



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

HEALTH BULLETIN 2017

Bangladesh is above
in healthcare index
among neighbors
-Lancet Report 2017



Hon'ble Prime Minister Sheikh Hasina, Mother of Humanity, visiting Forcibly Displaced Myanmar Nationals (FDMNs) at Kutupalong Camp, Ukhiya, Cox's Bazar



Directorate General of Health Services
Ministry of Health and Family Welfare

Sasthya Batayan 16263
National Health Service Helpline

Doctor's Suggestion Health Information Ambulance Information Hospital Accident Information

Dial 16263 to get health-related advice from doctors 24/7


Management Information System
Directorate General of Health Services
Mohakhali, Dhaka 1212
www.dghs.gov.bd







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Honorable Minister

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



Message

The Government of Bangladesh is committed to ensuring health services for all citizens. We are trying to strengthen the health system by adopting strategies for the best use of all available resources and restructuring management systems. I am pleased to know that Health Bulletin 2017 is in the process of publication. The Bulletin always highlights the proper scenario of our health sector and pinpoints what are needed to be done, along with the progresses we have already made.

Our Hon'ble Prime Minister Sheikh Hasina is always assertive and her thoughtful leadership guides us to set Bangladesh as an exemplifying role model in many aspects of the health sector that have been recognized and appreciated internationally. She is even trying to ensure optimum health services for Rohingya refugees with our limited resources.

We have to achieve the targets of Sustainable Development Goals (SDGs) by 2030 on time. We have successfully completed our work to achieve the targets of the Millennium Development Goals (MDGs), which were really challenging in the context of our limited resources. I would like to thank Prof. Dr. Abul Kalam Azad, Director General of the DGHS and former Director of MIS-Health for his innovative ideas that helped us in those accomplishments. I hope the MIS-Health will continue to run across the pathways that he had set forth.

I would also like to thank the workforce engaged in the editing and production of Health Bulletin 2017 which always serves as a databank for us to prioritize areas of improvements.

I look forward to seeing more innovative ideas and activities that will ultimately help us establish a healthy and wealthy Bangladesh.

Joy Bangla, Joy Bangabandhu.

Long live Bangladesh.

Mohammed Nasim, MP



Honorable State Minister

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



Message

It's my pleasure to know that Health Bulletin 2017 is coming out on time. This flagship publication of the Directorate General of Health Services (DGHS)) always highlights the current picture of the healthcare situations in the country and guides us to identify areas of concern in the near future because I firmly believe this volume provides the most authentic data on health issues.

I would like to thank Prof Dr. Abul Kalam Azad, Director General of the DGHS and his colleagues at the MIS-Health and elsewhere engaged in collecting data from various sources and analyzing those that constitute the heart of the Bulletin. The DGHS in general and MIS-Health in particular have contributed much in creating success stories in the health sector that have earned international recognitions in the recent past. I like to thank the health service providers at all levels, who are working together to ensure healthcare for all in the country.

The 4th sector-wide program HPNSP has been initiated this year. Achieving the targets of the health-related Sustainable Development Goals (SDGs) within 2030 is seen as both an opportunity and a challenge for us. I am happy that the Government of Bangladesh is investing their best effort in the health sector. As a result, we are setting milestones in many aspects of the health sector. Without having authentic data, we cannot visualize the actual condition of our health services and the people's need for healthcare. It is really encouraging that MIS-Health has the appropriate software that made our monitoring and scoring process easier. Health Bulletin 2017 is expected to warrant the authenticity of data for us to know not only the flaws but also our glorious achievements. I congratulate MIS-Health and would like to have many more innovative ideas in future.

Health Bulletin 2017 is the result of relentless efforts of all personnel of the MIS-Health and beyond. I am thankful to all of them.

Joy Bangla, Joy Bangabandhu.

Zahid Maleque, MP



Secretary

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



Message

Health Bulletin, an annual publication of the Management Information System of the Directorate General of Health Services appears as a reflection of our achievements and actual scenario of our health status and services. I would like to congratulate MIS-Health for publishing Health Bulletin 2017 on time.

Achieving the targets of health-related Sustainable Development Goals (SDGs) by 2030 is of prime concern in the coming days. The DGHS personnel at the national level, all stakeholders, and health service providers even at the grassroots level are working relentlessly to optimize health service for all.

Already the 4th sector-wide program HPNSP is initiated this year for facilitating the progress. Compiling data from all the concerned health institutions and visualizing our health scenario is a binding condition for policy-making as well as setting goals and priorities. The MIS-Health of the DGHS has always been a contributor to this, and Health Bulletin continues to be a bright example of their accomplishments.

I would like to extend my special thanks to Director General Professor Dr. Abul Kalam Azad and his staff at the DGHS whose noteworthy achievements in the digitalization process have harvested international recognitions.

I am assertive that information contained in this publication will be recompensing and will enable us to achieve a better and more sustainable development in Bangladesh.

Md. Serajul Huq Khan



Secretary in Charge

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



Message

Health Bulletin published by the Management Information System (MIS) of the DGHS has always been a vital and representative source of information on current healthcare situation in Bangladesh. The country has shown tremendous prosperity in the health sector. Initiation of the 4th sector-wide program and individualization of divisions in the Ministry of Health and Family Welfare have added newer dimensions. We look forward to achieving the targets of health-related Sustainable Development Goals (SDGs) within 2030. I believe, through Health Bulletin 2017, we will be able to identify all inadequacies and epitomize our success stories as well.

The Management Information System of the DGHS is endlessly working on digitization of health system, data collection, storing, and analysis. We hope to do more exemplifying work in future, and the other concerned departments will assist MIS-Health to continue this successive journey as always.

I would like to thank Professor Dr. Abul Kalam Azad and his staff at the DGHS for the remarkable achievements and the contributors behind publication of this bulletin. I am sure the information contained in this bulletin will help us in decision-making to prioritize health issues that deserve our special attention.

Faiz Ahmed



Director General

Directorate General of Health Services

Mohakhali, Dhaka



Message

For several years, I had the privilege to work as Chief Editor of the Health Bulletin during my tenure as Director (MIS) of the Directorate General of Health Services (DGHS). Now, for a higher responsibility as Director General, I may not be directly associated with its editing and production. However, I have suggested the production team to reorganize the contents for brevity since the volume has been steadily increasing for newer inputs over time.

I am happy to know that the Editorial Board has been reorganized by involving more personnel, in addition to the existing workforce that I tried to develop over the years. I hope this restructuring will yield positive results in terms of quality and timely production of this publication. Health Bulletin has always been appreciated by policy-makers, development partners, media personnel, and other instrumental readers, for highlighting our achievements in the health sector.

Despite having limited resources, Bangladesh has created great success stories that have been recognized worldwide. We have shown tremendous successes in achieving the targets of MDGs. In this new era of the Sustainable Development Goals (SDGs), we have to achieve our targets within 2030. The DGHS is working relentlessly towards this end and already we are on track to accelerate the efforts. The 4th sector-wide Health, Population and Nutrition Program 2017-2022 has already started its journey. All concerned bodies of the Government, NGOs, CBOs, the private sector, and civil society are working hand-to-hand for ensuring healthcare for all. I truly believe only properly-documented data can help us identify our shortcomings, set priorities, and decide what are needed to be done for further improvements. It is expected Health Bulletin 2017 will be an authentic source of such data.

I am grateful to Hon'ble Minister, Hon'ble State Minister, and the Secretaries of the Ministry of Health and Family Welfare for their cooperation in all of our activities, including publication of this bulletin. The personnel in the publication team deserve special thanks for their hard work towards timely production of the Bulletin under the leadership of Dr. Ashish Kumar Saha, the new Director of MIS-Health.

I am also thankful to those who contributed by sending their data and to the MIS personnel who analyzed those for inclusion in the Bulletin.

Thoughtful and constructive suggestions from the readers will help us improve both contents and quality of the Bulletin in future.

Professor Dr. Abul Kalam Azad



Director (MIS)

Directorate General of Health Services
Mohakhali, Dhaka



Editor's Preface

In Health Bulletin 2017, we tried to balance the chapters that reflected the startling progress of health delivery system of the Government of Bangladesh. Our current successful Director General Professor Dr. Abul Kalam Azad supervised editing and publication of Health Bulletin for several years during his tenure as Director (MIS). With his experienced direction, a new set of enthusiastic workforce in my team could finally bring the valuable document into limelight after I took my charge as Director (MIS) this year as well as the Chief Editor of the Bulletin.

The Bulletin focuses on our activities under the leadership of our Hon'ble Minister, Ministry of Health and Family Welfare Mohammed Nasim, MP, with cooperation and support of our Hon'ble State Minister, the full time supportive Secretaries and a whole-heartedly dynamic Director General of Health Services. The visionary leadership of Hon'ble Prime Minister Sheikh Hasina is our guiding force for attaining the SDGs approaching towards achieving the digitalized and updated health sector in Bangladesh. A revolutionary step of this government was to take health services at the doorsteps of the mass people and improve access to healthcare, with an aim to achieve universal healthcare coverage; thousands of community clinics have been set up that are imparting online grassroots-level data. We have collected all the primary, secondary and tertiary-level data that are highlighted in the Bulletin.

This year, we have consulted experts of WHO Bangladesh Office for re-organizing contents in the Bulletin that may be visible to the instrumental readers. The number of chapters has been reduced to 12 from 18 and segregated into 3 sections. Inga Williams, Monitoring and Reporting Officer from WHO Country Office Bangladesh provided us support to modify previous version in the new shape. All chapters were written aiming towards a single concept, 'Service Delivery'. This concept was drawn from the 'six building blocks of health systems' of WHO, namely Service Delivery, Health Workforce, Health Information System, Access to Essential Medicines, Financing Healthcare, and Leadership and Governance.

