TUBERCULOSIS MALARIA AND HIV/AIDS EXPENDITURE IN BANGLADESH 2015

Health Economics Unit (HEU)

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Acronyms

BBS	Bangladesh Bureau of Statistics
BNHA	Bangladesh National Health Accounts
BRAC	Bangladesh Rural Advancement Committee (now Building Resources Across Communities)
CHE	Current Health Expenditure
CGA	Controller General of Accounts
DH	District Hospital
FES	Facility Efficiency Study
FES 2011	Facility Efficiency Survey 2011
FP	Family Planning
FS	Revenues of Financing Schemes
GFATM	The Global Fund to Fight AIDS, Tuberculosis and Malaria
GH	General Hospital
GOB	Government of Bangladesh
IMS	Intercontinental Marketing Survey
ICD	International Classification of Diseases
icddr, b	International Center for Diarrhoeal Disease Research, Bangladesh
ICHA	International Classification for Health Accounts
ICPC-2	International Classification of Primary Care, Second Edition
MCH	Medical College Hospital
MCWC	Maternal and Child Welfare Center
MOHFW	Ministry of Health and Family Welfare
NGO	Non-Governmental Organization
NHA	National Health Accounts
OOP	Out of Pocket (OOP)
OP	Outpatient
SHA	System of Health Accounts
TB	Tuberculosis
THE	Total Health Expenditure
UHC	Upazila Health Complex
USAID	United States Agency for International Development
WHO	World Health Organization

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TUBERCULOSIS, MALARIA AND HIV/AIDS EXPENDITURE IN BANGLADESH 2015

1. Introduction

1.1 The Health Economics Unit and Global Fund

The Ministry of Health and Family Welfare (MOHFW) of the Government of Bangladesh (GoB) is mandated to ensure Universal Health Coverage through the development and efficient functioning of the health system of the country. The Health Economics Unit (HEU) under MOHFW is responsible for conducting policy-oriented research on Health Economics and Gender, NGO & Stakeholder Participation (GNSP) related issues. It assists the MOHFW in capacity building through training and workshops. It identifies, track and monitor the health financing of the country and conducts periodic National Health Accounts (NHA) of Bangladesh. HEU also work closely with health related national and international organizations and is a member of health networks supported by World Health Organization (WHO) and Organization for Economic Co-operation and Development (OECD).

The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) is a 21st century organization designed to accelerate the end of Tuberculosis, Malaria and HIV/AIDS as epidemics. With an annual outlay of nearly USD $4 billion, it is working in more than 140 countries, including Bangladesh. The Global Fund rely considerably on local institutions, communities and individuals in addressing issues relating to the said three diseases. National governments, civil societies, the private sector, and experts are partners of the Global Fund in meeting the challenges and offering innovative approaches. The GFATM assistance focuses mostly on combating HIV epidemics among key populations, to reduce the threat of Multi-Drug Resistance Tuberculosis (MDR-TB), and for malaria elimination efforts (source: The Global Fund 2016 Annual Financial Report theglobalfund.org/media/6388/corporate_2016annualfinancial_report_en.pdf).

The core objectives of the Global Fund 2017-2022 Strategy are to: (a) Maximize Impact Against HIV, TB and Malaria; (b) Build Resilient and Sustainable Systems for Health; (c) Promote and Protect Human Rights and Gender Equality; and (d) Mobilize Increased Resources. During 2003-2018, Global Fund has committed over half a billion dollars (USD 526 Million) with the objective of eliminating malaria from the country, diminish incidence of TB as well as HIV through improved screening and treatment, and awareness building. **Table 1** presents the funds committed and disbursed by the Global Fund to Bangladesh since 2003.

Table 1: The Global Fund Commitment and Disbursement of Funds, 2003-2018 (in Million USD)

Component	Signed	Committed	Disbursed
HIV/AIDS	140.0	128.5	121.1
Tuberculosis	363.6	302.2	256.3
Malaria	114.8	95.6	88.6
Total	618.4	526.4	466.2

Source: *The Global Fund Website:* theglobalfund.org/en/portfolio/country/?loc3c3b504b-ffc2-4d73-a75c-69f197d07256=BGD&k=

The Global Fund partnership with the government and other stakeholders has yielded quantifiable outcomes. Presently 1.3 million individuals are receiving anti-retroviral therapy support. Apart from this around 3.6 million laboratory-confirmed pulmonary TB cases were detected and treated (cumulative) (source: Global Fund/UNAIDS).

In 2015, the Global Fund (GFATM) disbursed around Taka 3.2 billion (**Table 2**) for eradication/control of Tuberculosis, Malaria and HIV/AIDS in Bangladesh. Government and NGOs were the recipient of this fund where government received Taka 1.2 billion and the rest 2.0 billion taka went to local and international NGOs. A consortium of local NGOs under the leadership of BRAC received around Taka 1.29 billion to carryout programs on Tuberculosis and Malaria. A closer look at the GFATM disbursement reveals that in 2010 around 61% of the fund (Taka 2 billion) was disbursed for Tuberculosis followed by HIV/AIDS 23% (Taka 0.7 billion). Two international NGOs, icddr, b and Save The Children were the main beneficiaries of the GFATM disbursement on HIV/AIDS. They received Taka 0.25 billion and Taka 0.43 billion respectively (**Table 2**).

Table 2: Funds Disbursed by the Global Fund for Bangladesh, 2015 (in Million BDT)

Disease	BRAC	GOB	icddr, b	Save the Children	Grand Total
HIV/AIDS		42	253	430	724
Malaria	264	263			527
Tuberculosis	1,021	899			1,920
Grand Total	**1,285**	**1,203**	**253**	**430**	**3,171**

Source: *Global Fund Website*, theglobalfund.org/en/downloads

The Health Economics Unit (HEU), under the Health Services Division (HSD) of Ministry of Health and Family Welfare (MOHFW) with support from the Global Fund commissioned a study on Development of National Estimates of Tuberculosis, Malaria and HIV/AIDS Expenditures, 2014-2015. This report highlights the findings of that study. It presents estimates of both public and private spending on the three diseases. It is opportunistic that the methodology and technique applied in the estimation procedure will enable tracking of outlays of priority diseases in the future. Accordingly, production of different types of disease expenditure estimates can become an integral part of NHA production activity.

1.2 National Health Accounts and Disease Specific Accounts

The Bangladesh National Health Accounts (BNHA) prepared by the HEU of HSD under MOHFW is an effort from the government to provide a detailed breakdown of annual healthcare expenditures, providing key information for making objective policy decisions.

National Health Accounts (NHA) is a tool which describes the expenditure flows – both public and private – within the health sector of a country. They describe in an integrated way the sources, uses and channels for all funds utilized in the whole health system. Over the past two decades, HEU has been instrumental in producing five rounds of National Health Accounts (BNHA). Following the guidelines of the internationally accepted Systems of Health Accounts (SHA) 2011, detailed health expenditure flows are reported for the years 1997 to 2015 period (HEU, 2018).

Producing disease specific sub-accounts is a useful extension and application of the NHA methodology in producing comprehensive expenditure by individual disease. Through United States Agency for International Cooperation (USAID)'s Health Finance and Governance Project (HFG), ABT Associates, USA, HEU supported two recent sub-accounts studies in Bangladesh: (i) Estimating Bangladesh Urban Healthcare Expenditure Under the System of Health Accounts (SHA) 2011 Framework, 2016; and (ii) Reproductive, Maternal, Newborn and Child Health (RMNCH) Expenditure Bangladesh, 2016. Ravi P. Rannan – Eliya, et al, 2012 examined the financial flows for maternal, neonatal, and child health (MNCH) services in Bangladesh.

