wings who were of comparable official status, did not want to compromise their positions. On the other hand, integration at upazila level and below was made possible because the upazila-level family planning officials were already of a lower official status than the upazila health officials and therefore, it was easier to bring them under their supervision (Osman FA, 2004). Nonetheless, the upazila-level family planning officials resented the integration. They did not want to be accountable to the upazila health officials as it curtailed their authority to manage family planning services (Hossain and Osman, 2007). Ultimately, the deteriorating morale of family planning officers led to disruption of family planning service delivery and stagnation in the reducing the total fertility rate and increasing the contraceptive prevalence rate. The association of the Awami League with the integration process and the performance

failures were used by the next Government led by Bangladesh Nationalist Party as grounds for policy reversal. After continuing confusion for a long time, in 2007, with the introduction of HNPSP (2007–2011), the previously bifurcated Health and Family Planning wings of the Ministry faced a U-turn.

Health services have been integrated at the community level without considering the institutional constraints. Although this has been an attractive proposition, deep-rooted differences between different cadres of personnel have posed serious challenges to adequate service provision. These policy changes have had considerable negative effects on health, particularly among the ultra-poor. However, the U-turn and return to the bifurcation of the two wings would perpetuate inefficiencies and overlapping of the health programmes.

6.1.5 Decentralization of health services

To address inefficiencies, decentralization of health administration has long been proposed, with little follow-up. The HPSP (1998–2003) strongly advocated for a decentralized health system with emphasis on greater delegation of responsibility for financial management to thana/upazila level and greater autonomy to hospital management. The subsequent HNPSP (2007–2011) elaborated the decentralization issue by specifying (i) decentralized planning and budgeting; (ii) setting of local priorities in consultation with local communities; and (iii) the development of an Upazila Health System, managed by Upazila Health Management Committees as an expansion of the primary health-care system.

These have been implemented with little delegation of power from the centre to the concerned organizations. For instance, centralized procurement of logistics for all programmes results in delays. This often prevents the newly-constructed health facilities from functioning properly. Formation of Upazila Health Management Committees has remained mere rhetoric. Having decentralized the Upazila Health System through strengthening the Upazila Health Complexes, the Union Health and Family Welfare Centers/Sub-Centers still lack adequate human resources, drugs and other medical aids. The ongoing HPNSDP (2011–16) has also committed to the introduction of a decentralized Upazila Health System. The programme emphasizes nationwide coverage of the ESP through the Upazila Health System. This requires a large investment in facilities, staff, and logistics as well as delegation of tasks and responsibilities from central, division and district levels to the

upazilas, unions and wards. Given the uncertainties of introducing a decentralized administrative system in the larger political and administrative context of the country, the possibility of implementing a decentralized health system in Bangladesh remains elusive.

6.1.6 Maternal Health Voucher Scheme

To address the problem of poor utilization of heath facility services by the poor mothers, the Government introduced a demand-side financing scheme in 2007 to attempt to influence health seeking behaviour. Demand-side financing involves channelling a part of the Government subsidy for health services directly to households, allowing them to purchase health services themselves or through an agency (Bhatia, Yesudian et al., 2006). In line with the reform agenda of the Health Sector Programmes, WHO and the Ministry agreed in 2004 to pilot the innovative Maternal Health Voucher Scheme in order to improve access to and use of quality maternal health services. The scheme was formally inaugurated in 2007. This scheme aims to increase utilization of health services by the poor by subsidizing medicines, tests and transport to the health facility, as access is greatly discouraged due to high OOP costs. Currently, the programme is being implemented in 502 unions of 46 upazilas in 38 districts (DGHS, 2011). Under the programme, eligibility for getting vouchers is a defined poverty criterion, validated by the local government representative. A voucher entitles its holder to specific free health services, such as antenatal and postnatal care, safe delivery, treatment of complications including caesarean section, transportation costs, and laboratory tests. Private and NGO care providers, once certified under the scheme, are reimbursed for vouchers. If delivery is attended by skilled staff, voucher-holders get cash benefits or nutritious food and giftboxes.

The programme is gradually expanding its coverage from the initial 10 upazilas in 2007 to 46 upazilas currently. Performance data at the output level continue to improve. The safe delivery rate is now at an impressive 89% among the voucher recipients who constitute approximately 50% of the pregnant women in the target upazilas. Participation of non-public health-care providers (NGO and private facilities) is also increasing. An Economic Evaluation Report released in January 2011 says that the scheme is very successful with an "unprecedented positive impact in increasing utilization of maternal

services from designated public and private providers in a short period of time". In addition to the increased rate of safe delivery, the facility delivery rate also increased to 40%. The utilization rate of antenatal care services continued to improve. Strikingly, the maternal mortality rate among the voucher-holder women is 12 per 100 000 live births, in sharp contrast with the national rate of 194 per 100 000 live births (DGHS, 2011).

Despite these achievements, mistargeting has been found to be common in the selection of beneficiaries. Though the programme is designed to provide subsidy for maternal health care for up to two children, lack of reliable data and an inadequate monitoring system leads to adverse selection of beneficiaries (BRAC, 2012). Moreover, the incentives for pregnant mothers have also in some cases created adverse impacts on the family planning programme.

6.1.7 Health care financing reform

Against the backdrop of high OOPPs, low government spending on health and poor budget execution, the Ministry of Health and Family Welfare in 2012 adopted a health-care financing strategy, Expanding Social Protection for Health: Towards Universal Coverage Health-care Financing Strategy 2012–2032 (HEU, 2013). The first ever Health-care Financing Strategy attempts to address three major challenges: (i) inadequate health financing; (ii) inequity in health financing and utilization, and (iii) inefficient use of existing resources. To address these challenges and to increase financial risk protection for the entire population, it determines three strategic objectives: (i) generate more resources for effective health services; (ii) improve equity and increase health-care access, especially for the poor and vulnerable; and (iii) enhance efficiency in resource allocation and utilization. Over the proposed 20-year implementation period, the strategy aims at reducing OOPP from 64% to 32% of THE, increasing government expenditure from 26% to 30% of THE and increasing population coverage by prepayment schemes (tax-financed and social health protection schemes) to 100% by 2032. The Health-care Financing Strategy envisages increasing budgetary allocation for health to 15% by 2032, which is in alignment with the Sixth Five Year Plan's target of increasing the health budget to 12% by 2015 (HEU, 2013).

The strategy will be implemented in three phases, short, medium and long-term. The short term will be up to the end of HPNSDP, i.e. 2016. In this phase, SSK (the Shasthyo Shuroksha Kormasuchisocial health protection scheme) pilot rolls out, and a National Health Security Office

and other key elements of the social health protection scheme will be designed. The medium term will be up to 2021 when the activities launched during the preceding phase (SSK, National Health Security Office and social health protection programmes) will be appropriately scaled up. The long-term will end in 2032. In the long-term, building upon the achievements of the short and medium terms of sequenced implementation of the strategic interventions proposed, Bangladesh will move towards achieving universal health coverage. In order to increase access, tax-funded primary and preventive care and services will remain free for all groups of the population and must be strengthened for improving efficiency and effectiveness.