This time we incorporated a new chapter on success stories of our clinicians, including treatment of some rare diseases in the world.

I am thankful to the personnel who have collected, compiled, and analyzed all the data and reviewed all the chapters and also grateful to the WHO Country Office Bangladesh for their valuable suggestions, especially about rearranging the chapters. Thanks to the respective departments of the DGHS and other sectors for timely sending their data. I strongly believe and hope that the bulletin will help our policy-makers, donor partners, NGOs, INGOs, health service providers, and other stakeholders to make decisions for improving healthcare services of Bangladesh.

Constructive criticisms and suggestions are welcome to improve this publication in coming years.

Dr. Ashish Kumar Saha

ACRONYMS

ACSM	Advocacy, Communication, and Social Mobilization	BNSB	Bangladesh National Society of Blind
ACT	Artemisinin-based Combination Therapy	bOPV	bivalent Oral Polio Vaccine
ADB	Asian Development Bank	BOR	Bed-occupancy Ratio/Rate
ADP	Annual Development Program	BPL	Below Poverty-Line
AEFI	Adverse Events Following Immunization	BRAC	Bangladesh Rural Advancement Committee
AeHIN	Asian eHealth Information Network	BRIS	Birth Registration Information System
AFP	Acute Flaccid Paralysis	BRN	Birth Registration Number
AHI	Assistant Health Inspector	BSL	Biosafety Level
A2i	Access to information	BSMMU	Bangabandhu Sheikh Mujib Medical University
AIDS	Acquired Immunodeficiency Syndrome	BST	British Summer Time
ALOS	Average Length of Stay	BUET	Bangladesh University of Engineering and Technology
AMC	Alternative Medical Care		
AMR	Antimicrobial resistance	CBE	Clinical Breast Examination
ANC	Antenatal Care	CBHC	Community-based Healthcare
API	Annual Parasite Incidence/Application Programming Interfaces	CC	Community Clinic
APIR	Annual Program Implementation Report	CDC	Communicable Disease Control
APR	Annual Program Review	CDD	Control of Diarrheal Diseases
ARC	American Red Crescent/Antimicrobial Resistance Containment	CEmOC	Comprehensive Emergency Obstetric Care
ARI	Acute Respiratory Infection	CES	Coverage Evaluation Survey
ART	Antiretroviral Treatment/Antiretroviral Therapy	CFR	Case-fatality Rate
ASD	Autism Spectrum Disorder	CG	Community Group
ASP	AIDS/STD Program	CHCP	Community Healthcare Provider
		CHT	Chittagong Hill Tracts
BBS	Bangladesh Bureau of Statistics	CHW	Community Health Worker
BCC	Behavior Change Communication	CIDD	Control of Iodine Deficiency Disorder
BCG	Bacillus Calmette–Guérin	CIN	Cervical Intra-epithelial Neoplasia
BCPS	Bangladesh College of Physicians and Surgeons	CMBT	Center for Medical Biotechnology
BCS	Bangladesh Civil Service	CPR	Contraceptive Prevalence Rate
BDHS	Bangladesh Demographic and Health Survey	CR	Civil Registration
BDT	Bangladeshi Taka	CRPD	Convention on the Rights of Persons with Disabilities
BEOC	Basic Emergency Obstetric Care	CRVS	Civil Registration and Vital Statistics
BHFS	Bangladesh Health Workforce Survey	CS	Civil Surgeon
BITID	Bangladesh Institute of Tropical and Infectious Disease	CSBA	Community-based Skilled Birth Attendant
BMDC	Bangladesh Medical and Dental Council	CSG	Community Support Group
BMRC	Bangladesh Medical Research Council	CSO	Civil Society Organization
BNC	Bangladesh Nursing Council	Dev.	Development
BNHA	Bangladesh National Health Accounts	D4D	Data for Decision
BIRDEM	Bangladesh Institute of Research and Rehabilitation for Diabetes, Endocrine and Metabolic Disorders	DF/DHF	Dengue Fever/Dengue Hemorrhagic Fever
		DGDA	Directorate General of Drug Administration
BNNC	Bangladesh National Nutrition Council	DGFP	Directorate General of Family Planning
		DGHEU	Directorate General of Health Economics Unit
		DGHS	Directorate General of Health Services
		DGNM	Directorate General of Nursing and Midwifery

DHIS2	District Health Information System software version 2	GPS	Global Positioning System
DHS	Demographic Health Survey	GR	Geographical Reconnaissance
DICs	Drop-in-Centers	HA	Health Assistant
DLI	Disbursement Link Indicator	HAV	Hepatitis A Virus
DMCH	Dhaka Medical College Hospital	HBV	Hepatitis B Virus
DNA	Deoxyribonucleic Acid	HCV	Hepatitis C Virus
DNCC	Dhaka North City Corporation	HDI	Human Development Index
DOTs	Directly-observed Treatment-Short Course	HEU	Health Economics Unit
DPA	Direct Project Aid	HI	Health Inspector
DR	Disaster Recovery	HIS	Health Information System
DRPCC	District Rabies Prevention and Control Center	HISP,Bd	Health Information System Program, Bangladesh
DSCC	Dhaka South City Corporation	HIV	Human Immunodeficiency Virus
DSF	Demand-side Financing	HMIS	Health Management Information System
EA	Enterprise Architecture	HNP	Health and Nutrition Program
ECNEC	Executive Committee of National Economic Council	HNPSIP	Health, Nutrition and Population Strategic Investment Plan
EOC	Emergency Obstetric Care	HPNSDP	Health, Population and Nutrition Sector Development Program
EPI CES	Expanded Program on Immunization, Coverage Evaluation Survey	HPNSP	Health, Nutrition and Population Sector Program
ERD	Economic Relations Division	HPSP	Health and Population Sector Plan
ERP	Emergency Response Preparedness	HR	Human Resource
ESD	Essential Service Delivery	HRH	Human Resource for Health
ETL	Extract Transform-Load	HRIS	Health Resource Information System
FAO	Food and Agriculture Organization	HRM	Human Resource Management
FBIS	Foodborne Illness Surveillance	HWF	Health Workforce
FCPS	Fellow of College of Physicians and Surgeons	IAEG-SDGs	Inter-agency and Expert Group on SDG Indicator
FCTC	Framework Convention on Tobacco Control	ICD-10	International Statistical Classification of Disease
FD	Finance Division	ICT	Information and Communication Technology
FETPB	Field Epidemiology Training Program, Bangladesh	ICU	Intensive Care Unit
FP	Family Planning	ideSHi	Institute of developing Science and Health initiatives
FPI	Family Planning Inspector	IEDCR	Institute of Epidemiology, Disease Control and Research
FSW	Female Sex Worker	IHR	International Health Regulations
FWA	Family Welfare Assistant	IHT	Institute of Health Technology
FWV	Female Welfare Visitor	IMCI	Integrated Management of Childhood Illness
FY	Fiscal Year	IMPACT	Improving Public Health Management for Action
FYP	Five-year Plan	INFOSAN	International Network of Food Safety Authority
GAVI	Global Alliance for Vaccines and Immunization	IPGMR	Institute of Postgraduate Medicine and Research
GBS	Guillain-Barre Syndrome	IPH	Institute of Public Health
GDD	Global Disease Detection	IPHN	Institute of Public Health Nutrition
GDP	Gross Domestic Product	IPV	Inactivated Polio Virus Vaccine
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria	ISDP	Integrated Service Delivery Platform
GHS	Global Health Security	ISP	Internet Service Provider
GHSA	Global Health Security Agenda	IT	Information Technology
GNI	Gross National Index		
GOARN	Global Outbreak Alert and Response Network		
GOB	Government of Bangladesh		

IV	Intravenous Fluid	NCD	Non-communicable Disease
IVM	Integrated Vector Management	NFC	National Fistula Center
		NFM	New Funding Model
JEE	Joint External Evaluation	NHA	National Health Accounts
		NIC	National Influenza Center
KA	Kala-azar	NID	National ID/National Immunization Day
KSM	Kala-azar Search Volunteer		
		NINH	National Institute of Neurology & Hospital
LAN	Local Area Networking		
LD	Line Director	NINS	National Institute of Neurosciences & Hospital
LEEP	Loop Electrosurgical Excision Procedure		
		NIO	National Institute of Ophthalmology
LF	Lymphatic Filariasis	NIPORT	National Institute of Population Research and Training
LG	Local Government		
LHB	Local Health Bulletin	NIPSOM	National Institute of Preventive and Social Medicine
M&E	Monitoring & Evaluation	NISB	National Influenza Surveillance, Bangladesh
MARP	Most-at-risk Population		
MAT	Medical Assistance Training	NTOR	National Institute of Traumatology and Orthopedics Rehabilitation
MATS	Medical Assistant Training School		
MBBS	Bachelor of Medicine, Bachelor of Surgery	NKEP	National Kala-azar Elimination Program
MBDC	Mycobacterium Disease Control	NLEP	National Leprosy Elimination Program
MBT	Medical Biotechnology	nm	Nautical Mile
MCCoD	Medically Certified Cause of Death	NMCP	National Malaria Control Program
MCH	Medical College Hospital	NMSS	National Micronutrients Status Survey
MCV1	Measles Coverage Vaccine first dose	NNP	National Nutrition Program
MCWCs	Maternal and Child Welfare Centers	NNS	National Nutrition Services
MDA	Mass Drug Administration	NPAN2	Second National Plan of Action for Nutrition
MDGs	Millennium Development Goals		
MDR	Multi-drug Resistance	NRPCC	National Rabies Prevention and Control Center
MDT	Multi-drug Therapy		
MDV	Mass Dog Vaccination	NSC	National Steering Committee
MIS	Management Information System	NSP	National Strategic Plan
MMR	Maternal Mortality Ratio	NTBB	National Taskforce on Biotechnology of Bangladesh
MNCAH	Maternal, Neonatal, Child, and Adolescent Health		
		NTC	National Technical Committee
MNHI	Maternal and Newborn Health Initiative	NTDs	Neglected Tropical Diseases
		NTP	National TB Program
MOCHTA	Ministry of Chittagong Hill Tracts Affairs	NTRL	National TB Reference Laboratory
		NTV	Nerve Tissue Vaccine
MOHA	Ministry of Home Affairs	NTWG	National Technical Working Group
MOHFW	Ministry of Health and Family Welfare		
MOLGRD	Ministry of Local Government, Rural Development and Cooperatives	OIE	World Organization for Animal Health
		OMR	Optical Mark Recognition
MPDSR	Maternal and Perinatal Death Surveillance and Response	OP	Operational Plan
		OPD	Outpatient Department
MR	Measles Rubella Vaccine	OPV	Oral Polio Vaccine
MRI	Magnetic Resonance Imaging	ORG	Office of Registrar General
MRS	Medical Record System	ORS	Oral Rehydration Salt
MSD	Measles Second Dose	ORT	Oral Rehydration Therapy
MSM	Men having Sex with Men	OT	Operation Theater
MSW	Male Sex Worker		
MTR	Mid-term Review		
		PA	Project Aid
NAC	National AIDS Committee	PCR	Polymerase Chain Reaction
NASP	National AIDS and STD Program	PDAs	Personal Digital Assistant