The earlier Bangladesh sub-accounts studies warranted the need for a more rigorous approach to estimating the cost per disease based on a nationally representative up-to-date data set. Accordingly, a study was commissioned to conduct three independent but complementary data collection efforts. As a result Health Facility, Patient and Pharmaceutical drug sales surveys were conducted. The BNHA cell members of HEU as well as consultants working under this assignment received rigorous training in Sri Lanka from the Institute of Health Policy (IHP). They were trained on the tools and techniques of survey design, data collection, and data analysis for disease account estimation.

The burden of disease analysis has multiple merits. It enhances knowledge on the incidence/prevalence of diseases, demographic distribution, and their trends over time. The findings allow informed discourse and setting national control priorities. Subsequently, informed and objective resource allocation across the health sector can be achieved.

1.3 Status of Tuberculosis, Malaria and HIV/AIDS in Bangladesh

In Bangladesh, Tuberculosis, Malaria and HIV/AIDS are three diseases having disparate characteristics in their respective level of incidence in absolute figures as well as target population and geographical location. According to the World Health Organization (WHO), Bangladesh ranks among the world's 30 high-burden countries for TB. Malaria's geographical concentration is in 13 eastern and north-eastern districts (out of 64) and over 98% of total cases of the country are reported from these districts. In 2015, a total of 39,719 individuals were diagnosed with malaria. Bangladesh is a low HIV-prevalence country – less than 0.1 percent of the population is estimated to be HIV-positive (around new 600 new cases reported in 2015). Its prevalence is high among men who have sex with men, sex workers, people who inject drugs, transgender people known as hijras locally.

While there are differences in the demographics between the three diseases, there is commonality in strategy for containing or eradicating them. Treatment as well as prevention efforts by the government with support and collaboration of international partners (e.g. The Global Fund, WHO) and local NGOs is essential to meet the objectives. The similarities and differences warrant the government and other stakeholders to make informed decision in terms of designing programs, allocating resources, and implementing activities. Knowledge and data on disease pattern, institutional capacity, and private and public costs of both treatment and awareness creation are therefore most pertinent.

2. Methodology

2.1 Approach

According to the Terms of Reference (TOR) the primary objective of this study is to derive disease specific expenditure from the Bangladesh National Health Accounts (BNHA) data set focusing on Tuberculosis, Malaria and HIV/AIDS. The methodology followed for redistributing BNHA expenditure for these three diseases includes: literature review, analysis of primary and secondary data following "Guidelines on the voluntary reporting of disease specific expenditures" of the Organization for Economic Co-operation and Development (OECD) Health Division (www.oecd.org/health).

For redistributing the BNHA healthcare expenditure by user, reliable facility costing and nationally representative sample of healthcare facility-users (patient) data is a prerequisite. Facility costing data provides key cost components by type of facility while user data is used for distribution of expenditure by different types of users and diseases. Allocating expenditure from National Health Accounts to a specific disease is challenging, and not all components of NHA can be allocated to a specific disease or health condition. More specifically, BNHA expenditures that could not be redistributed to disease under this study are shaded in gray in **Table 3**. Due to lack of supporting data, expenditure on general administration and other providers could not be allocated to any specific disease. Overall recurrent healthcare spending for Bangladesh in 2015 is estimated at Taka 415 billion (USD 4.9 billion) of which 98% is considered for redistribution by disease or health condition.

Table 3: Current Healthcare Expenditures (CHE) by Major Financing Source and type of Provider, Bangladesh 2015 (in Billion BDT)

Provider	MOHFW	Other public	House-holds	Other private	ROW	Total
General administration	4.6					4.6
Hospitals	32.8		41.8	4.7	22.0	101.4
Ambulatory providers	24.5		65.0	0.9	2.8	93.2
Pharmacies and other medicine retailers			194.9			194.9
Other medical goods suppliers			0.6			0.6
Public health programs	6.6	1.3		2.0	7.2	17.1
Other providers	0.4	0.4		2.5		3.3
Total	**68.8**	**1.7**	**302.3**	**10.1**	**32.1**	**415.1**

Source: *Bangladesh National Health Accounts, 1997-2015*

[1]www.oecd.org/health

2.2 Primary Data Collection

As part of primary data collection, a survey of 77 healthcare facilities across the country was carried out in public and selected private facilities. In addition to costing data, randomized sample of inpatient (7,318) records from those facilities were collected and outpatient (2,071) interviews were conducted. For inpatients, retrospective data was collected on patient treatment, diagnosis and outcomes from clinical case records. For outpatients, data was generated through face-to-face interviews using semi structured questionnaires. The facility costing and user data was used for estimating actual costs of treatment of patients with specific diseases.

A Pharmacy Prescription Survey using the Intercontinental Marketing Survey's (IMS) national pharmacy panel was conducted to estimate cost of medicine incurred for treatment. Data from clients/patients/attendants (10,500) visiting those pharmacies was collected through a structured questionnaire. The sales records serve as an indicator of utilization of pharmacies/medicines by disease pattern. In addition, profile of patients in terms of gender and age provides morbidity trends and cost burden by demographic classifications. The cost of medicines by patient at public facilities was captured from Controller General of Accounts (CGA) audited data.

Data cleaning and coding of disease involved using the International Classification of Diseases (ICD) version-10, and the International Classification of Primary Care, second edition (ICPC-2) coding. Medicine coding and mapping to ICD 10 was done using the Anatomical Therapeutic Chemical (ATC) classification system.

2.3 Cost Analysis

For cost analysis a step-down cost accounting approach (Barnum and Kutzin 1993) for data analysis is used. Facilities cost were grouped by three level of cost centres: (i) inpatient/outpatient and preventive care; (ii) ancillary services - pharmacy, laboratory, and radiology; and (iii) overhead and administrative support; for cost analysis. As mentioned earlier, only recurrent costs of these cost centers were considered and where possible, inpatient costs were further disaggregated into medical and dental treatment. Disaggregation was also done for outpatient services, to medical treatment, dental treatment, and family planning services.

Breakdown of salaries and wages by personnel categories (i.e., separately for senior consultants, junior consultants, medical officers, interns, dental surgeons, radiologists, nurses, and cooks) were not available for cost analysis. Hence, tally of recorded personnel in each category and the midpoint of their applicable salary ranges are used and scaled to the actual total costs of salaries and allowances. Time spent by medical, nursing, family planning officers, Class III and Class IV staff under each cost centers was considered in allocating cost. Paramedical staff members' time were allocated to inpatient and outpatient treatment.

The value of medicine was allocated to Pharmacy Cost Centre while 15% of the medical and surgical requisites (MSR) costs were allocated to laboratory, and 15% to radiology where applicable. The remaining MSR costs were allocated to overhead and administrative support. Laundry and diet costs were allocated 100% to inpatient treatment. All other costs not allocated to any cost centers were allocated to the overhead and administrative support cost centers. After calculating cost by each cost centers, the costs of ancillary, overhead, and administrative support cost centers were distributed to the final patient service cost centers (i.e., inpatient, outpatient, and preventive).

Upon finalization of inpatient, outpatient, and preventive services cost, the unit costs of inpatient and outpatient services are calculated by dividing relevant cost with numbers of inpatient and outpatient. In addition, unit cost for outpatient visits, admissions, available beds, and bed-days and utilized bed-days are also calculated. Using the facility level unit cost, national-level estimates are generated applying post-survey weights. These weights were computed as the ratio of the number of surveyed facilities to the total number of facilities of the same type and the same sampling strata in Bangladesh.