The Health Care Financing Strategy will start with populations below the poverty line and the formal sector and eventually will cover the informal sector. The strategy intends to cover all formal and informal sectors and those under the poverty line under a common scheme. The Ministry of Health and Family Welfare needs to focus on designing a common scheme for all segments of population (formal and informal, poor and non-poor) from the start to avoid fragmentation in pooling and also to avoid creating any interest groups that will resist equitable expansion of coverage, considering problems faced in other countries such as Thailand (Health Insurance System Research Office, 2012). Another issue is Bangladesh's large informal sector. Any contribution-based scheme for such a large sector will be immensely difficult to implement. Keeping this in mind, the strategy may need to be revisited.

The Health-care Financing Strategy proposed a substantial change in the current payment system from direct payment (i.e. OOP) made at the service point to paying for services through prepaid risk-pooled schemes. This involves determining a suitable institutional arrangement to manage social health protection schemes for different groups. Besides institutional arrangements, financial management and procurement capacity need to be significantly improved to implement the proposed schemes. All these require substantial Government efforts, resources and an effective change management process for successful implementation of the strategy (IRT, 2013).

The Health-care Financing Strategy proposes a range of interventions to mobilize resources for the health sector. However, it does not provide estimates of additional funds each intervention is expected to generate. The short term will end in 2016. A number of activities need to be carried

out in this phase. The pilot to cover the population in poverty is yet to start. A number of activities are in the development stage. For example, a social health protection scheme for the formal sector is being designed, the required law has been drafted and a communication strategy prepared.

The Health-care Financing Strategy is yet to be translated into a realistic and feasible investment plan in order to equip the health ministry to negotiate with the Ministry of Finance for reprioritization of health within the Government budget. Furthermore, the full impact of the Health-care Financing Strategy will depend on actions that fall under the other building blocks: human resource development and management, quality of health-care services, disbursement of budgetary allocations, information technology, governance and stewardship.

Mobilizing additional resources for Health-care Financing Strategy implementation

In a World Bank assessment of the vulnerability of different countries, the overall fiscal capacity of those countries was also assessed based on respective countries' debt–GDP ratio, fiscal deficit, current account balance, international reserves, and reversible capital flows. Bangladesh is classified as a country that has some fiscal capacity (Cord, Verhoeven, Blomquist and Rijkers, 2009). It is important to examine possible options for raising additional resources and quantify the possible contribution from each option in order to estimate implement the Health-care Financing Strategy in a limited fiscal capacity setting.

Generating health-specific resources

Health-specific resources such as earmarked taxes and introduction of mandatory health insurance can generate additional resources for health. According to a recent study, additional resources of US$ 287.5 million will be generated if tobacco taxes are raised from current level to the WHO/WB-suggested level (Barkat, Chowdhury et al., 2012). Excise taxes in Bangladesh account for just over half the retail cigarette prices on average and total taxes on cigarettes account for almost two thirds of retail prices. WHO and World Bank recommend raising them to two thirds and four fifths of the retail prices respectively. Low taxes made cigarette prices in Bangladesh the lowest in the region (Tekabe and Tandon, 2013). Bangladesh may raise the taxes to the level recommended by WHO and the World Bank and earmark the additional revenue generated from this for the health sector.

Mobilizing external resources

Historically, the health sector has depended on external resources. External assistance in absolute terms more than doubled between the first and third SWAp while as a share in total sector programme budget, it fluctuated. While the first sector programme, HPSP, received 24% of its financing from external sources, the corresponding figures for the second sector programme, HNPSP and the third sector programme, HPNSDP were 27% and 24% respectively[8]. It is to be noted that the share of external assistance comprising loans and grants in the total national budget is much less than that in the health budget. According to the budget document 2013–2014, foreign loans and grants account for 9.4% of the total national budget. However, given the global downturn the prospect of increased external resources is limited.

Efficiency gains

Increasing budgeted amounts for health may not be enough for generating fiscal space if the resources are not spent efficiently. Even without increasing the budget amount, fiscal space might be generated by increasing the efficiency of health systems. A recent study on Ministry of Health and Family Welfare facility efficiency found that the facilities expanded service delivery during 1997–2010 even though in real terms the facility budget remained static (Rannan-Eliya RP et al., 2012). This led to substantial reductions in real unit costs which declined to one half to one third of the levels in 1997. This means financing of expanded service delivery was done through efficiency gains.

Several studies indicated areas where efficiency improvement is essential. According to a recent report (PMMU, 2013), the Bangladesh Medical Equipment Survey 2012 found that between 2008 and 2012, the average time between signing of a contract and the goods to be received by the hospital fell from 29 months to 19.6 months; and the proportion of equipment lying idle declined from 57% to 46%. This shows significant improvement within four years. The main reasons for not utilizing equipment include the lack of a comprehensive equipment planning and an absence of adequate maintenance (PMMU, 2013). There is substantial room for improvement.

Another area is absenteeism among the medical staff at the Ministry facilities. Studies found high absenteeism among doctors and nurses at

8 Sources include Project Appraisal Documents (PAD) and Program Implementation Plans (PIP) of HPSP, HNPSP and HPNSDP

facilities at upazila level and below (FMRP, 2005). However, a recent study reported significantly lower absenteeism (7.4%) among physicians and non-physicians at the facilities at upazila level and below (World Bank, 2012). At the upazila level, absenteeism among physicians (10%) is double the absenteeism among non-physicians (5%).

Ambulances are in working condition in most of the district (97%) and upazila (83%) hospitals. However, lack of funding restricts use of the ambulance in 47% and 41% of hospitals at the district and upazila level respectively.

Ministry facilities lack adequate supply of essential drugs. The Bangladesh Health Facility Survey 2011 found that 27% the hospitals at the district level and below have 75% of the 37 listed essential drugs. Rannan-Eliya et al. (2012) report that during 1997–2010 in nominal terms, the overall facility budget tripled while the facility budget for medicines increased seven-fold. This may have had a positive impact on expansion of service delivery during the same period. To strengthen the delivery of a quality health-care system, drug supply should be improved. Improving the availability of essential drugs at Ministry facilities would increase utilization of services and lower unit costs.

Better coordination in budgeting, planning and implementation at all levels will lead to efficiency gains. At present, resource allocation to facilities is infrastructure- and human resource-driven without considering needs of the facilities or the population they serve. Introducing needs-based resource allocation will improve efficiency in resource allocation as well as in utilization. Moreover, salaries for personnel dominate the public spending at facilities, particularly at the upazila level and below (Rannan-Eliya RP et al., 2012). Increasing discretionary elements of public spending at the facility level may lead to some efficiency gains.