PEP	Post-exposure Prophylaxis	SSK	Shasthyo Surokhsha Karmasuchi
Pf	Plasmodium falciparum	STD	Sexually Transmitted Disease
PH	Public Health	STH	Soil-transmitted Helminthes
PHC	Primary Healthcare	SVRS	Sample Vital Registration System
PHEIC	Public Health Emergency for International Concern	SWAp	Sector-wide Approach
PKDL	Post Kala-azar Dermal Leishmaniasis	TAS	Transmission Assessment Survey
PLHIV	People living with HIV	TAST	Technical Assistance Support Team
PMIS	Personnel Management Information System	TB	Tuberculosis
PMMU	Program Management & Monitoring Unit	TCV	Time, Cost, and Visit
PMO	Prime Minister's Office	TCV	Tissue Culture Vaccine
PNC	Postnatal Care	TEMO	Transport & Equipment Maintenance Unit
PoE	Point of Entry	TFR	Total Fertility Rate
PRS	Population Registration System	THE	Total Health Expenditure
PRSP	Poverty Reduction Strategy Paper	tOPV	trivalent Oral Polio Vaccine
PS&	Planning, Supply and ownership management program	TT	Tetanus Toxoid
PSM	Preventive and Social Medicine	TTGA	Taurocholate-tellurite-gelatin Agar
PSTN	Public Switched Telephone Network	TTI	Transfusion-transmitted Infection
PWID	People Who Inject Drugs	TTU	Technical Training Unit
RADP	Revised Annual Development Program	UAT	User Acceptance Test
RBC	Red Blood Cell	UESDS	Utilization of Essential Service Delivery Survey
RCHCIB	Revitalization of Community Healthcare Initiative in Bangladesh	UH&FPO	Upazila Health and Family Planning Officer
RDU	Research and Development Unit	UHC	Universal Health Coverage/Upazila Health Complex
REP	Rabies Elimination Program	UHFWC	Union Health and Family Welfare Center
Rev.	Revenue	UN	United Nations
RHC	Rural Health Center	UNAIDS	Joint United Nations Program on HIV/AIDS
RHIS	Routine Health Information System	UNDP	United Nations Development Program
RIG	Rabies Immunoglobulin	UNFPA	United Nations Population Fund
RMCS	Revised Malaria Control Strategies	UNGASS	United Nations General Assembly Special Session
RPA	Reimbursable Project Aid	UNICEF	United Nations Children's Fund
RRT	Rapid Response Team	UPHCP	Urban Primary Healthcare Project
rRT-PCR	Real-time Reverse Transcription (RRT)-Polymerase Chain Reaction	USC	Union Subcenter
RT-PCR	Reverse Transcription Polymerase Chain Reaction	USD	United States Dollar
RTRL	Regional TB Reference Laboratory	USG	Ultrasonography
SACMO	Sub-Assistant Community Medical Officer	USI	Universal Salt Iodization
SAP	Strategic Action Plan	VA	Verbal Autopsy
SBA	Skilled Birth Attendant	VAC	Vitamin A Capsule
SBTP	Safe Blood Transfusion Program	VAD	Vitamin A Deficiency
SCAPAND	Strategic and Convergent Action Plan on Autism and Neurodevelopment Disabilities	VIA	Visual Inspection with Acetic Acid
SDGs	Sustainable Development Goals	WASH	Water, Sanitation and Hygiene
SEARO	Southeast Asian Regional Office	WAZ	Weight-for-age z-score
SHR	Shared Health Record	WB	World Bank
SKKRC	Surya Kanta Kala-azar Research Center	WBC	White Blood Cell
SMoL	Start-up Mortality List	WCBA	Women of Childbearing Age
SOP	Standard Operating Procedure	WHO	World Health Organization
		WiMAX	Worldwide Inter-operability for Microwave Access

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SECTION A

Background and Introduction

Chapter 1: | Bangladesh: Country Profile with Health Indicators

Chapter 2: | Healthcare Network in Bangladesh

Chapter 3: | Health-related Sustainable Development Goals

CHAPTER 1

BANGLADESH

Country Profile with Health Indicators

Despite high population density and limited resources, Bangladesh is on track for a good economic growth with a unique progress in health and nutritional indicators compared to neighboring countries due to good leadership and governance.

History

Under the leadership of Bangabandhu Sheikh Mujibur Rahman, Bangladesh emerged as a sovereign nation on 16 December 1971 through a glorious victory in the War of Liberation. Before that Bangladesh was a province of Pakistan and used to be called East Pakistan. After the fall of Nawab Sirajuddowla in the Battle of Plassey on 23 June 1757, this wealthy part of the Indian Subcontinent was ruled by the British from 1757 to 1947. In 1947, the British colonial rule ended, and the Indian Subcontinent was divided into two independent nations—India and Pakistan. Profound disparities in governance between East and West Pakistan led to the craving for independence among the East Pakistanis. The unique Language Movement of 1952 and a series of mass upsurge at various times during the 1960s and early 1970s led to the War of Liberation.

Geographical location

Bangladesh has a total land area of 147,570 square kilometers (56,977 square miles). The country borders India on three sides with the Indian states of West Bengal, Tripura, Assam, and Meghalaya. Only a small strip in the southeast shares a border with Myanmar. The Bay of Bengal lies to the south. Bangladesh comprises primarily floodplains, with scattered hills in the eastern and northern parts. Large rivers and an intricate web of canals and rivers form this Ganges Delta, the largest delta in the world.

Climate

Bangladesh is a tropical country with a hot and rainy summer (March to June), a warm and rainy monsoon (June to October), and a mild dry winter (November to March). January is the coldest month, with an average

temperature of 26°C (78.8°F). April is the hottest month, with temperatures ranging from 33°C to 36°C (91.4°F to 96.8°F). Major part of Bangladesh receives more than 1,525 mm of rainfall a year, with areas near the hills receiving more than 5,000 mm, primarily during the monsoon (June-September). The humidity varies from 36% to 99% and is the highest during the monsoon and the lowest in the winter.

Religion and culture

Majority (approx. 89%) of the population is Muslim. Hindus, Buddhists, and Christians comprise 9.6%, 0.6%, and 0.3% of the population respectively. Over 98% of the people speak Bangla. English is also widely spoken. Bangladesh's rich cultural traditions are displayed in archaeological sites, sculptures, terracotta, architecture, museums, archives, libraries, classical music, dance, paintings, dramas, folk arts, festivals, and ethnic cultural activities.

Population and demography

Bangladesh Bureau of Statistics (BBS) conducted the national population census in 2011 and, according to the census, total population of Bangladesh was 149,772,364 on 15 March 2011. According to the SVRS 2016, the estimated population on 1 July 2016 was 160.8 million, with a density of 1,090 per square kilometer and, on 1 January 2017, the estimated population was 161.75 million. Bangladesh is now going through a demographic transition, and the proportion of the population in the agile labor force (15–59 years age-group) has increased. The steady economic growth even during spells of global recessions indicates that the hard-working people of Bangladesh are efficiently taking advantages of the demographic dividend. Although the majority of people still live in rural areas, the urban population is rapidly growing. According to a UN study (World Urbanization Prospects: 2014 Revision), the majority of citizens will be urban-dwellers by the year 2039.

Figure 1. Map of Bangladesh showing administrative divisions



Governance

Bangladesh has a parliamentary form of government. President is the head of the State, and Prime Minister is the head of the Government. The National Parliament is called *Bangladesh Jatiya Sangsad*. Each ministry is headed by a minister, with a secretary to head the bureaucrats. Some ministries are divided into functional divisions. The Ministry of Health and Family Welfare is one of the largest ministries of the Government of Bangladesh. Recently, the Ministry of Health and Family Welfare has been divided into two divisions, namely Health Services Division and Medical Education and Family Welfare Division.