Under BNHA, Government and Non-Government Organizations (NGOs) public-health programs expenditure targeting Tuberculosis, Malaria and HIV/AIDS patients were captured as preventive care. For this study all expenditure booked as preventive care in BNHA were revisited and further disaggregation of those expenditure by disease were made. For further disaggregation, technical inputs provided by the BNHA Cell of HEU was solicited. Electronic data of government expenditure on healthcare allowed identifying expenditure on procurement of medicines/vaccines for Tuberculosis, Malaria and HIV/AIDS.

3. Findings

Findings of this study is based on the expenditure reported under the Bangladesh National Health Accounts 1997-2015 and various published and unpublished documents collected from the Line Directors' (LD) office of the Ministry of Health and Family Welfare (MOHFW). On behalf of the MOHFW, the LDs are responsible for elimination/control of Tuberculosis, Malaria and HIV/AIDS programs. Opinion from Program Managers were solicited in reallocating expenditure linked to prevention of these diseases. Direct expenditure by patient against these diseases are estimated using patient data collected from selected public and private healthcare facilities using separate facility and patient weights to make the estimates nationally representable.

Expenditure on medicine used for specific disease is captured using data from "Pharmacy Prescription Survey (PPS) 2015" a national survey of pharmacy customer conducted by IMS Health Bangladesh. During the analysis of medicine expenditure, it was noticed that in some cases, diagnosis of the doctor is not coded using appropriate disease codes which require further verification. Due to time constraint, clarification on some of the disease coding could not be checked with IMS and therefore findings on medicine expenditure under this study may warrant minor changes.

3.1 Tuberculosis

3.1.1 Incidence and Interventions on Tuberculosis

The overall goal of Tuberculosis (TB) control in Bangladesh and across the globe is to reduce morbidity, mortality and transmission of this disease until it is no longer a public health problem. With the objective of eradicating TB, the global strategy and targets for TB prevention, care and control strives to: (i) integrate patient-centered care and prevention; (ii) advocate strong policies and supportive systems; and (iii) conduct intensive research and innovation. A key objective of Bangladesh's National Tuberculosis Control Program (NTP) is to sustain the global targets of achieving at least 70% case detection and 85% treatment success. Case Notification Rate (CNR) is defined as the number of cases registered and reported annually to NTP per 100,000 population. Another objective is to attain universal access to quality TB care for all TB patients.

NTP under the Directorate-General of Health Services (DGHS) of the Ministry of Health and Family Welfare is working to eradicate Tuberculosis (TB) from the country. One of the ways that NTP aims to eliminate TB as a public health problem is by ensuring that there is universal access to high quality care for all citizens of this country affected by TB.

Bangladesh is one of the 30 high Tuberculosis (TB) burden countries of the world. Its high population density, rural-urban migration, poor living and working conditions are contributors to spreading of this disease. The lack of awareness about TB infection further limits early detection and treatment. In Bangladesh, it is estimated that there are around 360,000 new TB cases each year, of which approximately 223,000 (62%) are notified (WHO 2017 Report). Approximately 73,000 people die annually from this disease. The incidence of Multi Drug Resistance Tuberculosis (MDR TB) is significant – almost 9,700 MDR cases per year (source: Global TB Report 2017- WHO).

According to the Tuberculosis Control in Bangladesh- Annual Report 2016, incidence rate for all forms of Tuberculosis in 2016 for the country is estimated 221 per 100,000 population which was 225 in 2015. From 2015 to 2016, the estimated incidence rate of HIV positive TB cases decreased. In 2016, the estimated incidence rate of HIV positive TB cases was 0.11 per 100,000 population, and in 2015 it was 0.14/100,000 (**Table 4**).

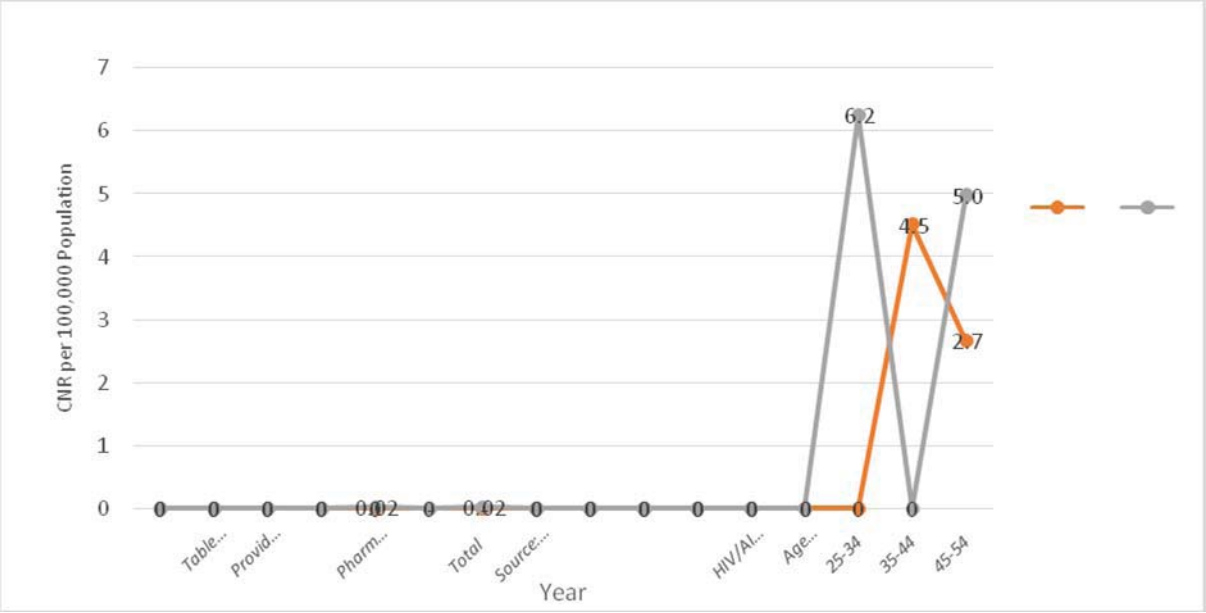
Table 4: Tuberculosis in Bangladesh: Selected Indicators, 2016

Estimates of TB Burden	**2016 (per 100,000 population)**	**2015 (per 100,000 population)**
Mortality (excluding HIV +ve TB)	40 (26-58)	45 (27-68)
Mortality (HIV +ve TB only)	0.11 (0.05-0.18)	0.14 (0.12-0.18)
Incidence (including HIV +ve TB)	221 (161-291)	225 (146-321)
Incidence (HIV +ve TB)	0.31 (0.16-0.5)	0.39
Incidence MDR/RR-TB	5.3 (2.7-8)	6 (3.4-8.7)

Source: *Compiled from Tuberculosis Control in Bangladesh- Annual Report 2016*

Case Notification Rate (CNR) is defined as the number of cases registered and reported annually to NTP per 100,000 populations. CNR for all forms of TB and bacteriology confirmed new smear positive (NSP) cases in Bangladesh continues to rise since 2012. In Bangladesh CNR was 138 in 2016 for all cases where rate of NSP was 77 **(Figure 1)**. NGOs and research and development institutes supports government's NTP efforts. The following are some of the key partners: Ashar Alo Society (AAS); BRAC; Damien Foundation; HEED Bangladesh; iccdr, b; International Organization for Migration (IOM); LEPRA Bangladesh; National Anti-Tuberculous of Bangladesh (NATAB); various projects of USAID including Challenge TB Bangladesh (CTB) Project; Urban Primary Health Care Service Delivery Project; WHO (NTP 2016).