6.2 Future developments

Despite various reforms undertaken to make services cost-effective and efficient, that have shown many positive results, Bangladesh has yet to attain universal health coverage. It is imperative for the country to undertake necessary steps for achieving universal health coverage in the near future. The key challenges to financing for universal coverage in Bangladesh are the high and potentially impoverishing OOP spending on health; the poor quality of service delivery in the public sector; a large and mostly unregulated private sector that dominates provision of care; and the increasing burden of NCDs requiring costly individual care (Bangladesh Health Watch, 2012). Thus cost sharing is a major issue in attaining universal health care.

In recent times, it is recognized that some form of insurance involving risk-pooling and prepayments could be an effective mechanism to ensure universal health coverage (WHO, 2010). The recently revised 2012 National Health Policy has also termed health services as an individual right and to help exercise this right, the policy advocates health insurance for formal sector employees and the introduction of health cards for the poor and disadvantaged.

The inaugural Health-care Financing Strategy, now approved by the Minister of Health and Family Welfare, provides a framework for developing and advancing health financing during 2012–2032 (MOHFW, 2012).The strategy is aligned with the vision of the HPNSDP 2011–2016, universal health coverage as defined by WHO, and the 2011 National Health Policy. The strategy puts emphasis on prepayment mechanisms with scope of risk-pooling and separate mechanisms are suggested for people in different economic sectors (formal sector, informal sector and people in poverty). Taxes, social health insurance contribution, community-based health insurance schemes etc. have been recommended. In addition to the gains noted above,the strategy aims to reduce dependence on external funds from 8% to 5%. It also targets reduced inefficiency in resource utilization in terms of no unspent budget which is currently 5%. The strategy is developed for achieving universal health coverage in Bangladesh by providing financial risk protection to all people in the country.

7 Assessment of the health system

Chapter summary

The stated objectives in the 2011 National Health Policy are: (i) strengthening primary health and emergency care for all; (ii) expanding availability of client-centred, equity-focused and high-quality health-care services; and (iii) motivating people to seek care based on rights for health.

In terms of financial protection and equity in financing, Bangladesh is not performing well, as evidenced by the high and increasing proportion of health financed by OOP, from 57% in 1997 to 64% in 2007. While theoretically all Bangladeshi citizens have the right to receive health care according to need, low government investment in public facilities, some user charges and payments for medicines, and high use of the private sector have resulted in significant inequity in access to services. Current reforms such as community clinics and maternal care vouchers provide access to only limited services; meanwhile, the proposal for health insurance for formal sector workers will not address the majority of workers in the informal and rural sector.

In relation to user experience and equity of access, the general public perception of the public health system is poor, with complaints of long waiting times, absenteeism, poor behaviour of providers, and exclusion of some marginalized groups. Access to care demonstrates much high rates of utilization of public and private services by the wealthier quintiles, but some improvement in equity in access over the last decade.

Despite these issues, population health outcomes have shown marked improvement, with falls in maternal, infant and under-five mortality rates, and significant reductions in total fertility rate. In comparison with MDG targets, infant and under-five mortality and total fertility are on track to reach the 2015 targets; maternal mortality and prevalence of underweight

are not on track to reach targets despite significant reductions, while targets for HIV, malaria and TB and still potentially achievable.

These outcomes have been achieved by improvements in coverage with key interventions, such as delivery in a health facility, childhood immunization, management of diarrhoea with ORS, and treatment success rates for TB. However, the provision and coverage of services for the growing burden of NCDs is only just beginning.

However, quality of care in both public and private services is poor, with little assessment of the quality of provider care, low levels of professional knowledge, and poor application. These problems are compounded by poor accountability, with high levels of absenteeism, corruption and poor performance by public and private providers.

7.1 Stated objectives of the health system

In the revised and updated 2011 National Health Policy, the specific goals of the health system are delineated as: (i) ensure primary health and emergency care for all; (ii) expand availability of client-centred, equity-focused and quality health care; and (iii) motivate people to seek health services for control and prevention of diseases based on rights for health. To achieve these, objectives such as taking health services to the doorstep of the population (e.g., one community clinic for every 6000 people within a limited radius), reducing maternal, neonatal and child mortality and morbidity, achieving replacement level fertility by 2021, and reducing gender and equity gaps in health-care provision have been established.

Table 7.1 Health indicators and their targets

Key health indicators	Baseline positions	Current position	Target 2015
Infant mortality rate (IMR) / 1000 live births	153 (1970s)	65 (2004)	On track to 31
Neonatal mortality / 1000 live births	52 (1993)	41 (2004)	Off track to 22
Under-five mortality (U5MR) / 1000 live births	151 (1990/1)	88 (2004)	On track to 48
Maternal mortality / 100 000 live births	574 (1990/1)	194 (BMMS 2010)	Off track to 147
Prevalence of underweight children (6 to 59 months)	67 (1990)	36 (BDHS 2011)	Off track to 33
% U5 stunted (24–59 months)	54.6 (BDHS 1996)	41 (BDHS 2011)	Off track to 25
Total fertility rate	6.3 (BFS 1975)	2.3 (BDHS 2011)	On track to 2.2
Prevalence of HIV / 100 000	0.005 (1990/1)	<.001	On track - halting
Prevalence of malaria / 100 000	43 (1990/1)	59 (2008)	On track - halting
Prevalence of TB / 100 000	264 (1990/1)	225 (2007)	On track - halting

Source: Asia Pacific Observatory on Health Systems and Policies

Historically, a number of policy approaches such as the national five-year plans, donor-led health and population projects, two national health policies and the national health workforce strategies guided the development of health sector in realizing the above goals. Through these policies and strategies, several important changes occurred: a strategic shift from urban-based to rural-based and from curative to preventive health services, adoption of primary health care as a strategy to ensure health for all, development of a grassroots and mid-level health workforce to address shortages, and expansion of postgraduate medical education to build up a critical mass of professionals specialized in different disciplines. However, policy implementation has a mixed track record. Some of the policy commitments have been implemented while some have been partially implemented or neglected. For example, despite policy promises for offering a special package of incentives for doctors serving in the rural areas, no such package has yet been offered in practice due mainly to bureaucratic reluctance.

7.2 Financial protection and equity in financing

7.2.1 Financial protection

While theoretically there is universal coverage (all Bangladeshi citizens have the right to receive health care according to need), the increasingly high OOP (from 57% in 1997 to 64% in 2007) is largely the result of limitations on availability of services (height) due to low investment in staff, equipment and medicines in the public sector, and consequent use of the private sector, coupled with limitations on depth (some user charges, especially purchase of medicines on supplies not available in public sector facilities). The high levels of OOP payment combined with informal payments for health services in public sector facilities are impoverishing millions of households annually and is the most regressive method of health financing.

The current heavy reliance on OOP – accounting for 64% of THE, with two thirds of OOP being spent on medicines (HEU, 2010) –the high incidence of catastrophic payment and impoverishment due to OOP (Van Doorslaer, O'Donnell et al., 2007), are the major challenges that need to be addressed in order to ensure financial risk protection (Rannan-Eliya RP et al., 2012).