Currently, the country is divided into 8 administrative divisions. Each division is divided into several districts; each district is subdivided into several upazilas (subdistricts), and each upazila into several unions (Table 1). Each union is further subdivided into nine wards; finally, the ward is divided into several villages; the approximate number of villages is 87,310. However, ward is the lowest administrative unit of the local government,

Table 1. Number of districts, upazilas, and unions under 8 divisions of Bangladesh with area, estimated mid-year population of 2016, and population density in each of the divisions

Administrative unit				Area (sq. km) ¹	2016 Population ²	Population density (per sq. km)
Division	District (No.)	Upazila (No.)	Union (No.)			
Barisal	6	42	333	13,225.20	9,145,000	691
Chittagong	11	100	339	33,908.55	31,980,000	943
Dhaka	13	89	1,833	20,593.74	40,171,000	1,951
Khulna	10	59	270	22,284.22	17,252,000	774
Mymensingh	4	35	350	10,584.06	12,368,000	1,169
Rajshahi	8	68	558	18,153.08	20,412,000	1,124
Rangpur	8	58	536	16,184.99	17,602,000	1,088
Sylhet	4	39	334	12,635.22	11,291,000	894
Total	64	490	4553	147,569.06	160,221,000	-

¹Population and housing census 2011, BBS

²Projected population scenario as described in “Population Projection of Bangladesh: Dynamics and Trends 2011-2061”, BBS

having at least one representative elected for 5 years by popular vote. The city corporations and municipalities are designated as urban areas, with 12 city corporations and 324 municipalities across the country.

Economy

The agrarian sector still dominates the country's economy, accounting for majority of the rural labor force. The principal industries of the country include readymade garments, textiles, chemical fertilizers, pharmaceuticals, tea-processing, sugar, and leather goods. The principal minerals include natural gas, oil, coal, white clay, and glass-sand. Bangladesh has been utilizing a mixed system of public and private development, which operates on free-market principles. Despite high population density and limited resources, Bangladesh is on track for a good economic growth with a unique progress in health and nutritional indicators compared to neighboring countries due to good leadership and governance.

According to a BBS publication (National Account Statistics published on May 2016), the provisional estimates of GDP for FY 2016 indicate an expansion of the economy, with

a growth of 7.05% in real term compared to 6.55% in FY 2015. The per-capita GDP and GNI for FY 2016 were estimated to be BDT 108,172 (USD 1,384) and BDT 114,547 (USD 1,466) respectively at current prices. At constant prices (2005-2006), the per-capita GDP and GNI for FY 2016 were estimated to be BDT 55,229 and BDT 58,484 respectively. GDP at current market prices was provisionally estimated to be BDT 17,296 billion which is about 14.10% higher than that of FY 2015. GDP at constant market prices was provisionally estimated to be BDT 8,831 billion.

Some Basic Information and Data on Bangladesh

[See List of Acronyms for the abbreviations]

Geography

Location: Latitude between 20°34' and 26°38' North, Longitude between 88°01' and 92°41' East

Boundary: North and West: India; South: Bay of Bengal; East: India and Myanmar

Border: 4,246 km, Coastline: 580 km

Area: 147,570 sq. km (56,977 sq. miles), Land: 133,910 sq.km, Water: 10,090 sq.km

Maritime boundary: Contiguous zone: 18 nm; Economic zone: 200 nm; Territorial sea: 12 nm

Average Temperature: Winter: 11°C-20°C; Summer: 21°C-38°C

Rainfall: 1,100 mm to 3,400 mm (June-August); Average: 203 mm/month

Humidity: Highest: 99% (July); Lowest: 36% (December-January)

Standard time: BST (GMT+ 6 hours)

Administrative units

Division	: 8
City Corporation	: 12
Metropolitan city	: 4
Municipality	: 324
District	: 64
Upazila	: 490
Union	: 4,553
Ward	: 40,977
Village (approx.)	: 87,310

Demography

(SVRS, 2016)

Population

Estimated population on 1 July 2016: 160.8 million

Estimated population on 1 January 2017: 161.75 million

Population in 2016: 160.221 million (Projected population in scenario I and II as described in "Population Projection of Bangladesh, Dynamics and Trends:, 2011-2061", BBS, available at www.bbs.gov.bd)

Population density (per sq. km):1,090;
Inland area 1,236.811 sq. km

Population growth rate: 1.37%

Sex ratio (M/F): 100.3/100.0

Population by broad age-group in percentages:

Age-group (years)	Both sexes	Male	Female
00-14	30.8	30.9	30.7
15-49	53.6	52.8	54.5
50-59	8.1	8.2	7.9
60+	7.5	8.1	6.9

Dependency ratio (percentage):

Total 54; Rural 58; Urban 49

Child-woman ratio (per 1,000 women of 15-49 years): Total 320; Rural 347; Urban 289

Crude birth rate (per 1,000 population):

Total 18.7; Rural 20.9; Urban 16.1

Total fertility rate (per woman of 15-49 years):

Total 2.10; Rural 2.38; Urban 1.68

Age-specific fertility rate (per 1,000 women of reproductive age):

Age-group (years)	Rate
15-19	78
20-24	132
25-29	107
30-34	58
35-39	26
40-44	7
45-49	3

General fertility rate:Total 69; Rural 79; Urban 57

Net reproduction rate (per woman of 15-49 years): Total 1.00; Rural 1.10; Urban 0.80

Crude marriage rate (per 1,000 population): Total 14.3; Rural 17.7; Urban 10.1

Mean age at marriage (years):

Area	Male	Female
Total	26.3	18.8
Rural	25.8	18.3
Urban	27.4	19.9

Economy

Per-capita GDP at current market prices (in USD): 1,384 (2015-2016P); Growth rate of GDP at constant prices (percentage): 7.05 (2015-2016P) (BBS, May 2016)

Principal crops: Rice, jute, tea, wheat, sugarcane, pulses, mustard, potato, vegetables

Principal industries: Garments and textiles (2nd largest in the world), tea, ceramics, cement, leather, jute (largest producer in the world), chemicals, fertilizers, shrimp cultivation and processing, sugar, paper, electric and electronics, medicines, fishing

Principal exports: Garments, knitwear, frozen shrimps, tea, leather and leather products, jute and jute products, ceramics, IT outsourcing, etc.

Principal imports: Wheat, fertilizers, petroleum goods, cotton, edible oil, etc.

Principal minerals: Natural gas, oil, coal, white clay, glass-sand, etc.

Household characteristics and utilities

(SVRS, 2016)

Household-size (no. of persons): 4.3;
Male-headed 87.2; Female-headed 12.8

Water and sanitation (% households);

Drinking-water: access to tap and tubewell water 98.0

Toilet facility: Sanitary 75.0; Others 22.3; Open defecation 2.7

Source of light (% households):

Source	Total	Rural	Urban
Kerosene	13.0	18.9	5.8
Electricity	81.2	71.4	93.0
Solar	5.6	9.5	1.0
Others	0.2	0.2	0.2

Information technology

(BTRC, February 2017)

Internet subscribers: Total 67.245 million

Mobile Internet 63.120 million

WiMAX 0.089 million

ISP+PSTN 4.036 million

Mobile phone users: Total 129.584 million

Literacy

(SVRS, 2016)

Literacy rate of population 7+ years (percent):
Both sexes 71.0; Female 68.9; Male 73.0

Adult literacy rate of population 15+years
(percentage): Both sexes 72.3; Female 69.5;
Male 75.2

Health services and medical education

(DGHS, 2016)

Total number of government hospitals under the DGHS: 607

Government hospitals of secondary and tertiary levels under the DGHS: 130

Government hospitals under the DGHS at the upazila and union levels: 477

No. of private registered hospitals and clinics under the DGHS: 5,023

No. of private registered diagnostic centers under the DGHS: 10,675

No. of hospital beds under the DGHS: 49,414

No. of hospital beds in the private-sector (in private hospitals registered by the DGHS): 87,610

Total no. of beds in the DGHS-run hospitals and registered private hospitals: 137,024

Population per hospital bed: 1,169 (total beds in the DGHS-run public and registered private hospitals in 2016 against projected mid-year population of 2016 as estimated by BBS)

Teaching/training institutions for healthcare (August 2017)

No. of postgraduate medical teaching institutions: Total 29; Government 20; Private 9

No. of medical colleges: Total 100; Government 31; Private 69

No. of dental colleges: Total 35; Government 9; Private 26

No. of nursing colleges offering basic BSc Nursing Course: Total 60; Government 15; Private 45

No. of nursing colleges offering post-basic BSc Nursing Course: Total 41; Government 4; Private 37

No. of medical assistant training schools: Total 208; Government 8; Private 200

No. of institutes of health technology (IHT): Total 105; Government: 8; Private: 97

Available seats for medical students

Postgraduate medical degree (MD, MS, Diploma, M Phil, etc.): Total 1,751; Government 1,550; Private 201

(Fellowships/memberships offered by BCPS do not have any fixed number)

MBBS: Total 9,525; Government 3,320; Private 6,205

BDS: Total 1,932; Government 532; Private 1,400

Bachelor of Unani and Ayurvedic Medicine: 50

Bachelor of Homeopathic Medicine: Government 50; Private 100

Medical assistants: Total 13,540; Government 716; Private 12,824

Medical technologists: Total 11,216; Government 2,276; Private 8,940

Health status

Coverage of vitamin A capsule

(EPI CES, 2016)

Vitamin A coverage: Infant (6-11 months) 86.1%; Children (12-59 months) 91.3%; Postpartum women 37.8%

Family planning

Contraceptive prevalence rate (%): 62.3 (SVRS, 2016)

Contraceptive prevalence rate (modern methods) in %: 58.4 (SVRS, 2016)

Unmet need for family planning (%): 12.0 (BDHS, 2014)

HIV/AIDS

(ASP, 2017)

Antiretroviral treatment (ART) coverage among adults needing ART in 2016: 44.5%

HIV prevalence among key populations in 2016: Less than 1%

Knowledge of all modes of transmission of HIV/AIDS among population (%) in 2016: 59

Knowledge of at least one mode of transmission of HIV/AIDS among population (%) in 2016: 61

New HIV infection reported in 2016: 578

Number of ART recipients in 2016: 1,881; up to October 2017: 2,483

People living with HIV (PLHIV) in 2016: 4,721

Immunization (valid vaccination coverage)

(EPI-CES, 2016)

≤12 months old children: BCG 99.5%; OPV1 97.8%; OPV2 97.0%; OPV3 90.1%;