Figure 1: Case Notification Rate Per 100,000 Population in Bangladesh, 2001-2016



Source: *Director General Health Services, National Tuberculosis Control Program Annual Report 2015*

Bangladesh's commitment to reduction of mortality, morbidity and transmission of TB has been a continual effort. In 1993, it adopted the World Health Organization-recommended Directly Observed Treatment, Short-course (DOTS) Tuberculosis control strategy. According to WHO, "The most cost-effective way to stop the spread of TB in communities with a high incidence is by curing it". DOTS approach was effective as its services were made accessible to all upazilas (sub-districts) by 1998. In 2003 the treatment success rate was over 85%. Since 2005, the NTP has been sustaining over 91% treatment success rates.

The National Tuberculosis Control Program (NTP) reached 100% DOTS coverage across the country by 2007. NTP under the aegis of the Directorate-General of Health Services (DGHS), Ministry of Health and Family Welfare (MOHFW) continues to offer basic TB control services, which includes case detection and treatment. Shorter treatment regimen for Multi Drug Resistant Tuberculosis (MDR-TB) is being implemented with a high cure rate of 75% or higher (source: WHO 2017 report). Global TB Report 2017 - by World Health Organization recognizes Bangladesh's success in the implementation of the TB Control Program.

The number of estimated TB cases in 2016 was 223,921, of which 124,603 were new Pulmonary Bacteriologically Confirmed. For the same year number of new Pulmonary Clinically Diagnosed and Extra Pulmonary Diagnosed cases were 20.1% and 19.4% respectively. A comparison of TB patient by gender shows that 58% of the total TB patient were male. However, in the case of Extra Pulmonary TB, females dominate over male where Male/Female ratio is found 0.91 compared to overall Male/Female ratio of 1.4.

Table 5: Tuberculosis Case Notification by Gender and Diagnosis Type in Bangladesh, 2016

	Male	Female	Total	M/F Ratio
Pulmonary Bacteriologically Confirmed	75,728 (57.9%)	48,875 (52.5%)	124,603 (55.6%)	1.55
Pulmonary Clinically Diagnosed	27,488 (21.0%)	17,521 (18.8%)	45,009 (20.1%)	1.57
Extra Pulmonary	20,732 (15.8%)	22,817 (24.5%)	43,549 (19.4%)	0.91
Relapse	5,782 (4.4%)	3,304 (3.6%)	9,086 (4.1%)	1.75
Treatment After Failure	520 (0.4%)	230 (0.2%)	750 (0.3%)	2.26
Treatment After Loss of follow up	162 (0.1%)	47 (0.1%)	209 (0.1%)	3.45
Others	484 (0.4%)	231 (0.2%)	715 (0.3%)	2.10
Total	**130,896 (58%)**	**93,025 (42%)**	**223,921 (100%)**	**1.41**

Source: *Annual Report 2017, National Tuberculosis Control Program, DGHS, MOHFW*

TB cases notification by region shows that Dhaka division accounts for one third of the TB patient identified in the country followed by Chittagong 21% (Table 6). When the number of TB patient as percentage of total divisional population is looked at, Barisal, Khulna and Sylhet accounts for higher percentage (0.17%) of TB patient compared to its divisional population. The lowest percentage of TB patient as a ratio to divisional population is found in Rajshahi (0.1%) followed by Dhaka (0.13%). This may be due to concentration of jute industry workers in Khulna-Barisal and tea plantation workers in Sylhet divisions respectively.

Table 6: TB Case Reported by Region, 2016

	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Total
Pulmonary Bacteriologically Confirmed	8,812	27,033	35,671	18,620	11,428	12,909	10,130	124,603
Pulmonary Clinically Diagnosed	2,844	8,834	14,020	5,000	2,824	5,745	5,742	45,009
Extra Pulmonary	1,687	7,901	19,484	2,920	4,871	3,574	3,112	43,549
Relapse	573	2,013	3,831	585	501	478	1,105	9,086
Treatment After Failure	16	114	402	36	89	46	47	750
Treatment After Loss of follow up	3	32	115	12	26	9	12	209
Others	50	85	442	16	84	29	9	715
Total	**13,985 (6%)**	**46,012 (21%)**	**73,965 (33%)**	**27,189 (12%)**	**19,823 (9%)**	**22,790 (10%)**	**20,157 (9%)**	**223,921 (100%)**
TB patient as % of Divisional Population	**0.17%**	**0.14%**	**0.13%**	**0.17%**	**0.10%**	**0.13%**	**0.17%**	**0.14%**

Source: *National Tuberculosis Control Program, DGHS, MOHFW*

3.1.2 Expenditures on Tuberculosis

A secondary analysis of National Health Accounts 1997-2015 data reveals that in 2015, Bangladesh spent around Taka 2.74 billion (**Table 7**) on TB. Most of this amount was spent on curative and preventive care offered by the government and NGOs. In 2015, total government spending on TB was around Taka 1.65 billion of which Taka 1.07 billion was incurred through hospitals providing inpatient and outpatient care. Government spending on prevention of TB for the same year was Taka 0.59 billion.

NGOs with direct assistance from the Global Fund and other development partners spent Taka 1.02 billion on TB in 2015 (**Table 7**). Around 70% of this amount was used on curative care provided by NGO operated Hospitals and Ambulatory Care providers. NGO spending on preventive care for that year was Taka 0.31 billion. Due to wide coverage of National Tuberculosis Control Program jointly implemented by Government and NGOs, household out of pocket expenditure on TB was nominal. This study observed very insignificant number of TB patient availing treatment from private healthcare facilities. The only household out of pocket spending on TB was captured was on purchase of medicine amounting Taka 67 million.

Table 7: Healthcare Expenditure on Tuberculosis, 2015 (in Million BDT)

Provider	MOHFW	Households	Other private	Rest of the world	Total
General administration					-
Hospitals	1,067.1			142.9	1,210.0
Ambulatory providers				571.8	571.8
Pharmacies and other medicine retailers		66.7			66.7
Other medical goods suppliers					-
Public health programs	586.4			306.3	892.7
Other providers					-
Total	1,653.5	**66.7**	**-**	1,021.0	2,741.2

Source: *Bangladesh National Health Accounts, 1997-2015*

Further disaggregation of expenditure on TB made at various level of healthcare facilities shows that 71.4% of such expenditures are made at designated Chest and TB hospitals (**Table 8**). Medical College Hospitals (MCH) are the second popular destination of TB patients, availing curative care accounting for 22.6% of total TB outlay. Use of Upazila Health Complex (UHC) in availing curative care by TB patient is very low - 0.5%.