The incidence of catastrophic payment in Bangladesh is the highest in the Asia Pacific region, as is the burden of OOP on households. About 5% incur catastrophic OOP payments, using the threshold of 25% of monthly household consumption expenditure. Using the threshold of 25% of household non-food expenditure, about 15% of households incur catastrophic health expenditure (Van Doorslaer, O'Donnell et al., 2007). A more recent estimate found that 7% of households spend more than 25% of their monthly non-food expenditure on health care as OOP (Rannan-Eliya RP et al., 2012). The same study estimated that in a given month, the proportion of population falling below the international $1 poverty line due to OOP on health care decreased from 4% in 2000 to 3.1% in 2005 and 0.7% in 2010. Besides catastrophic expenditure, illness shocks have troubling economic consequences such as lost earnings (Van Doorslaer, O'Donnell et al., 2007).

The better-off section of the population spend more on health care (O'Donnell, Van Doorslaer et al., 2008). The richest 40% spend 60% of OOP. These findings imply that the richest could pay for the required medical care, while the poorest were not able to do so and often forego needed health care (Rannan-Eliya RP et al., 2012).

Current policies largely focus on providing protection for identified high-risk groups such as the pilots in the use of vouchers for delivery care, exemptions from payment for the poor, and requirements for provision of free care to the poor for private sector hospitals. These are likely to have limited impact on the high OOP, and could be subject to abuse or poor targeting.

7.2.2 Equity in financing

Financing of health expenditure is mainly tax-based, besides contributions from development partners. As noted in Section 3.3.2, the current tax system is progressive, with the highest burden for the richest quintile. However, the high reliance on OOP is very regressive, with a relatively higher contribution by the poor than the rich, and this leads to catastrophic expenditure resulting in poverty.

Reduction of OOP and protection of the poor from catastrophic expenditure will require some form of prepayment and pooled resources. The concept of health insurance is still in a nascent stage in Bangladesh, with some pilots of community health insurance by NGOs, contributions from public sector employees, and contributory schemes for formal private sector employees.

Introduction of a broader "prepayment" national insurance scheme faces a number of issues including identifying adequate fiscal space, appropriate payment mechanisms that limit overuse and supplier induced demand, regulation of use of pharmaceuticals, and community acceptance and willingness to contribute to an insurance scheme.

Equity in OOP

While the richest 40% spend 60% of OOP O'Donnell, Van Doorslaer et al. (2008) also found inpatient hospital care to be pro-wealthy for both public and private sectors. Overall hospital outpatient services have small pro-wealthy bias although private sector outpatient care is slightly pro-poor. Non-hospital care is also slightly pro-poor (O'Donnell, Van Doorslaer et al., 2008). The richest quintile receives more than 30% of the total subsidy (O'Donnell, Van Doorslaer et al., 2008). Use of traditional providers was higher among the poor (6–8%) and was even higher in the case of children (Rannan-Eliya RP et al., 2012). Drug outlets are the dominant heath provider (MOHFW, 2010).The overall utilization of health care had been inequitable in all three rounds (2000, 2005, 2010) of the Household Income and Expenditure Survey. These

findings suggest that the poor rely on unqualified, low-quality private sector providers (O'Donnell, Van Doorslaer et al., 2008).

The equity divide in health financing and access to needed health services is major challenge to universal health coverage achievement. Its heavy reliance on OOP accounting for 64% of THE, two thirds of OOP being spent on medicines, high incidence of catastrophic payments and impoverishment due to OOP are the major challenges that need to be addressed in order to ensure financial risk protection. Besides health financing and financial risk protection issues, Bangladesh also faces challenges related to access. Access barriers such as lack of information or awareness, cost, distance and quality are well documented by various studies. In order to achieve universal health care, Bangladesh must tackle both sets of challenges.

7.3 User experience and equity of access to health care

7.3.1 User experience

People's perception of public sector health services in Bangladesh is not good (Cockcroft, Andersson et al., 2007). Besides their main complaint about the non-responsiveness of the health systems and health-care providers, complaints of long waiting times, absenteeism and misbehaviour of the providers, exclusion of marginalized groups (e.g. destitute, eunuchs), lack of privacy, and lack of explanation of health issues and management to the clients are frequently made. The daily newspapers frequently report malpractice by doctors and dissatisfaction with respect to the quality of services.

In a study exploring the other side of the story, health-care providers unanimously mentioned lack of infrastructure (physical and human) and supplies as the sole reason behind poor attitudes toward clients and poor services delivered (Cockcroft, Milne et al., 2011).The doctors in addition mentioned unfair treatment by an administration which fails to recognize good work and reward it through incentives such as promotion.

7.3.2 Equity of access to health care

Access to care is constrained by lack of awareness about the availability of the services; financial (e.g. user fees), geographic (e.g. distance to the facility), and socio-cultural barriers (e.g. gender); and also negative perceptions regarding quality of the care provided.

Access to primary care is less constrained by geographic barriers, with public sector services well distributed. However, perceptions of low quality and frequent absenteeism lead many to use informal private sector providers such as "village doctors" or to directly purchase from pharmacies.

Higher-level care and diagnostic facilities are concentrated in urban areas, especially the capital city Dhaka. Difficulties in attracting and retaining some categories of staff (specialist doctors, nurses) limit the provision of facility care in some areas (e.g.the north-east is not as well catered for as the south-west) (DGHS, 2013). Access also demonstrates disparities by SES quintile, with higher access/use of services for higher quintiles for most key services (delivery by skilled attendant, facility delivery). Policies addressing disparities in distribution of health workforce have been poorly applied (e.g. incentives are not yet agreed), and posting systems and regulations have largely evaded reform.

7.4 Health outcomes, health service outcomes and quality of care

7.4.1 Population health outcomes

Bangladesh has achieved substantial gains in the field of health since independence in 1971. As documented in Section 1.4, life expectancy has increased from 45 to 68 years (1971–2011) and the total fertility rate decreased from 6.3 to 2.3 (1975–2011), the maternal mortality ratio decreased from 322 to 194 per 100 000 live births (2001–2010) and the infant mortality rate fell from 87 to 43 per 1000 live births (1994–2011).

However, most of these improvements have occurred in relation to communicable and maternal and child health conditions, with overall little reduction in mortality and morbidity from NCDs, and increases in mortality rates from CVD and some cancers (see Section 1.4).

The recent Lancet series explored the paradox of improvement in population health outcomes, alongside a poorly performing health system. The papers identified improvements in SES determinants (education, poverty reduction, food supply), effective delivery of vertical programme interventions (ORS, immunization, family planning) and use of NGOs to obtain community mobilization, as key factors (Chowdhury, Bhuiya et al., 2013).

