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 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

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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 Apollo 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>
<thead>
<tr>
<th>Percent of health facilities reporting the items by facility-type</th>
<th>Year 2011</th>
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<tbody>
<tr>
<td></td>
<td>DHs</td>
</tr>
<tr>
<td>Has ambulance</td>
<td>100%</td>
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<tr>
<td>Ambulance functional</td>
<td>97.5%</td>
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<tr>
<td>Lack of funding restricts the use of ambulance</td>
<td>47.5%</td>
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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).