Table 8: Breakdown of Hospital Expenditure by Tuberculosis Patient, 2015 (in Million BDT)

Facility Type	Male	Female	Total	Percentage (%)
Chest and TB Hospital	471.2	392.7	863.9	71.4%
District Hospital	20.1	7.6	27.7	2.3%
Medical College Hospital	147.0	126.4	273.5	22.6%
Specialized Hospital	12.8	26.4	39.2	3.2%
Upazila Health Complex	-	5.8	5.8	0.5%
Total	**651**	**559**	**1,210**	**100%**

Source: *Derived from Bangladesh National Health Accounts 1997-2015 Database*

Table 9 below presents hospital expenditure at Government and NGO hospital by different age group of patients. For interpretation of this table, it is worth mentioning that the percentage share of the hospital expenditure for a specific age group does not reflect that higher or lower amount of money was spent on a specific age group. In most likely scenario, it is rather a reflection of higher or lower number of patient availed treatment from that age group. Breakdown of hospital expenditure of the TB patient shows that 58% of the patients belongs to reproductive age group (age between 15 to 45). Out of total hospital expenditure on TB, Taka 297 million is spent by patients in the 35-45 age group. In 2015, only 1% of the total hospital expenditure on TB is accounted to patients belonging to the 0-14 years old age category.

Table 9: Breakdown of Hospital Expenditure of TB patient by Age Category, 2015 (in Million BDT)

Age Category	Male	Female	Total	Percentage (%)
0-14	8.0	7.1	15.1	1%
15-24	81.8	73.1	154.9	13%
25-34	116.6	133.2	249.8	21%
35-44	156.3	140.6	296.9	25%
45-54	110.6	53.7	164.3	14%
55-64	82.8	104.7	187.5	15%
65-74	63.6	37.0	100.6	8%
75+	31.5	9.4	40.9	3%
Total	**651.2**	**558.9**	**1,210.1**	**100%**

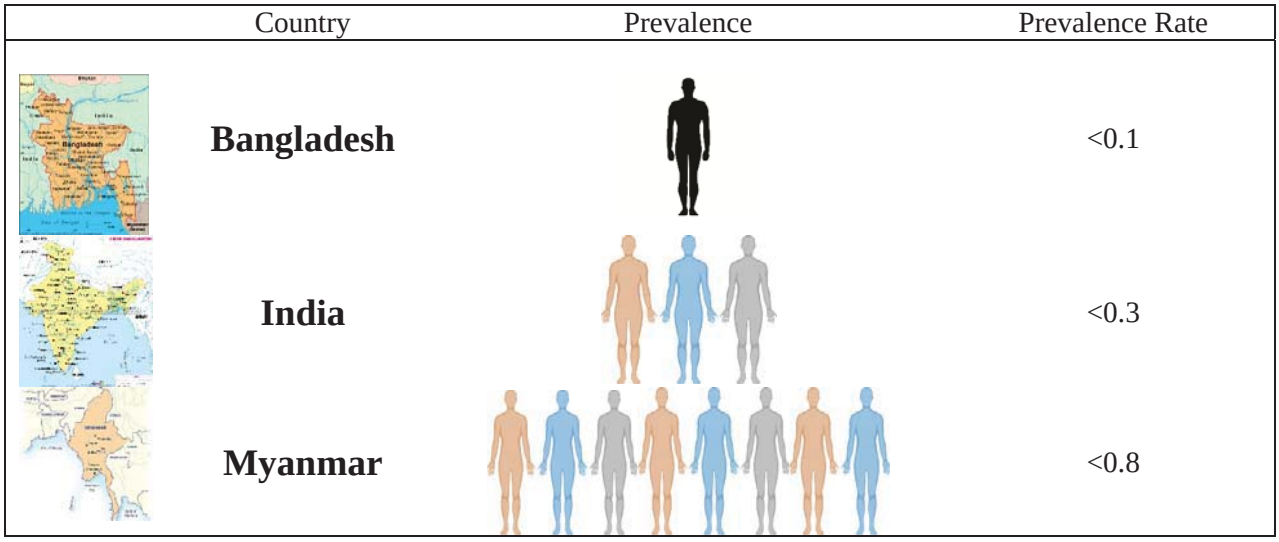
Source: *Derived from Bangladesh National Health Accounts 1997-2015 Database*

3.2 HIV/AIDS

3.2.1 Incidence and Interventions on HIV/AIDS

Compared to Bangladesh's neighboring countries, prevalence of HIV/AIDS in Bangladesh is still low (<0.1%). According to Joint United Nations Program on HIV/AIDS (UNAIDS) statistics (***Figure 2***), prevalence of HIV/AIDS in India is three times higher (<0.3%) than Bangladesh while it is eight times higher for Myanmar (<0.8%). However, the lack of knowledge about the disease amongst the general population and the high mobility of people within and beyond the country makes it vulnerable for HIV epidemic.

Figure 2: Prevalence of HIV/AIDS in Bangladesh, India and Myanmar 2015



Source: *Derived from UNAIDS Datasheet* **aidsdatahub.org/unaids-data-2017-unaids-2017-0**

As part of Bangladesh's commitment to fight against HIV/AIDS, a serological surveillance system for the country was introduced in 1998 to monitor HIV and risk behavior. The last round of serological surveillance was conducted in 2011 focusing on populations most at risk of HIV- sex workers, heroin smokers, people who inject drugs (PWID), combined PWID and heroin abusers, transgendered people (hijra) and males who have sex with males (MSM).

According to UNAIDS fact sheet on HIV/AIDS in Bangladesh, estimated number of people living with HIV (PLHIV) in 2015 was estimate 9,636 (**Table 10**) and 1,070 were newly infected. Number of death due to HIV for year was estimated 868. Breakdown of HIV patient by gender and age shows that number of adult male PLHIV for 2015 was almost double (85% higher) compare to adult female (PLHIV 3,173). Children infected mainly by mother to child transmission in 2015 was estimated 293.

Table 10: Estimated HIV/AIDS Patients in Bangladesh 2015

Indicator/Topic	2015 Estimates		
	Estimates	Low range	High range
Prevalence			
Estimated PLHIV (Adults + Children)	9,636	8,392	11,060
Estimated New HIV infections (Adults + Children)	1,070	955	1,092
Estimated Annual AIDS Deaths (Adults + Children)	868	742	987
Prevalence Rate of HIV			
Prevalence Adult - 15-49 (%)	<0.1	<0.1	<0.1
Prevalence Male - 15-49 (%)	<0.1	<0.1	<0.1
Prevalence Female - 15-49 (%)	<0.1	<0.1	<0.1
Number Patient by Age Group and Sex			
Estimated PLHIV Adults (15+)	9,344	8,120	10,746
Estimated PLHIV Adult Male (15+)	5,878	5,083	6,828
Estimated PLHIV Adult Female (15+)	3,173	2,790	3,585
Estimated PLHIV Children (0-14)	293	247	333

Source: *UNAIDS Datasheet* (http://aidsdatahub.org/unaids-data-2017-unaids-2017-0)

Under the ninth round of serological surveillance was conducted amongst the sex worker, people who inject drugs (PWID), heroin abusers, PWID as well as heroin abusers and LGBT (lesbian, gay, bisexual, and transgender). Within this group occurrences of HIV and active syphilis are found out to be 0.7% and 3% respectively. HIV was detected within 5 groups of persons who inject drugs. The highest rates were found among male PWID from Dhaka (5.3%). Test conducted for antibodies to HIV among the PWID revels more than 50% of them are HIV positive. The rates however, varied in different cities and Kanshat in Rajshahi division had the highest prevalence (95.7%). HIV rates in Dhaka have significantly decreased over the rounds of surveillance (NASP 2011).

3.2.2 Expenditures on HIV/AIDS

To estimate total expenditure on HIV/AIDS in Bangladesh, a secondary analysis of Bangladesh National Health Accounts (BNHA) 1997-2015 data was carried out. Based on the BNHA data and various documents collected from the National AIDS/STD Program of the MOHFW, Bangladesh and Joint United Nations Program on HIV/AIDS (UNAIDS) Dhaka office, total expenditure on HIV/AIDS is estimated around Taka 2.58 billion (**Table 11**) for the year 2015. Public health program or curative care for HIV/AIDS patients in Bangladesh are predominantly delivered by NGOs. With direct financial assistance from the foreign development partner and government along with its own funds, NGOs accounts for more than 90% of the healthcare expenditure on HIV/AIDS (**Table 11**).