Key indicators of access and utilization of public health programmes demonstrate increases over the last decade, which are likely to have contributed significantly to the falls in mortality and increases in life expectancy. Examples include:

- The percentage of pregnant women receiving four antenatal visits increased from 17% to 26%, delivery attended by medically trained provider increased from 16% to 32% and postnatal care by a medically trained provider within 48 hours of delivery increased from 16% to 27% (NIPORT, Measure Evaluation et al., 2012).
- The percentage of fully immunized children under one year of age increased from <60% in 2000 to 80%+ in 2011. Similarly, exclusive breastfeeding also increased steadily, from 46% in 1993–1994 to 64% in 2011 among infants under six months as a result of the intensive Infant and Young Child Feeding campaign in recent years.
- The percentage of children under five receiving ORS for episodes of diarrhoea increased from 58% in 1993–1994, to 81% in 2007–2011. The proportion of children with symptoms of acute respiratory infection who were taken to a health facility or trained provider reached 35% in the period 2006–2010 (NIPORT, Mitra Associates et al., 2011).
- Detection of cases of TB increased from 21% of estimated cases in 1994 to 73% in 2007, with treatment success rates for new smear positive cases rising from 73% in 1994 to 92% in 2007 under the DOTS programme.

7.4.2 Health service outcomes and quality of care

However, much less is known of the outcomes and quality of care provided for chronic and noncommunicable diseases. As noted in Chapter 1, NCDs are responsible for half of annual mortality (Bleich, Koehlmoos et al., 2011) and account for 61% of the disease burden in terms of disability adjusted life years loss (World Bank, 2011).

A nationwide survey on mental health reported that around 16.1% of the adult population suffers from some sort of mental illness (Firoz, Karim et al., 2006). The level of awareness of and medical care sought for mental illnesses is very low. Much stigma is attached to mental illnesses. Thus, morbidity from psychiatric illnesses remains an under-recognized public health problem in Bangladesh. The Government acknowledges mental illness as an issue in need of attention, yet the scope and scale of interventions is very limited. Services are provided by both the public and private sector, but they are limited to the urban areas. In Bangladesh,

mental health service provision is limited to psychiatry only. There is dearth of counselling services.

Evidence also exists on the poor quality of care by the informal providers. The informal sector providers' main routes of entry into the profession are apprenticeship and inheritance and/or a short training of a few weeks to a few months' duration from semi-formal, unregulated private institutions. As such, their professional knowledge base is not at a level necessary for providing basic curative services with minimum acceptable quality of care (Ahmed and Hossain, 2007, Ahmed, Hossain et al., 2009). However, CHWs trained by formal government institutions or NGOs were found to be better than other informal allopathic providers (e.g. village doctors and salespeople at drug retail outlets) in providing some specific services such as DOTS and treatment for child acute respiratory infections, including rational use of drugs (Ahmed and Hossain, 2007; Chowdhury, Hossain et al., 2009). Their services have also been found to be cost-effective (Islam, Wakai et al., 2002).

The regulations relating to registration and control of private medical care providers are often not enforced effectively, leading to the uneven quality of service and inappropriate physical facilities. Apart from BMDC registration requirements, there is little assessment of the quality of physician care in Bangladesh, whether in the public or private sector. Findings from a few small-scale studies indicate that there is significant room to improve the technical quality of care provided (Arifeen, Bryce et al., 2005; Chowdhury, Hossain et al., 2009;Hasan, 2012).

Like BMDC, the Bangladesh Nursing Council regulates the activities of nursing professionals. Interestingly, studies show that nurses in Bangladesh spend only a tiny fraction of their duty times on patient care, sometime as low as 5% in government hospitals (Hadley and Roques, 2007; Zaman S, 2009). The main reasons behind this are stigmatization and low status of the profession, the nursing activities being in direct conflict with societal norms in areas such as "night duty, contact with strangers, and involvement in dirty work". The situation is a little better in the private and NGO sectors.

On the other hand, poor quality of services is another important reason for not achieving universal health coverage in Bangladesh. Poor quality service is strongly associated with low utilization of services, especially by the poor. Major problems affecting utilization are lack of sufficient drugs, staff shortages (especially in remote facilities), poor prioritization

of spending, and pervasive problems of management and coordination. All these are the indicative of poor governance. Improving the quality of service will require significant reform to increase the health budget, ensuring the provision of drugs, decentralizing health services for faster service, reducing fragmentation and increasing accountability to users.

Increased delegation of management and financial responsibility to upazila level will help improve the quality of services to a large extent. Establishment of an Upazila Health System of preventive and curative health services, including specific disease control programmes, accountable to the Upazila Health Management Committee would help foster quality service at the local level. Introduction of Upazila Health Systems would require increased investment as well as true delegation of authority at the upazila level.

7.4.3 Equity of Outcomes

Though there have been commendable gains in health outcomes recently, gross inequity remains. For example, differential levels of early childhood mortality were observed according to socioeconomic status (NIPORT, Mitra Associates et al., 2011). Neonatal mortality, infant mortality and under-five mortality in the highest wealth quintile households (23, 29, 37 respectively per 1000 live births) were much less than among the lowest wealth quintile households (34, 50, 64 respectively per 1000 live births). Similarly, vaccination coverage (BCG, measles and three doses each of DPT and Polio) among children from highest quintile households was 93% compared to 77% among lowest quintile households.

The same trend of SES differentials was observed in case of child nutritional status (NIPORT, Mitra Associates et al., 2011). Children of lowest quintile households were proportionately more stunted (54% compared to 26% for highest wealth quintile households), underweight (50% compared to 21% for highest quintile households) and wasted (17% compared to 12% for highest quintile households).

Fifty one percent and 64% of the pregnant women from highest wealth quintile households were assisted during delivery by a qualified doctor and a medically trained provider respectively, compared to only 5% and 11% respectively in the case of lowest wealth quintile households(Bangladesh Demographic and Health Survey, 2011). Only 10% of pregnant women from lowest wealth quintile households were delivered in a health facility compared to 60% for the other group

of women. The percentage of C-section delivery was 3% and 41% respectively for the lowest and highest wealth quintile households.

7.5 Health system efficiency

7.5.1 Allocative efficiency

Public sector hospitals are financed from revenue and development budget. Resources are allocated based upon a fixed number of beds and not disease burden, size of the population, or community need. Historically, public sector allocation of resources has been biased to the secondary and tertiary facilities, at the expense of primary health-care facilities. As such, PHC-level facilities received disproportionately low allocations compared to the secondary and tertiary hospitals. Recently, with the introduction of SWAps, some reversal in this trend has begun. Evidence shows that it has been successful in expanding funding for primary health-care services through the Essential Services Package and allocating these resources to subdistrict level and below, which are used by the rural poor (Ensor, Dave-Sen et al., 2002)

7.5.2 Technical efficiency

Due to various gaps in physical infrastructure and human resources, people's perception of the services provided at public sector health facilities is poor and as such, they mostly resort to unqualified informal providers (Cockcroft, Andersson et al., 2007). According to the providers, lack of supplies and inadequate infrastructure is one of the major causes of inefficient services provided by these facilities (Cockcroft, Milne et al. 2011).

Though the NDP of 1982 has revolutionized the pharmaceutical sector and made Bangladesh self-sufficient in essential medicines, good manufacturing practice is not followed by all pharmaceutical companies. Incomplete regulation by DGDA means the market is flooded with expired, counterfeit and low-quality drugs. Health-care providers do not prescribe drugs in brand names and are prey to the aggressive marketing policies of the pharmaceutical companies.