Penta1 97.8%; Penta2 97.0%; Penta3 90.1%; MR1 87.5%; Full vaccination 82.3%

≤23 months old children: BCG 99.5%; OPV1 97.9%; OPV2 97.2%; OPV3 90.4%; Penta1 97.9%; Penta2 97.2%; Penta3 90.4%; MR1 92.3%; Full vaccination 86.8%

Tetanus toxoid coverage (%) among women of childbearing age

(EPI-CES, 2016)

TT1 98.2%; TT2 96.8%; TT3 89.2%; TT4 73.2%; TT5 52.3%

Life-expectancy at birth (years)

(SVRS, 2016)

Both sexes 71.6; Female 72.9; Male 70.3

Malaria

Malaria-positive cases/1,000 population (in endemic areas): 1.58 (in 2016; NMCP, 2017)

Malarial mortality/100,000 population (in endemic areas): 0.0009 (in 2016; NMCP 2017)

Maternal and child health, obstetric care

Antenatal care coverage (at least 4 visits) (%): 31 (in 2014; UNICEF February 2016), 31.2 (BDHS, 2014)

Antenatal care coverage (at least one visit by skilled health professional) (%): 63.9 (in 2014, WB, 2016)

Births attended by skilled health personnel (%): 42.1 (BDHS, 2014)

C-section rate (%): 22.9% (BDHS, 2014)

Home delivery rate: 62.2% (BDHS, 2014)

Infant mortality rate (per 1,000 livebirths): 28 (SVRS, 2016); 38 (BDHS, 2014)

Institutional delivery rate (%): Total 37.4%; Public facilities 12.8; Private facilities 22.4; NGO facilities 1.9 (BDHS, 2014)

Maternal mortality ratio (per 100,000 livebirths): 176 (in 2015; WB, 2016); 196 (BMMS, 2016)

Neonatal mortality rate/1,000 livebirths: 19 (SVRS, 2016); 28 (BDHS, 2014)

Under-5 mortality rate (per 1,000 livebirths): 35 (SVRS, 2016); 46 (BDHS, 2014)

Tuberculosis

Cure rate with DOTS (%): 95 (in 2015, NTP 2016)

Death rate/100,000 population: 40 (in 2016, WHO, 2017)

Incidence rate of HIV-positive TB cases/100,000 population: 0.31 (in 2016, WHO, 2017)

Incidence rate of TB (all forms)/100,000 population: 221 (in 2016; WHO, 2017)

Proportion of new TB cases with MDR-TB (%): 1.6 (in 2016, WHO, 2017)

Proportion of retreatment TB cases with MDR-TB (%): 29 (in 2016, WHO, 2017)

Health Indicators

Health workforce

Personnel currently working under different agencies of the MOHFW (No. of sanctioned posts are given in parentheses):

DGHS (August 2017)

No. of personnel: 89,577 (113,891)

No. of doctors: 20,602 (24,990)

No. of medical technologists: Total 5,254 (7,817); Dental: 473 (541); EPI 473 (496); Lab: 1,427 (2,167), Pharmacy 1,609 (2,895); Physiotherapy 108 (296); Radiography 585 (777); Radiotherapy 38 (80); Sanitary inspection 479 (498)

No. of sub-assistant community medical officers (SACMO): 3,886 (5,368)

No. of community healthcare providers (CHCPs) for community clinics: 12,959 (14,890)

No. of domiciliary workers:
Total 20,842 (26,538)

Health inspectors (HI) 996 (1,410);
Assistant health inspectors (AHI): 3,684 (4,220);
Health assistants (HA) 16,162 (20,908)

DGFP (October 2017)

No. of doctors: 727 (1,118)

No. of family planning officers: 375 (485)

No. of assistant family planning officers: 355 (485)

No. of sub-assistant community medical officers (SACMO): 2,307 (2,500)

No. of family welfare visitors (FWV): 4,956 (5,710)

No. of domiciliary workers:
Total 23,545 (28,000)

Family planning inspectors (FPI); 3,962 (4,500);
No. of family welfare assistants (FWA): 19,583 (23,500)

DGNM (2016)

No. of nurses: 27,432 (33,239)

No. of non-nursing officials and staff: 864 (1,144)

Registered professionals

Dental surgeons and physicians (BMDC, 17 December 2017)

No. of registered dental surgeons (BDS or Equivalent): 8,130

No. of registered physicians (MBBS or equivalent): 85,633

Nurses and paramedics (BNC, 30 September 2017)

No. of registered BSc nurses: 6,233

No. of registered diploma nurses: 48,001

No. of registered nurses with Diploma in Cardiac Nursing/Intensive Care Nursing: 225

No. of registered assistant nurses: 2,425

No. of registered family welfare visitors (FWV): 6,699

No. of registered junior midwives: 2,429

No. of registered community skilled birth attendants: 9,052

Population-health workforce ratio DGHS (2016)

The BBS projected 2016-mid-year-population of 160.221 million was considered as the denominator in applicable cases.

Annual number of enrolment in graduate (MBBS) program to produce physicians per 100,000 population: 5.94

Population per registered physician: 1,871

No. of registered physicians per 10,000 population: 5.34

No. of registered nurses per 10,000 population: 2.996

No. of doctors working under MOHFW per 10,000 population: 1.29

No. of nurses working under DGNM per 10,000 population: 1.71

No. of medical technologists working under DGHS per 10,000 population: 0.33

No. of community and domiciliary health workers working under MOHFW per 10,000 people: 2.15

No. of beds in DGHS-run public hospitals per 10,000 population: 2.89

CHAPTER 2

HEALTHCARE NETWORK IN BANGLADESH

Structural changes for better administration

The Government split the Ministry of Health and Family Welfare into two divisions. The new divisions under the ministry are: (i) Health Services Division and (ii) Medical Education and Family Welfare Division.

An intricate web of healthcare network in Bangladesh spreads across the country. With the Ministry of Health and Family Welfare (MOHFW) in the lead, the network comprises implementing authorities, regulatory bodies and healthcare facilities from national to the community level. Along with the public health departments of the Government, various NGOs and private institutions constitute a large segment of this web. The Ministry is responsible for formulating national-level policy, planning, and decision-making. The national-level policies, plans, and decisions in the provision of healthcare and education are translated into actions by various implementing authorities and healthcare delivery systems. The Ministry and its relevant regulatory bodies also have an indirect control over the healthcare systems of the NGOs and the private sector. However, only the organizational structure of the Directorate General of Health Services (DGHS) is described briefly in this chapter.

New administrative structure of the Ministry of Health and Family Welfare

In March 2017, the Government split the Ministry into two divisions. The new divisions under the Ministry are: (i) Health Services Division and (ii) Medical Education and Family Welfare Division. On 16 March 2017, the Cabinet Division issued gazette notifications (SRO No. 61-Law/2017) in this regard. Another gazette notification (SRO No. 62-Law/2017) issued on the same date described the allocations of businesses of the newly-formed divisions of the Ministry. The allocated businesses of the divisions, as described in the gazette, are highlighted below.

A. Health Services Division

1. Policy regarding health-related matters
2. Policy regarding management and maintenance of nursing care
3. Policy regarding health financing

4. Management and development of primary-level hospitals (including medical college hospitals and specialized hospitals), community clinics, and dispensaries
5. Matters relating to construction and maintenance of community clinics and hospitals at the union, upazila, district and divisional levels, medical college hospitals, and specialized hospitals, as and where necessary
6. International aspects of medical facilities and public health, international sanitary regulations, port health, health and medical facilities abroad
7. Standardization and manufacture of biological and pharmaceutical products
8. Control of drugs and maintenance of standards for production, import and export of drugs
9. Control and management of abandoned pharmaceuticals
10. Matters relating to technical assistance for vehicles and medical and surgical equipment
11. Matters relating to registration of private hospitals and clinics, diagnostic and consultation centers
12. Medical and health services, including promotion, preventive, curative and rehabilitative aspects
13. Engagement with national/international associations/bodies in medical and allied fields, such as TB Association, Diabetic Association, Red Crescent Society, Pharmacy Council, Nutrition Council, Dhaka Shishu Hospital, National Medical Institute Hospital, Bangladesh National Society for the Blind (BNSB), and such other bodies
14. Matters relating to: (a) Public health; (b) Adulteration of foodstuff and other goods relating to health; (c) Control of epidemics and prevention of communicable (infectious and contagious) diseases, non-communicable diseases, and quarantine isolation; (d) Standardization and quality control of food, water and other health-related commodities; (e) Prevention of smoke nuisances; (f) Research and education on nutrition and nutritional deficiency-related diseases; (g) Control of milk-food
15. Matters relating to: (a) Primary, secondary and tertiary-level hospitals (medical college hospitals and specialized hospitals), community clinics, and dispensaries; (b) Lunacy and mental deficiency, including places for reception and treatment of lunatic and mentally-deficient people
16. Port and airport health organizations
17. Port quarantine (sea and air), seamen and marine hospitals, hospitals with post-quarantine facilities, and medical examination of seamen
18. Administration of BCS (Health) cadre officers, including those who work in medical colleges, medical college hospitals, and specialized hospitals
19. Malaria Control and Management of National Malaria Control Program
20. Sanitation of hospitals, clinics, diagnostic centers, community clinics, and dispensaries
21. Control of objectionable advertisements relating to drugs, medicines, milk-food and tobacco
22. Administration and control of subordinate offices and organizations under the Division
23. Scientific societies and associations pertaining to subjects dealt with in the Division
24. Resettlement of demobilized medical and auxiliary medical personnel
25. Expanded Program on Immunization (EPI)
26. Medical examination and medical boards for civil services and those paid from defense estimates, except civilian services
27. Concession of medical attendance and treatment for government servants other than (a) those in railway services, (b) those paid from defense services estimates, and (c) officers governed by Medical Attendance Rules