Table 11: Healthcare Expenditure on HIV/AIDS in Bangladesh, 2015 (in Million BDT)

Provider	MOHFW	Households	NGO/Rest of the world	Total
General administration				-
Hospitals	18.4		803.85	822.2
Ambulatory providers			548.27	548.27
Pharmacies and other medicine retailers		0.02	31.6	31.60
Other medical goods suppliers				-
Public health programs	211.5		495.33	706.8
Other providers				-
Total	229.9	0.02	1,879.04	2,108.9

Source: *Derived from Bangladesh National Health Accounts 1997-2015 Database*

According to the System of Health Accounts 2011 (SHA 2011) guidelines, project and programs carried out by NGOs with direct financial assistance from foreign development partners is termed as "Rest of the World (ROW)" financing schemes. The usage NGO's own fund is termed as "NPISH financing" schemes. In this report both "NPISH financing" as well as "ROW financing" is merged and reported as "NGO/Rest of the World".

In 2015, combined NGO/ROW spending on HIV/AIDS was Taka 2.35 billion (**Table 11**). NGOs offer both preventive and treatment care for HIV/AIDS and approximately 59% (Taka 1.4 billion) of NGO/Rest of the World spending were made on treatment purpose. NGO offered public health programs for creating awareness and educating general people on HIV/AIDS accounts for Taka 1.14 billion in 2015. In addition to preventive and treatment care, NGOs are also responsible for distributing free medicine to HIV/AIDS patients as part of its joint program with government and development partners. In 2015, NGOs spent around Taka 32 million on medicine for HIV/AIDS patients.

A considerable number of NGOs claimed that in addition to their family planning program they work in awareness creation for prevention of HIV/AIDS. This work of creating awareness on HIV/AIDS by the NGOs are pro-bono and therefore time spend by their worker is reported as NGOs own contribution. In addition to those offering family planning program significant number of NGOs working with Department of Narcotics Control, Security Services Division, Ministry of Home Affairs and with Department of Social Services, Ministry of Social Welfare on drug demand reduction and treatment programs dealing with IDUs and CSWs also work on awareness creation for prevention of HIV/AIDS and STDs. Traditionally NGOs are highly dependent on foreign funding for their programming, but for treatment of HIV/AIDS patients resources are generated by the NGOs from local sources. Big companies and corporations finance such targeted care under their Corporate Social Responsibility (CSR) financing scheme.

In 2015, government direct spending on HIV/AIDS was Taka 0.23 billion of which Taka 18 million was spent for curative care and rest (Taka 212 million) on prevention of HIV/AIDS. This study could not measure total household out of pocket (OOP) spending on HIV/AIDS due to inadequate data, and therefore could not be used in making reliable national estimates. The only household OOP expenditure was captured on medicine through IMS pharmacy survey and that amounted to only Taka 0.02 million in 2015.

Expenditure on curative care for the HIV/AIDS patient is estimated by analyzing hospital expenditure reported under 2015 BNHA where hospitals recurrent expenditure is redistributed to a random sample of patients. The random sample of patients were collected from a few selected hospitals and cost per patient leading to diseases are estimated using separate facility and facility-patient weights. Based on this analysis, almost 99% of the HIV/AIDS patients are dependent on NGO offered General and Specialized healthcare facilities for their treatment. The only type of government facility offering inpatient services to HIV/AIDS patient is the Infectious Disease Hospitals (IDH). Expenditure incurred at IDH in 2015 was Taka 18 million in 2015, while it was Taka 803 million for the NGOs facilities.

Table 12: Hospital Expenditure on HIV/AIDS by Financing Schemes 2015 (in Million BDT)

Providers	Central government	NGO/Rest of the World	Total
General hospitals		344.57	579.9
Specialized hospitals		477.68	803.9
Infectious Disease Hospital	18.4		18.4
Total	**18.4**	**803.85**	**840.64**

Source: *Derived from Bangladesh National Health Accounts 1997-2015 Database*

In 2015 NGO/Rest of the World spent Taka 31.6 million (**Table 13**) on medicine for the HIV/AIDS patients. According to NASP/UNAIDS program data, only 14% **(Table 14)** of the HIV patients received ART drugs in 2015. Analysis of pharmacy sales data shows only Taka 0.02 million was spend by household in procurement of ART drugs in 2015.

Table 13: Medicine Expenditure of HIV/AIDS by Financing Schemes 2015 (in Million BDT)

Providers	Central government	Households	Rest of the world	Total
Pharmacies and other medicine retailers		0.02	31.58	31.60
Total	**-**	**0.02**	**31.6**	**31.6**

Source: *Derived from Bangladesh National Health Accounts 1997-2015 Database*

Table 14: PLHIV Receiving ART

Indicator/Topic	2015 Estimates		
	PLHIV	Receiving ART	% receiving ART
Reported number of PLHIV (all ages) receiving ART	10,706	1,483	14%
Reported number of adults receiving ART	9,344	1,393	15%
Reported number of female adults receiving ART	3,173	559	18%
Reported number of children receiving ART	293	90	31%

Source: *Program Data, NASP /UNAIDS*

Preventive care programs targeting HIV/AIDS in Bangladesh are primary level prevention as it takes measures to reduce the onset of the disease, diminish the number of new cases, and anticipate the emergence and lessen the severity of diseases. In 2015, total preventive care expenditure for HIV/AIDS is estimated Taka 1.14 billion (**Table 15**). Out of the Taka 1.14 billion 81% (Taka 930 million) is spent by NGO/Rest of the World, and the rest by the government (Taka 212 million).

Table 15: Preventive Care Expenditure on HIV/AIDS by Financing Schemes 2015 (in Million BDT)

Providers	Central government	NGO/Rest of the World	Total
Provider of preventive care	211.5 (19%)	930.0 (81%)	1,141.5 (100%)
Total	**211.5**	**930.0**	**1,141.5**

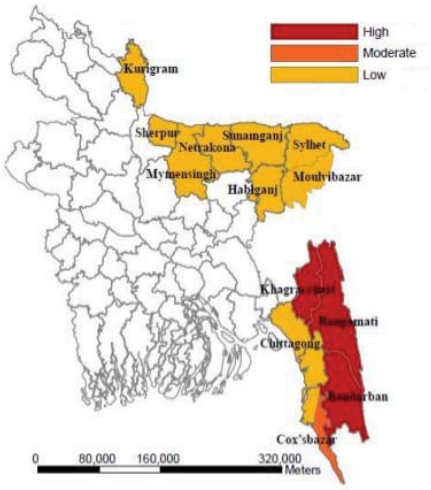
Source: *Derived from Bangladesh National Health Accounts 1997-2015 Database*

3.3 Malaria

3.3.1 Incidence and Interventions on Malaria

Malaria continues to be a public health problem in Bangladesh. It is one of the four major malaria endemic countries of the world with almost one third of its population at risk of acquiring the illness (Zulfiqar, 2017). According to WHO (2017) over 98% of the total cases in the country are reported from the 13 eastern and north-eastern districts in Bangladesh's border belt (***Figure 3***). The three hill districts – Bandarban, Rangamati, and Khagrachhari – alone reports 93% of the cases. It is estimated that 17.5 million inhabitants, primarily those residing in the hill tracts and north-east Bangladesh are at risk of the disease. In 2016, 27,737 individuals were diagnosed with malaria that of 39,719 in 2015 and 57,840 in 2014, according to Dhaka Tribune, 2017. In the high endemic areas, prevalence of malaria ranges between 3.1% to 36% (Zulfiqar 2017).