Besides shortages, the health system is affected by a poor skill mix. Instead of the ideal WHO recommended ratio of 1:3:5 (doctors: nurses: technologists), it has currently a ratio of doctors to nurses to technologists of 1:0.4:0.24. According to the WHO standard, Bangladesh has a staggering shortage of over 90 000 doctors, 273 000 nurses and

455 000 technologists. There is no probability of reversing the current ratio in favour of nurses and technologists under current strategies for the foreseeable future.

7.6 Transparency and accountability

None of the mechanisms, in effect, has proved to be efficient in ensuring accountability. In fact, the existing structure and management of health organization does not facilitate health system accountability. This has been reflected in the high absenteeism of doctors in rural areas, corruption, poor service quality, and above all, the poor performance of service providers. Weak accountability is the outcome of some prevalent aspects of management: an inaccurate job description, performance-evaluation based on subjective criteria, a nonfunctioning system of reward and punishment and weak monitoring systems. Among health service providers from medical doctors to health workers, none has well-defined chain of accountability (Hossain and Osman, 2007). Ineffective accountability causing high absenteeism among doctors in rural areas, a supply side barrier, is evident in recent studies (Chaudhury and Hammer, 2003; FMRP 2003) and represents a major challenge for service provision.

There exists no meaningful system for monitoring the activities of doctors, nurses and staff of the health facilities. Lack of accountability and monitoring facilitate increased corruption and the suffering of those accessing care. A household study conducted by Transparency International Bangladesh (TIB) in 2007 reveals that 44.1% of the households seeking health care were somehow victimized by corruption (TIB, 2010). Corruption mostly takes the form of informal payments (bribes) for outpatient tickets, purchasing the admission form for inpatient service and the external sale of medicines that are the property of public hospitals. All of these are demonstrative of non-transparent and unaccountable health sector governance.

The Ministry of Health and Family Welfare oversees overall planning as well as implementation functions, with deconcentration of some power to the local level. Various bodies regulate the services and their standards, but true regulatory power lies with the Ministry, which severely undercuts the quality of health governance. Various structural and financial limitations of the regulatory institutions have intensified this weakness further. The accountability of providers, on the other hand, remains very poor, as noted with the high absenteeism of doctors in rural areas, corruption and poor service quality.

8 Conclusions

8.1 Key findings

Bangladesh has made enormous progress in health in recent years, surpassing its neighbors in raising life expectancy, and reducing fertility and the mortality of mothers and infants. But maternal and neonatal mortality is still quite high, there are emerging and re-emerging infectious diseases (e.g., dengue, swine and bird flu), mass arsenicosis is a lingering concern, an emerging burden of NCDs, an epidemic of road accidents, miserable health and sanitation conditions in the urban slums, and fallouts from the effect of climate change on health. Through the sixth Five Year Plan, the country implemented all health reforms with a very low national health budget and the health status of the nation remained generally poor despite various donor-supported vertical programmes. A number of factors played important roles in hindering expected improvement in the overall health status of the country.

- the complexity of the mixed health systems and poor governance;
- inadequacy of health resources and impact on quality of care;
- inadequate and uneven health service coverage;
- health-care financing through catastrophic OOPP by households; and
- inequitable access to health services hindering universal health coverage

8.2 The complexity of the mixed health systems and poor governance

The health system of Bangladesh is organized through multiple actors performing diverse roles and functions through a mixed system of medical practices. There are four key actors: Government, private sector, NGOs and donor agencies. The Ministry of Health and Family Welfare provides services through different executing and regulatory authorities primarily in rural areas, and health services in urban areas are delivered through Ministry of Local Government, Rural Development and Cooperatives in partnership with NGOs and the private sector without the oversight of the Ministry of Health and Family Welfare. Thus the Ministry

has been empowered to act as the central body for regulating a wide range of health agencies, including medical professions and institutions, and it has no authority to regulate services delivered by the private sector, leading to domination by that sector in urban areas.

The existing structure and management of health organizations fails to make the health system accountable to its stakeholders, leading to high absenteeism rates among doctors, corruption, poor service quality, poor performance of service providers, inaccurate job descriptions, absence of a well-defined chain of accountability and other challenges for the health sector. Despite nontransparent and unaccountable health sector governance, Bangladesh has achieved MDG 4 by reducing child death ahead of the 2015 target, and rapidly improving in other indicators including maternal death, immunization coverage, and survival from infectious diseases including malaria and tuberculosis, and diarrhoea. However, these outcomes have been achieved by overall improvements in SES determinants (education, poverty reduction, food supply), and effective delivery of vertical programme interventions through NGOs. Therefore, the Ministry of Health and Family Welfare would need to improve its coordination with other ministries and NGOs that are directly and indirectly involved with health services to maintain these successes.

8.3 Inadequacy of health resources and impact on quality of care

Bangladesh has an extensive health infrastructure in the public and private sectors, but is not equipped with adequate human and other resources such as drugs, instruments and supplies. Despite a very fast-growing private sector, the number of existing hospital beds is not adequate to meet current demand. There is a critical shortage of trained health providers and an inappropriate skill mix, thus the country remains at a ratio of doctors to nurses much lower than the WHO recommended ratio of 1:3:5. The trained medical doctors are being rapidly absorbed by the private sector, albeit there is less than one doctor per 3000 population and a constant rate of 20% vacancies among public sector health service posts, suggesting an alarming shortage of doctors to provide adequate services.

It is also alarming that due to a critical shortage of qualified health-care providers and the costs of medical care, a large proportion of poor patients seek treatment from informal providers who are mostly untrained. Since the informal providers are not a part of the mainstream

health system, their quality is not monitored and thus the overall situation forces the poor to compromise on quality of health care. On the top of the human resource crisis, the unavailability of basic medical and diagnostic facilities in public hospitals, such as clocks, height scales, thermometers and blood pressure measuring cuffs indicate the poor capacity of the public sector to offer minimum health services. Mobilizing the private sector to produce more health workers and bring informal health-care providers within the mainstream health systems may facilitate reducing the gap in human resources more quickly. There is an urgent need for more investment of public funds and stronger local accountability to improve the quality of public services, as well as improved regulation and monitoring of services provided by the private sector.

8.4 Inadequate and disproportionate health service coverage

The Government provides comprehensive health services delivered by both the public and the non-public sectors through the Ministry of Health and Family Welfare and the Ministry of Local Government, Rural Development and Cooperatives. There are well-functioning disease surveillance and notification systems for early detection and control of priority communicable diseases. A number of vertical programmes have been implemented successfully and made a positive impact on health, particularly child survival. The role of NGOs in social mobilization for behavioural change through extensive mass promotion services has supplemented the inadequacy of human resources in public sector. However, some of the successful programmes could not derive optimal benefit for the target population, such as control of child death from pneumonia or neonatal sepsis, undernutrition of children under five and spread of MDR-TB. More importantly, the double burden of disease that the country has faced due to the health transition has not been addressed by the service delivery system. The Government has made little investment in the fight against NCDs. Very few specialized facilities, mostly located in the capital city, meet the service demand of NCDs and none of the public facilities have trained staff or the drugs necessary to treat NCDs at district and subdistrict health facilities.