28. Countersigning of medical bills of the persons holding non-profitable offices
 29. Sports and health resorts
 30. Reimbursement of customs duty on gifts of non-consumable medical items received from abroad
 31. Preparation of schemes relating to health and nursing services and their submission to the Prime Minister or the Cabinet through Planning Commission, as and when necessary
 32. Matters relating to properties of the Division
 33. Coordination and evaluation of all executive functions relating to projects and programs
 34. Motivation: (a) Preparation and development of publicity media in relation to public health and awareness; (b) Organization of publicity work at the national and social levels; (c) Educational campaign on these matters through Health Education Bureau
 35. Administration of the Directorate General of Health Services (DGHS), Directorate General of Drug Administration (DGDA), Directorate General of Nursing and Midwifery (DGNM), Health Engineering Department (HED), Health Economics Unit (HEU), National Electro-medical Equipment Maintenance Workshop and Training Center (NEMEW & TC) and Transport Equipment Maintenance Organization (TEMO) personnel
 36. Secretariat administration, including financial matters
 37. Administration and control of subordinate offices and organizations under the Division
 38. Post-mortem examination of dead bodies and all matters relating to administration of morgues
 39. Liaison with international organizations and matters relating to treaties and agreements with other countries and world bodies relating to subjects allotted to the Division
 40. All laws on subjects allotted to the Division
 41. Inquiries and statistics on any of the subjects allotted to the Division
 42. Fees in respect of any of the subjects allotted to the Division, except fees taken in courts
- B. Medical Education and Family Welfare Division**
1. Policy regarding family planning matters
 2. Policy regarding medical education
 3. Matters relating to medical colleges and medical universities
 4. Registration of birth and death
 5. Preparation of schemes relating to family planning, medical education (including MATS and IHT), nursing and midwifery education, indigenous education, homeopathic education and their submission to the Prime Minister or the Cabinet through Planning Commission, as and when necessary
 6. Matters relating to training and research on medical, dental, nursing and midwifery, indigenous, homeopathic, pharmaceutical, para-medical (MATS and IHT), and allied subjects
 7. Matters relating to technical assistance for vehicles and laboratories, medical and surgical equipment
 8. Engagement with national/international associations/bodies in medical and allied fields, such as Bangladesh Medical and Dental Council (BMDC), State Medical Faculty (SMF), Bangladesh Medical Research Council (BMRC), Bangladesh Nursing and Midwifery Council (BNMC), Bangladesh College of Physicians and Surgeons (BCPS), Bangladesh Unani and Aiuyurvedic Board, Homeopathic Board, and such other bodies
 9. Registration and quality control of medical, dental, nursing and midwifery professionals
 10. Registration and quality control of alternative medical personnel
 11. Coordination and evaluation of all executive functions relating to projects and programs of the Division

12. Motivation: (a) Preparation and development of publicity media to motivate people in family planning; (b) Organization of publicity work at the national and social levels; (c) Educational campaign on these matters
13. Supply of aids: (a) Procurement, preservation, and distribution of birth control materials; (b) Enlighten the people on the use of birth control materials; (c) Organizations for providing assistance in the matters of family planning through hospitals, health centers, maternity and child welfare centers
14. Preparation and coordination of activities relating to family planning through other ministries/divisions and offices
15. Training in clinical and non-clinical matters on family planning
16. Arrangement for research in family planning and utilization of its results
17. Survey, monitoring, evaluation, and compilation statistics of field activities in matters relating to family planning
18. Activities relating to maternity and child health centers
19. Administration of BCS (Family Planning)
20. Administration of the Directorate General of Family Planning (DGFP), Unani, Ayurvedic and Homeopathic, National Electro-medical Equipment Maintenance Workshop and Training Centre (NEMEW & TC) and Transport Equipment Maintenance Organization (TEMO) personnel
21. Administration of medical colleges and institutions and coordination and determination of standards in those institutions for higher medical education and research
22. Secretariat administration, including financial matters
23. Administration and control of subordinate offices and organizations under the Division
24. Matters relating to medical, dental, nursing and midwifery personnel, institution and education [relating to Bangladesh Medical and Dental Council (BMDC) and Bangladesh Nursing and Midwifery Council (BNMC)]
25. Engagement with national/international associations/bodies in issues relating to the Division and allied fields and institutions, such as medical colleges, medical universities dental colleges, nursing and midwifery institutions, indigenous and homeopathic education, and such other bodies
26. Scientific societies and associations pertaining to subjects dealt with in the Division
27. Resettlement of demobilized medical and auxiliary medical personnel
28. Matters relating to homeopathy and indigenous care
29. Matters relating to properties of the Division
30. Liaison with international organizations and matters relating to treaties and agreements with other countries and world bodies relating to subjects allotted to the Division
31. All laws on subjects allotted to the Division
32. Inquiries and statistics on any of the subjects allotted to the Division
33. Fees in respect of any of the subjects allotted to the Division, except fees taken in courts

Hierarchy of personnel in the Ministry of Health and Family Welfare

The Hon'ble Minister heads the Ministry of Health and Family Welfare and is assisted by Hon'ble State Minister. In each of the two divisions, the Secretary, as the principal executive of the Ministry, works with a team of officials, including Additional Secretaries, Joint Secretaries/Joint Chiefs, Deputy Secretaries/Deputy Chiefs, Senior Assistant Secretaries/Senior Assistant Chiefs, and others.

Implementing authorities

There exist nine implementing authorities under the MOHFW as follows:

1. Directorate General of Health Services (DGHS)

2. Directorate General of Family Planning (DGFP)
3. National Institute of Population Research & Training (NIPORT)
4. Directorate General of Drug Administration (DGDA)
5. Directorate General of Health Economics Unit (DGHEU)
6. Directorate General of Health Engineering Department (DGHEDE)
7. Directorate General of Nursing and Midwifery (DGNM)
8. Transport & Equipment Maintenance Organization (TEMO)
9. National Electro-medical & Engineering Workshop (NEMEW)

Figure 2.1 shows the implementing authorities under the Ministry of Health and Family Welfare.

Regulatory bodies

There exist five regulatory bodies (Figure 2.2) under the MOHFW. These are:

1. Bangladesh Medical and Dental Council (BMDC)
2. Bangladesh Nursing Council (BNC)
3. State Medical Faculty (SMF)
4. Homeo, Unani and Ayurvedic Board
5. Bangladesh Pharmacy Council

Directorate General of Health Services

With more than one hundred thousand officers and staff members, the Directorate General of Health Services (DGHS) is the largest implementing authority under the MOHFW. Along with the operation of healthcare-delivery systems in the country, the DGHS provides technical assistance to the Ministry in undertaking new programs and interventions and for improvements in the existing ones. The healthcare-delivery systems under the DGHS extend from national to the community level. The activities are implemented under regular

revenue setups and the development programs. The development programs are designed following a sector-wide, multi-year approach.

The healthcare-delivery systems under the DGHS extend from national to the community level. The activities are implemented under regular revenue setups and the development programs.

Figure 2.3 shows the administrative setup of the DGHS that indicates the diversity of activities carried out by the Directorate.

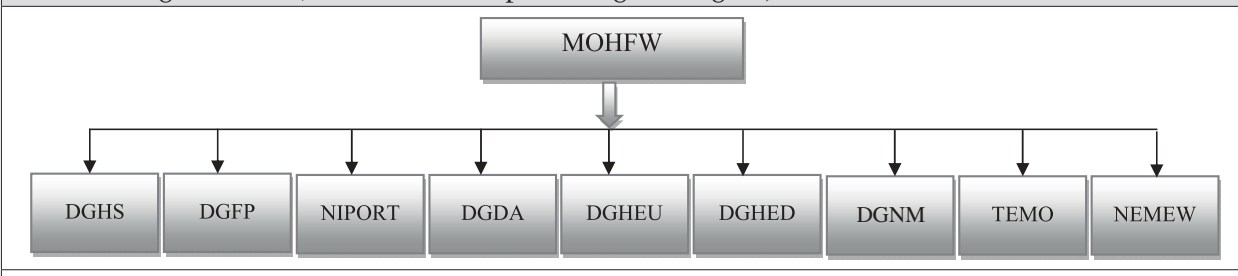
Management structure and type of health facilities under the DGHS

The six tiers of healthcare infrastructure under the DGHS comprises: national, divisional, district, upazila (subdistrict), union, and ward. At the national level, there are institutions both for public health functions as well as for postgraduate medical education/training and specialized treatment to patients.

Activities in each division are governed by a divisional director for health, who is assisted by deputy directors and assistant directors. There is one infectious disease hospital and one or more medical college(s) at the divisional headquarters. Each medical college has an attached hospital. Some divisional headquarters also possess general hospitals and institutes of health technologies. The tertiary-level care is basically provided by the divisional institutes.