Figure 3: Intensity of Malaria Endemic in Bangladesh, 2015



The most frequent causative agent of malaria in Bangladesh is *Plasmodium falciparum*. Resistance to older drugs is a concern. Residence near water bodies, and construction material such as bamboo and straws can be haven for mosquito breeding. Lack of awareness and poor hygiene conditions increases the vulnerability of transmission from the affected to non-affected. Non-immune population migrates frequently to and from these areas thereby increasing the risk of transmission outside the affected regions.

For elimination of malaria, the Government in partnership with NGOs implementing several programs. The National Malaria Elimination Program (NMEP) of the DGHS, MOHFW is responsible for implementation of malaria control and elimination interventions. With financial assistance from the Global Fund (GFATM), the Government and NGOs, academics, research institutions and some private organizations are working closely aiming at elimination of malaria. Grants received from GFATM in 2007 and 2009 allowed the country to scale up its malaria control program and expand the intervention coverage.

Under the NMEP, National Strategic Plan (NSP) for Malaria Elimination 2017- 2021 has been developed with the vision of "A Malaria-free Bangladesh by 2030", in alignment with both "Strategy for Malaria Elimination in the South East Asia Region (2017–2030)" and "Global Technical Strategy for Malaria 2016- 2030". The objectives are: (1) Reduce Annual Parasite Incidence to less than 0.46 by 2021; (2) Interrupt the transmission of malaria in eight of the country's 13 endemic districts by 2021; (3) Ensure that the remaining 51 districts are free from malaria transmission by 2021; (4) Prevent the re-emergence of malaria in districts where transmission has been interrupted; and (5) Prevent the emergence of Artemisinin-based combination therapies (ACT) resistant *Plasmodium falciparum* in Bangladesh.

Bangladesh intends to achieve the target of eliminating malaria in the 'less endemic areas' (51 districts) and accelerate control efforts in the more endemic areas' (13 districts) in next five year. The key intervention plan to achieve this goal are: early case detection and effective management, prevention, case and entomological surveillance, along with expanding research for innovation and improved delivery of services and strengthening the enabling environment.

During 2008 to 2013 period, Bangladesh observed a steady decline in malaria due to its accelerated efforts in program implementation involving NGOs. In 2008, rate of morbidity per thousand population was 7.73 which reduced to 2.03 in 2013. Similarly, the mortality rate per thousand population was reduced to 0.001 in 2013 from 0.014 in 2008 **(Table 16)**. In 2014, Bangladesh experienced a sudden rise in malaria, increasing the rate of morbidity by more than 200% due to favorable meteorological conditions in the monsoon period. Four most endemic districts (Bandarban, Khagrachhari, Rangamati, and Cox's Bazar) out of 13 malaria-endemic districts reported 98% of total cases. To control the outbreaks, various initiatives were taken by NMEP in 2015 which brought down the number of morbidity and mortality per thousand population to 3 and 0.001 respectively.

Currently the three Chittagong Hill Tracts districts (Khagrachhari, Rangamati, and Bandarban) has Annual Parasite Incidence (API) greater than 1 compared to other 13 malaria-prone districts in 2008. It is a fact that these three districts accounts for almost 93% of malaria patients in the country. Mobility of medical teams in these three districts is a big challenge. Coordinated efforts between the Government and NGOs are therefore essential for eradication of malaria.

Table 16: Positive Cases and Death of Malaria Patient 2000-2016

Year	Positive cases		Death	
	Number	Per 1,000 population	Number	Per 1,000 population
2000	54,223	5.63	478	0.049
2001	54,216	5.55	490	0.049
2002	62,269	6.23	588	0.058
2003	54,654	5.40	577	0.056
2004	58,894	5.67	535	0.052
2005	48,121	4.56	501	0.047
2006	32,857	3.06	307	0.029
2007	59,857	5.46	228	0.021
2008	84,690	7.73	154	0.014
2009	63,873	5.83	47	0.004
2010	55,873	5.10	37	0.003
2011	51,773	3.91	36	0.003
2012	29,518	2.23	11	0.001
2013	26,891	2.03	15	0.001
2014	57,480	4.34	45	0.003
2015	39,719	3.00	9	0.0007
2016	27,737	1.58	17	0.0009

Source: *Director General of Health Services (DGHS) Health Bulletin 2017*

3.3.2 Expenditures on Malaria

The expenditure estimates on malaria is also based on the secondary analysis of the BNHA data and documents collected from the National Malaria Control Program of the Ministry of Health and Family Welfare (MOHFW). Discussion with government officials implementing the program and data gathered from visiting some of the healthcare facilities in malaria prone areas is also used in reallocating expenditure for this disease.

Total healthcare expenditure on malaria in 2015 is estimated Taka 1.4 billion **(Table 17)**. Around 46% of the healthcare expenditure on malaria is spent on curative care providing inpatient and outpatient services. For curative care, almost 100% of malaria patients rely on MOHFW operated healthcare facilities; 93% of the patients are concentrated in three hill districts.

Preventive care expenditure for malaria in 2015 is estimated Taka 729 million (**Table 17**). This amount is jointly spent by the Local Government (LG) and NGO/Rest of the World. BNHA capture LG spending on healthcare and further analysis of this data suggests that a substantial portion of the City Corporation and Municipalities spending is on mosquito control. In 2015, LG spending on prevention of malaria is estimated Taka 465 million. Amount spent by NGOs creating awareness and preventing spread of malaria accounts for the rest of the preventive care expenditure.

Table 17: Healthcare Expenditure on Malaria in Bangladesh, 2015 (in Million BDT)

Provider	MOHFW	Local Government schemes	Households	Other private	NGO/Rest of the world	Total
General administration						-
Hospitals	623					623
Ambulatory providers						-
Pharmacies and other medicine retailers			10			10
Other medical goods suppliers						-
Public health programs		465			264	729
Other providers						-
Total	**623**	**465**	**10**	**-**	**264**	**1,362**

Source: *Bangladesh National Health Accounts, 1997-2015*

As mentioned earlier, almost 100% of the curative care services for malaria is delivered by MOHFW hospitals. Further analysis of the hospital spending reveals that only two types of government hospitals account for almost the entire curative care expenditure on malaria. In 2015, expenditure on malaria by Upazila Health Complex is Taka 352 million (57%) while it is Taka 264 million from Districts Hospitals. Expenditure on curative care of malaria patients is estimated by analyzing hospital expenditure reported under BNHA 1997-2015. Hospital recurrent expenditure is redistributed to a random sample of patients. The random sample of patients were collected from a few selected hospitals, and cost per patient leading to diseases are estimated using separate facility and facility-patient weights.

Table 18: Curative Care Expenditure on Malaria at Hospitals (in Million BDT)

Facility Type	Male	Female	Total
District Hospital	176.3	87.6	263.8
Medical College Hospital		6.5	6.5
Upazila Health Complex	182.2	170.2	352.3
Total	**358.4**	**264.2**	**622.7**

Source: *Bangladesh National Health Accounts, 1997-2015*

4. Conclusion

Combined spending for eradicates/control Tuberculosis (TB), Malaria and HIV/AIDS in Bangladesh for the year 2015 is estimated Taka 6.2 billion which is around 1.6% of total current health expenditure (CHE) of the country. Expenditure on TB and HIV/AIDS for the year is estimates, Taka 2.7 and 2.1 billion respectively while it is around Taka 1.4 billion for Malaria.