Due to lack of linkages and coordination across ministries delivering health services, vertical programmes and specialized services adopted by the Ministry of Health and Family Welfare do not necessarily get translated to urban health systems. Further, the inability of the formal sector to provide essential health services has resulted in a widespread

increase in informal providers as an alternative source of care in both urban and rural areas, particularly for the poor. In order to improve health service delivery, the coordination between the two ministries needs to be strengthened and public health programmes should be revisited to effectively address the challenges based on emerging trends. Regulation of informal providers for service quality and establishing a well-structured referral system between outpatient and tertiary health facilities may reduce the dependence of the patients on convenient services offered by informal providers. The current health system is not prepared to address emerging health issues such as population ageing and NCDs, emerging and re-emerging infectious diseases, poor maternal and child nutrition, injuries related to road traffic accidents, drowning, violence, occupational health, mental health, palliative care, or long-term health-care services for elderly population. Further investment in NCD services and other emerging health issues should be incorporated into health service delivery by both the Ministry of Health and Family Welfare and the Ministry of Local Government, Rural Development and Cooperatives in order to expanding service coverage across all segments of the population.

8.5 Health-care financing through catastrophic OOPP by households

Health services in Bangladesh are predominantly financed by households' out-of-pocket payments comprising 64% of THE. Incidence of catastrophic payment in Bangladesh is the highest in the Asia Pacific region. Currently Bangladesh spends US$ 26.60 per capita and the pace of growth is faster than per capita GDP, suggesting that people are bound to spend more on health than domestic products. The bulk of this health spending goes to qualified medical providers as direct payment, and a smaller proportion to alternate medical practitioners, being spent mostly on medicines. The high levels of OOP payment combined with informal payments for health services at public sector facilities are impoverishing millions of households annually. Financial risk protection remains a major challenge.

Although public expenditure on medicines and medical goods increased significantly, patients need to purchase medicines prescribed by providers at public facilities, even though they are supposed to be supplied free of cost. While public spending on public health and prevention has almost doubled in absolute terms, the share of spending on hospital care for inpatient and outpatient care remains very low, and the health sector budget has been further reduced from 7% to less than 5% of the total

government budget in 2013, despite a fast-growing population and the emergence of new health issues. It is a paradox that despite a low total health expenditure, Bangladesh has obtained good value for health compared to other countries in the region, taking the maternal and child mortality outcome indicator as a yardstick. Clearly, Government savings on health spending can be attributed to the greater contribution of households to health spending, leading to more catastrophic OOPPs by households and poverty. Finding an affordable health financing strategy for the poor in the near future is imperative for sustaining the success of the Government in the health sector.

8.6 Inequitable access to health services hindering universal health coverage

The National Health Policy mandates strengthening primary health and emergency care for all people and a number of reforms for extending services targeting the poor are in place. As such, the current reform has supported establishing one community clinic for every 6000 people in rural areas, facilitating access to care as well as treatment at no cost irrespective of the socioeconomic status of a household. Meanwhile, in the urban areas, non-state providers have been contracted to deliver primary health care at the lowest administrative urban units limited to the city corporation and municipality areas. They charge fees for services, although with provision of free services for the poor certified by the contracting agency. This leads to inequity in service provision and payment mechanisms between urban and rural areas.

Most of the primary health facilities provide basic health care and thus do not have the capacity to support inpatient care or emergency medical care. Although there is no well-structured referral system in place, there is a triage approach in rural health set up by establishing primary health care at the lowest administrative unit, and secondary and tertiary care at the subdistrict and district level respectively. However, there is only one secondary facility per subdistrict and one tertiary facility per district for 70% of the population living in rural areas, and no specialized public or private institution. On the other hand, all significant public and private institutions, including most medical colleges, hospitals, clinics, laboratories, drug stores, are established in the capital city or at the division level and thus the rural population are inherently deprived of specialist services in general. Even within urban areas there is a disproportionate population–bed ratio, with the lowest ratio in the capital city given a higher population density than other cities.

Although the NGO sector has contributed significantly to promotive, curative and preventive health services in Bangladesh, most of the NGO-based health service institutions are located in urban areas, and rural people mostly depend on unqualified informal providers. However, in the absence of a prescription policy, households end up spending much more at drug outlets due to overprescribing, multidrug prescribing and prescribing of expensive drugs by these unregulated and untrained informal providers mostly in the rural areas due to limited options and availability. Such disparity in the distribution of health service facilities and access to qualified providers has created geographic inequity in access to quality care and prevents the majority of the population from the benefits of health services.

There is also inequity in the budgetary allocation for health. The health ministry has the lowest sanction of all ministries historically and the local bodies do not play any formal role in determining the supplies, thus ultimate allocative decisions are made centrally on the basis of the previous year's actual expenditure, availability of resources and the policy focus of the government, with no reflection of health demand at the local level. With an unrealistic heath budget and inadequate allocation in every sector under a very low Government health budget, households are forced to pay substantially from their own budgets – and of course the poor pay a larger proportion of their income than the rich.

8.7 Remaining challenges

However, despite all challenges discussed above, the Ministry of Health and Family Welfare will need to tackle more challenges and adopt timely appropriate strategies in order to sustain its hard-earned success. The first challenge will be to establish strong coordination for developing long-term self-sustaining health plans with increasing focus on primary health care and prevention strategies for both acute and long-term care. It will require supraministerial decision-making to establish linkages between urban health services and the health ministry, referral systems, deployment of adequately-qualified providers, and a unified and affordable financing mechanism for health services in order to reduce high OOP payments. It will be also important to evaluate some of the current vertical programmes that demonstrate few positive health outcomes such as HIV/AIDS, mental health and urban primary health-care, in order to strengthen the health system.

The health system has been facing enormous challenges in catering to the health needs of more than 150 million people and this challenge will be even greater in future, with the country on the verge of rapid population growth, particularly due to faster growth in urban areas and slow progress in implementing current strategies for achieving universal health coverage. Rapid capacity building to promote prevention, particularly to halt the epidemic of NCDs will be essential, but poses a great challenge for the health system. Since the majority of people depend on informal sector providers, deployment of the large health cadre following regulation and improving the quality of care, may help reduce the gap of trained community based health work force, such as Community Health-care providers who have been assigned to community clinics. However, it will require the Ministry of Health and Family Welfare to bring informal sector providers under the mainstream health systems and monitor their services under a national policy, which will need strong political will and support from the recognized health-care authorities in the country. Bangladesh needs a realistic plan for an affordable payment mechanism for health in order to reduce catastrophic out-of-pocket payments for health and to develop parallel strategies for investing more in health.