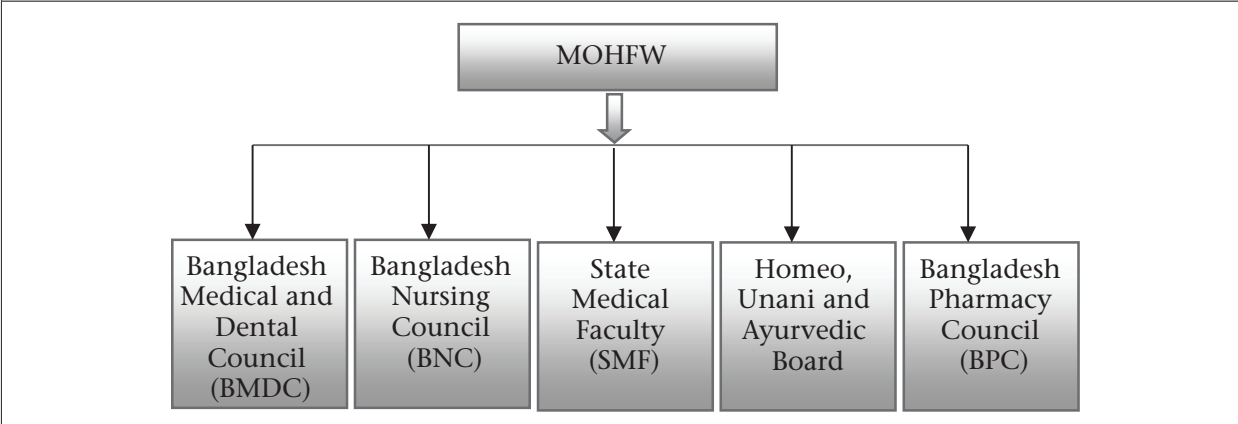
As the district health manager, the civil surgeon (CS) is responsible for delivering secondary and primary-care services. In each district, there is a district hospital. Some

Figure 2.1. Implementing authorities under the Ministry of Health and Family Welfare (for full names of organizations, see the section preceding this Figure)



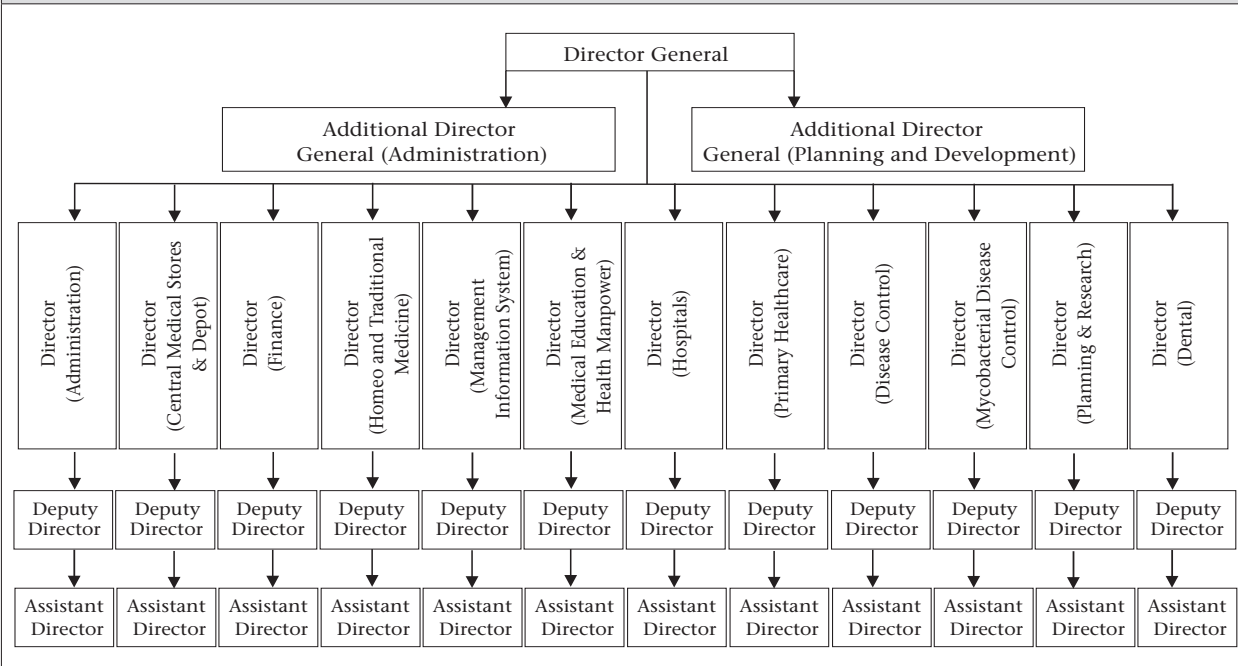
Source: Ministry of Health and Family Welfare (MOHFW)

Figure 2.2. Regulatory bodies under the MOHFW



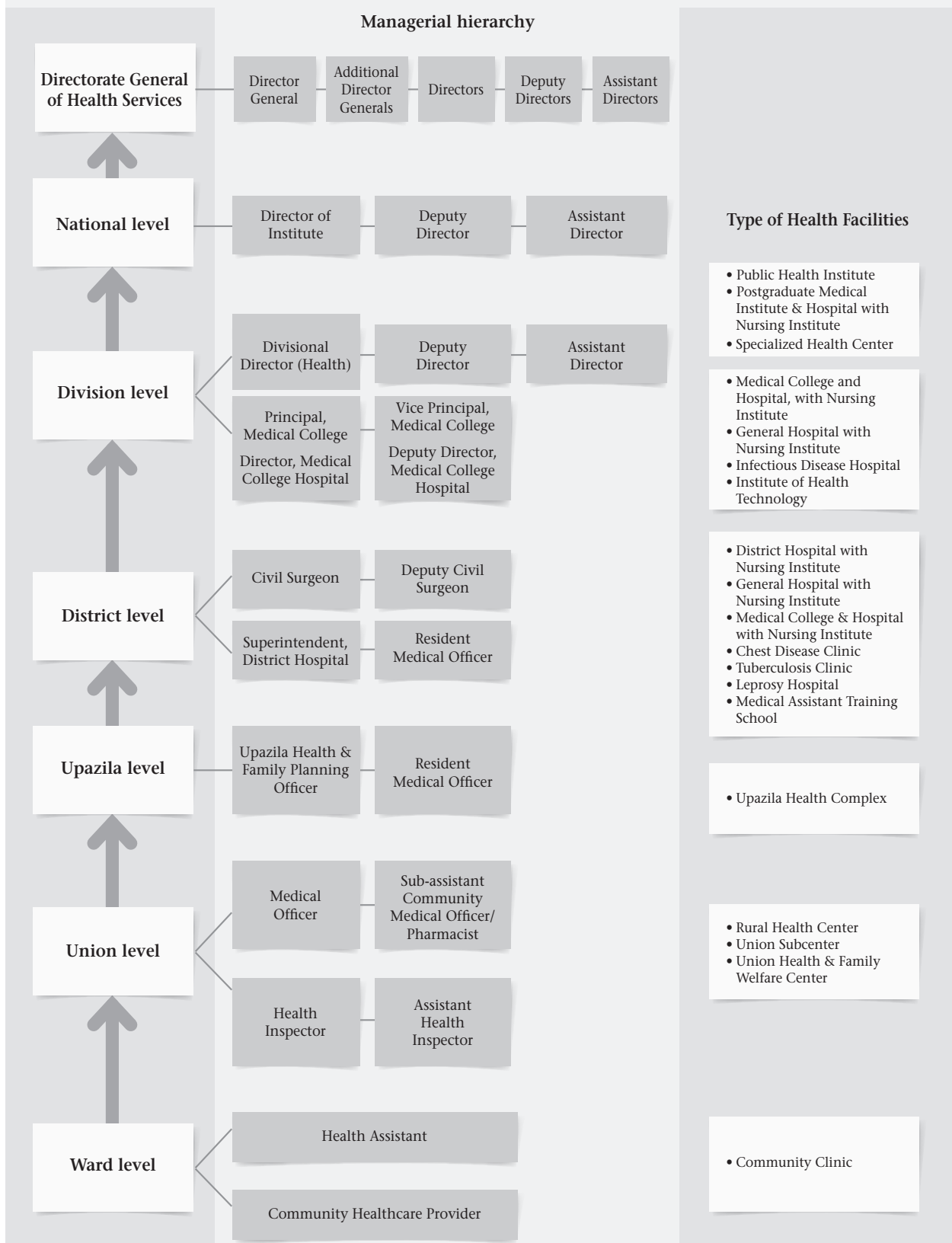
Source: Ministry of Health and Family Welfare (MOHFW)

Figure 2.3. Administrative setup of the Directorate General of Health Services



Source: Ministry of Health and Family Welfare (MOHFW)

Figure 2.4. Types of facilities from national to the ward level, with managerial hierarchy



Source: Ministry of Health and Family Welfare (MOHFW)

district hospitals have superintendents to look after the hospital management. In others, civil surgeons look after the district hospitals. Some of the district headquarters have medical colleges with attached hospitals, medical assistant training schools, and nursing training institutes.

Health manager at the upazila level is the upazila health & family planning officer (UH&FPO). S/he manages all public-health programs, especially the primary healthcare services in the upazila and also looks after the upazila hospital (having 30 to 50 beds). The upazila where the district headquarter is located does not have an upazila hospital; the district hospital provides the services due for the upazila hospital.

Three kinds of health facilities exist at the union level: rural health centers, union subcenters, and union health & family welfare centers (UHFWCs). Each union-level health facility employs a medical doctor among other staff. Only outdoor services are available at the union level. All union facilities have sub-assistant community medical officers to provide health services to the people.

At the ward level, the MOHFW established 12,584 community clinics (CCs). One such community clinic is planned for every 6,000 to 8,000 people, with a total of 13,861 CCs in the country. The existing union and upazila facilities (~4,500) also provide community

clinic services. Up to 30 September 2017, a total of 13,442 CCs were in operation. These are functioning under the operational plan of community-based healthcare under the DGHS. These facilities are mainly responsible for delivering primary healthcare services, like EPI, treatment for common diseases (pneumonia, fever, cough, etc), family planning services, health education, and first-aids and serve as the first contact points for patients. Some of the community clinics have also stated services for normal delivery through CSBA at the community clinic. The MOHFW aims to develop the CCs as the unit of comprehensive healthcare-seeking behavior change in the respective local communities through a sense of ownership and provision of leadership by community people. There are also domiciliary health workers – one for every 5,000 to 6,000 people at the ward or village level.

Figure 2.4 shows the types of organizations and facilities under the DGHS from national to the ward level, with managerial hierarchy.