- According to the BNHA 1997-2015 expenditure on medicine and curative care accounts for around 85% of Household Out-of-Pocket (OOP) expenditure. Combined efforts by the Government and NGOs to fight against TB, Malaria and HIV/AIDS have significantly reduced the OOP burden on household for curative care and medicine.

- High dependency on funding from the development partners for eradication/control of TB, Malaria and HIV/AIDS, especially for the curative care makes it vulnerable and not sustainable in long run.

- Bangladesh observed a steady decline in malaria due to its accelerated efforts in program implementation involving NGOs. In 2008, rate of morbidity per thousand population was 7.73 which reduced to 2.03 in 2013. Similarly, the mortality rate per thousand population was reduced to 0.001 in 2013 from 0.014 in 2008

- Incidence rate for all forms of Tuberculosis is in decline which is currently 221 per 100,000 population compared to 225 in 2015. In 2016, the estimated incidence rate of HIV positive TB cases per 100,000 was 0.11 while in 2015 it was 0.14.

- TB cases notification by region shows that Dhaka and Chittagong division accounts for more than 50% of the TB patient identified in the country. One simple explanation is high number of industrial concentration in the region but worth exploring if there are other reasons contributing.

- Introduction of World Health Organization-recommended Directly Observed Treatment Short Course (DOTS) as part of the Tuberculosis control strategy is found very effective. DOTS service is accessible to all upazilas (sub-districts) which helped the NTP reaching more than 91% treatment success rates.

- For treatment and prevention, government spent around 60% of the total expenditure on TB. In 2015, government spent Taka 1.7 billion on TB of which 65% for curative care. Household relies on Government and NGO operated facilities for treatment of TB and only household OOP expenditure for TB incurs in procurement of medicine.

- Prevalence of HIV/AIDS in Bangladeshis still low (<0.01) compared to India where it is three times higher (0.03) than Bangladesh and eight times higher for Myanmar (<0.08%). Lack of knowledge about the disease by general population and high mobility of people within and beyond the country makes it vulnerable for HIV epidemic.

- For prevention of HIV/AIDS or providing curative care to the identified patient, NGOs are the largest provider. Almost 90% of expenditure on HIV/AIDS are made by the NGO/Rest of the World with direct financial assistance from the development partner and government as well as using their own resources. Major portion (72%) of this fund are spend on curative care in 2015.

- NGO spending on public health programs for prevention of HIV/AIDS in 2015 is Taka 707 million. In addition to curative and preventive care, NGOs are also responsible for distributing free medicine to HIV/AIDS patients as part of its joint program with government and development partners. In 2015, government direct spending on HIV/AIDS was Taka 0.23 billion of which Taka 18 million was spent for curative care and rest (Taka 212 million) on prevention of HIV/AIDS.

- Malaria is concentrated in 13 eastern and north-eastern border districts in Bangladesh where three hill districts – Bandarban, Rangamati, and Khagrachhari – alone reports 93% of the cases. Due to external factor it experienced a rise in “positive cases” in 2014 reaching 4.34 per 1,000 population which has now declined to 1.58 in 2016.

- Bangladesh intends to achieve the target of eliminating malaria in the ‘less endemic areas’ (51 districts) and accelerate control efforts in the more endemic areas’ (13 districts) in next five year. The key intervention plans to achieve this goal are: early case detection and effective management, prevention, case and entomological surveillance, along with expanding research for innovation and improved delivery of services and strengthening the enabling environment.

- Total healthcare expenditure on malaria in 2015 is estimated Taka 1.4 billion of which 46% is spent on curative care provided by the government. Almost 100% of malaria patients rely on MOHFW operated healthcare facilities for the treatment of malaria.

- Preventive care expenditure for malaria in 2015 is estimated Taka 729 million. This amount is jointly spent by the Local Government (LG) and NGO/Rest of the World. In 2015, LG spending on prevention of malaria is estimated at Taka 465 million.

Bibliography

Barnum, H., and J. Kutzin. 1993. Public Hospitals in Developing Countries, Resource Use, Cost, Financing. Baltimore: Johns Hopkins University Press.

Director General Health Services (DGHS). 2016.Health Bulletin 2016. MIS, DGHS,Ministry of Health and Family Welfare. , Government of the People's Republic of Bangladesh.

_____, 2015. Health Bulletin 2015. MIS, DGHS, Ministry of Health and Family Welfare. , Government of the People's Republic of Bangladesh.

Ministry of Health and Family Welfare. 2018. Bangladesh National Health Accounts 1997-2015. Health Economics Unit (HEU), Health Services Division (HSD), Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh

Karishmah Bhuwanee, et. al. 2013 Dominica National Health Accounts and HIV Subaccounts, Prepared for Health Finance and Governance Project, ABT Associates, USA, for USAID.

Najmul Hossain, 2016a. Estimating Bangladesh Urban Healthcare Expenditure Under the System of Health Accounts (SHA) 2011 Framework. Prepared for Health Finance and Governance Project, ABT Associates, USA, for USAID.

_____, 2016b. Reproductive, Maternal, Newborn and Child Health (RMNCH) Expenditure Bangladesh. Prepared for Health Finance and Governance Project, ABT Associates, USA for USAID.

Najmul Hossain and Ghulam Rabbani, 2007. Status of System of Health Accounts (SHA) in Bangladesh, 2006.

(National AIDS/STD Program NASP). 2011. National HIV Serological Surveillance, 2011 Bangladesh. 9th Round Technical Report. NASP, DGHS, Ministry of Health and Family Welfare. , Government of the People's Republic of Bangladesh.

National Malaria Control Program (NMCP) 2015. National Malaria Control Program:Audit Report 2015.NMCP, Director General Health Services, Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh.

_____, 2012. National Malaria Control Program:Audit Report 2012. NMCP, Director General Health Services, Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh.

National Tuberculosis Control Program (NTP). 2016. Tuberculosis Control in Bangladesh: Annual Report 2016. NTP, DGHS, Ministry of Health and Family Welfare, Ministry of Health and Family Welfare. , Government of the People's Republic of Bangladesh.

_____, 2015. Tuberculosis Control in Bangladesh: Annual Report 2015. NTP, DGHS, Ministry of Health and Family Welfare, Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh.

OECD, December 2013, "Guidelines on The Voluntary Reporting of Disease-Specific Expenditures".

_____, December 2008, Estimating Expenditure by Disease, Age and Gender under The System of Health Accounts (SHA) Framework.

Ravi P. Rannan – Eliya, et al, 2012. Impact of Maternal and Child Health Private Expenditure on Poverty and Inequity. ADB Regional Technical Assistance Project: TA-6515 REG, Technical Reports A, B, C.

UNAIDS, Bangladesh 2016 Fact Sheet on HIV/AIDS.

WHO.2017.Malaria.[Online]Available at:http://www.searo.who.int/bangladesh/areas/malaria/en/

[Accessed: 24 Feb. 2017].http://www.searo.who.int/bangladesh/areas/malaria/en/

Zulfiqar Shakeel. 2017. Malaria Situation, Problem, Response and Evaluation in Bangladesh. https://www.medeveryday.com/single-post/2017/02/27/Malaria-Situation-Problem-Response