It is an impressive move that the Health-care Financing Strategy (2012–2032) has been developed to provide direction in achieving universal health coverage. The current strategy puts emphasis on prepayment mechanisms with scope of risk-pooling and different mechanisms are suggested for people in different economic sectors, be it the formal or informal sector, or people in poverty. Mechanisms include taxes, social health insurance contributions and community-based health insurance schemes. However, the concept of health insurance is still in a nascent stage in Bangladesh and prepayment for health will not be a popular idea unless irregularities in the payment mechanisms are minimized and access to quality health care is optimized for best value for money. Further challenges that will remain for the Government include: the equitable expansion of basic health services across all socioeconomic and geographic boundaries as a prerequisite of establishing the new strategy, and bringing adult wage earners, particularly the wealthy, into the programme to widen the financial protection of the poor.

8.8 Future prospects

Bangladesh has set an extraordinary example of gaining good health at very low cost and has been projected as a role model for other developing countries in the region. While gains in health have been fully credited to the Ministry of Health and Family Welfare, it is the progress of other ministries relevant to public health that has catalyzed the success of overall health agenda of the Government. It is a paradox that despite an accountability vacuum regarding health and little coordination by the Ministry of Health and Family Welfare with other sectors, a number of vertical health programmes, particularly in preventive care, such as immunization, control of diarrhoea, tuberculosis, and other emerging infectious diseases, have been sustained over a long period and brought positive health outcomes. Mobilizing the huge informal health cadres outside the official allopathic system would be a useful strategy for strengthening human resources in health, especially in the remote and hard-to-reach areas of the country, and achieving universal health coverage.

Bangladesh has successfully applied IT to its information and management systems to ensure they are easily accessible for performance assessment of specific programmes at least up to subdistrict level. Internet access has been established up to union-level facilities and the community clinics will soon be included in the HIS net for the generation of various databases aiding management decision-making. Under e-Health, all the UHCs and district hospitals have mobile phone-based services for providing necessary medical advice free of charge. Telemedicine service is now available in eight hospitals through high-quality video-conferencing devices and this has expanded to several thousands of community clinics. This expands the opportunity for providing medical consultation to rural areas where there is no access to specialist doctors. The pilot project MOVE-IT has opened the prospect of building a unified electronic information system to register all vital statistics and improve coverage of priority maternal and child health services.

The Urban Primary Health-care Service Delivery Programme has set another promising fee-based model. Although the service is hosted by a non-health ministry and coverage remain slow, this model demonstrates a positive transition in patient behaviour from free health care to fee-for-services. This is also a successful model that has demonstrated that non-state providers engaged in supporting public health services

under and private heath sector can be brought under regulation of the Government. Further evaluation of the UPHCSDP to tease out weaknesses would help in identifying a strategy to strengthen primary health care in both urban and rural areas for gradually reducing Bangladesh's dependence on donors for primary health care by generating revenue in health. Further exploration of scope for linking the UPHCSDP model to community-based health insurance maybe an innovative approach for reducing catastrophic out-of-pocket payments and establishing a sustainable health-care delivery system. Overall, the Bangladesh health system is at a crossroad and investment in health would contribute to the improvement of the health of the population and fulfil the Government mission to achieve universal health coverage within the foreseeable future.

9 Appendices

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9.2 Further reading

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9.3 Useful websites

Ministry of Health and Family Welfare Government of the People's Republic of Bangladesh

http://www.mohfw.gov.bd/

9.4 HiT 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.WHO.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:

- 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.

9.5 About the authors

Syed Masud Ahmed is the Director of the Centre of Excellence for Universal Health Coverage (www.coe-uhc.org), a joint venture of Centre of Equity and Health System, icddr,b and James P. Grant School of Public Health at BRAC University. He has also been a Professor at the School since 2011. Before joining current position in July 2013, he was the Senior Research Coordinator at the Research and Evaluation Division of BRAC in Bangladesh. He was a visiting fellow (David E. Bell Fellow) in Population and International Health at Harvard Center for Population and Development Studies during 1997. Dr Ahmed was awarded a Ph D from Karolinska Institutet University, Sweden in 2005. His research

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She was one of the authors who had designed the UN-MNH (maternal health programme), which is now being implemented in Bangladesh jointly by the three UN agencies. She was also involved with the design of two consecutive health sector programmes (HNPSP and HPNSDP). She supported the finalization of the Joint-UN Maternal and Neonatal Health Program (Saving the Lives of the Mothers and Newborn) in the Philippines. Her areas of expertise include health systems strengthening, maternal and neonatal health, HIV&AIDS and policy and strategy formulation for the health sector.

Iqbal Anwar is a maternal health and health systems expert. Currently he is working as a scientist at icddr,b. Before joining icddr,b in 2001, he worked with the Ministry of Health and Family Welfare at different tiers of the national health system as service provider, 1st line manager, human resource development officer, EIS medical officer and operations research expert. Dr Anwar is now involved in a number of research protocols in the field of maternal, neonatal and child health with

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Tahmina Begum is a health and development economist with 19 years of professional experience. She graduated from the Department of Economics at the University of Dhaka and obtained M. Sc. in Economics of Education from the Institute of Education (IOE), University of London UK. Currently she is an independent consultant of World Bank, GIZ, and Health Economics Unit (HEU) of the Ministry of Health and Family Welfare. Ms Begum was involved in a number of HEU research that include dual job holding of doctors, unofficial fees, costing of public health facilities, private sector health facilities, public and OOP spending on MNCH, resource allocation formula and others. She led a number of public expenditure reviews of the health sector conducted by HEU and published extensively in peer reviewed journals.

Rumana Huque joined University of Dhaka in 2000 as a lecturer. Currently, she is employed as an Associate Professor in Department of Economics, University of Dhaka. She teaches Health Economics. She completed BSS (Honours) and MSS in Economics from the University of Dhaka, Bangladesh, an MA in Health Management, Planning and Policy from University of Leeds, UK in 2002, and earned a Ph D from the University of Leeds in 2010. She specializes in health systems and health economics with a special focus on health-care financing, resource allocation and budgeting, and economic evaluation.

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Kuhel Islam completed Masters in Public Health (MPH) from James P. Grant School of Public Health, BRAC University. He earned his Bachelor's degree, Biology majoring in Molecular Genetics from University of Victoria, British Columbia, Canada. He then moved to Saudi Arabia to take up the position of a Junior Researcher in the Department of Comparative Medicine at King Faisal Specialist Hospital and Research Center, Riyadh. He was involved in a project for molecular typing and gene extraction of the mycobacterium tuberculosis. He later joined as a Microbiologist and Laboratory Coordinator at the International Organization for Migration in Dhaka. He worked in a Ministry of Health, UK project for TB screening of applicants going to UK for long-term stays. He was trained in Thailand in laboratory sputum culture procedure and in lab data management systems.

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The Asia Pacific Observatory on Health Systems and Policies (the APO) is a collaborative partnership of interested governments, international agencies, foundations, and researchers that promotes evidence-informed health system policy regionally and in all countries in the Asia Pacific region. The APO collaboratively identifies priority health system issues across the Asia Pacific region; develops and synthesizes relevant research to support and inform countries' evidence-based policy development; and builds country and regional health systems research and evidence-informed policy capacity.

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