To run the community clinics, 14,890 posts of full-time CHCP (one for each CC) were created, and recruitment in almost all the sanctioned posts was completed by the Ministry. All of them have been trained to provide better care to the healthcare-seekers. The CHCPs have been given laptop computers with Internet connection to update the local-level health data; the online central databases upload these data for future use.

CHAPTER 3

HEALTH-RELATED SUSTAINABLE DEVELOPMENT GOALS

Opportunity with challenges

The Ministry of Health and Family Welfare (MOHFW) of the Government of Bangladesh carefully designed the 4th sector-wide approach (SWAp), namely 4th Health, Population and Nutrition Sector Program (4th HPNSP) 2017-2022 to initiate its journey toward achieving the health-related SDGs.

To realize the dream of the highest achievable levels of health for every citizen of Bangladesh, the Sustainable Development Goals (SDGs) as a whole and particularly Goal 3 created a new opportunity for the Government as these provide a way forward to fulfilling the constitutional obligations of ensuring required healthcare and nutrition for the citizenry. However, as expressed by the leader of our country (Prime Minister Sheikh Hasina), while SDGs have a collective global commitment, the goals pose some challenges as well. If we face the challenges successfully and undertake a strategic path (not business as usual), the health-related SDGs can be achieved progressively within 2030.

The Ministry of Health and Family Welfare (MOHFW) of the Government of Bangladesh

carefully designed the 4th sector-wide approach (SWAp), namely 4th Health, Population and Nutrition Sector Program (4th HPNSP) 2017-2022 to initiate its journey toward achieving the health-related SDGs. The MOHFW has rich experiences of implementing SWAps for three consecutive 5-year periods. These experiences will guide the MOHFW for managerial decisions, project implementation, supervision, and monitoring quickly. The 4th HPNSP of the Ministry is now functional. Having a budget of USD 14.71 billion, it may look huge in terms of money. However, the amount is actually modest considering the deliverables of the program. The SDGs have a high aspiration for inclusion and leaving no one behind. The program will have to find solutions to set the path towards materializing this high aspiration and, hence, it needs to address equity issues and financial coverage in the line of achieving

universal health coverage (UHC) by 2030. Translation of the 4th HPNSP into appropriate actions heavily depends on the capacity and efficiency of the implementing agencies. The SDGs give priority to measurement and accountability, using reliable data generated through the country-led process. The

implementing authorities will have to address these requirements. The DGHS has an extensive healthcare network with a proven track-record of accomplishing its tasks. It would use the existing infrastructure and resources in the best possible way to achieve the health-related SDGs.

The Goals

Table 3.1 shows the 17 Goals, collectively termed as SDGs.

Table 3.1. The 17 SDGs
Goal 1. End poverty in all its forms everywhere
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3. Ensure healthy lives and promote wellbeing for all at all ages
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Goal 5. Achieve gender equality and empower all women and girls
Goal 6. Ensure availability and sustainable management of water and sanitation for all
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
Goal 10. Reduce inequality within and among countries
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable
Goal 12. Ensure sustainable consumption and production patterns
Goal 13. Take urgent action to combat climate change and its impacts
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Goal 3–Health in the SDGs

Goal 3 of SDGs has been particularly focused on health. The Goal states “To ensure healthy lives and promote wellbeing for all at all ages.”

However, health sector has the responsibility and stake in all the other 16 goals to apply the principles of SDGs in its own settings as well as to complement achievement of the related goals by other sectors.

Targets and indicators of Goal 3

The United Nations Statistical Commission created an Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs) on 6 March 2015. The following global indicator framework of

Goal 3 was developed by this group and agreed upon at the 48th session of the United Nations Statistical Commission held in March 2017. The target-wise indicators are mentioned in Table 3.2.

Target	Indicator
3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 livebirths	3.1.1 Maternal mortality ratio
	3.1.2 Proportion of births attended by skilled health personnel
3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 livebirths and under-5 mortality to at least as low as 25 per 1,000 livebirths	3.2.1 Under-five mortality rate
	3.2.2 Neonatal mortality rate
3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, waterborne diseases and other communicable diseases	3.3.1 Number of new HIV infections per 1,000 uninfected population, by sex, age, and key populations
	3.3.2 Tuberculosis incidence per 100,000 population
	3.3.3 Malaria incidence per 1,000 population
	3.3.4 Hepatitis B incidence per 100,000 population
	3.3.5 Number of people requiring interventions against neglected tropical diseases
3.4 By 2030, reduce by one-third the premature mortality from non-communicable diseases through prevention and treatment and promote mental health and wellbeing	3.4.1 Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease
	3.4.2 Suicide mortality rate
3.5 Strengthen the prevention and treatment of substance-abuse, including narcotic drug-abuse and harmful use of alcohol	3.5.1 Coverage of treatment interventions (pharmacological, psychosocial and rehabilitation and aftercare services) for substance-abuse disorders
	3.5.2 Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in liters of pure alcohol
3.6 By 2020, halve the number of global deaths and injuries from road-traffic accidents	3.6.1 Death rate due to road-traffic injuries
3.7 By 2030, ensure universal access to sexual and reproductive healthcare services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs	3.7.1 Proportion of women of reproductive age (15-49 years) who have their need for family planning satisfied with modern methods
	3.7.2 Adolescents' childbirth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age-group

Table 3.2. Contd.

Table Continued...	
Target	Indicator
3.8 Achieve universal health coverage, including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all	3.8.1 Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)
	3.8.2 Proportion of population with large household expenditure on health as a share of total household expenditure or income
3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	3.9.1 Mortality rate attributed to household and ambient air pollution
	3.9.2 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)
	3.9.3 Mortality rate attributed to unintentional poisoning
3.a Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate	3.a.1 Age-standardized prevalence of current tobacco-use among persons aged 15 years and older
3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all	3.b.1 Proportion of the target population covered by all vaccines included in their national program
	3.b.2 Total net official development assistance to medical research and basic health sectors
	3.b.3 Proportion of health facilities that have a core set of relevant essential medicines available and affordable on a sustainable basis
3.c Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least-developed countries and small island developing States	3.c.1 Health worker density and distribution
3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks	3.d.1 International Health Regulations (IHR) capacity and health emergency preparedness

DGHS is prepared to achieve the targets of SDG 3

The plan and preparation of the DGHS to achieve the targets of health-related SDGs were outlined in the previous year’s bulletin (Chapter 3, Health Bulletin 2016). With continuous fine-tunings of the plan and preparation, the DGHS is steadily advancing towards achieving the objectives. To ensure close monitoring and supervision, the Management Information System (MIS) of the DGHS included visualizations of SDG indicators in its online dashboard. This dashboard displays both survey

and routine health-related data from more than 14,000 public health facilities in Bangladesh. The routine data come from DHIS2--the online health information management platform of the DGHS. A near-real-time status of the SDG indicators can be visualized from the dashboard. At present, the indicators are disaggregated into divisional levels but soon it would be possible to drill the indicator values down to the district and upazila (subdistrict) levels. Figure 3.1 and 3.2 shows screenshots of the overall and SDG-specific segment of the online dashboard respectively.

Figure 3.1. Screenshot of the DGHS dashboard (overall)

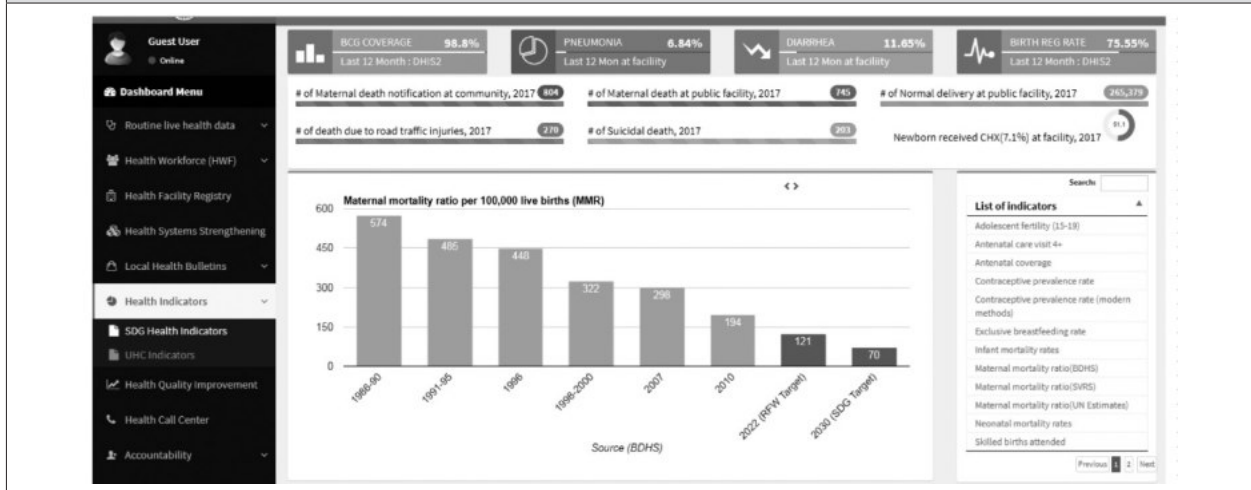


Figure 3.2. Screenshot of the SDG-specific segment of the DGHS dashboard (A click upon any photograph will reveal the relevant indicator)



The dashboard would be a powerful tool for monitoring the progress towards achieving SDG 3 as well as increasing transparency of the DGHS.

The global and national targets for the SDG

indicators are shown in Table 3.3. Available latest figures are also provided as the baseline values for Bangladesh. Readers are advised to retrieve the online dashboard, available from www.dghs.gov.bd for the latest values.

Table 3.3. Global and national targets of SDG indicators				
SDG target	Name of the indicator	Target to be achieved by 2030	Baseline value for Bangladesh	National target (HNPSIP 2016-2021 and other strategic documents)
3.1: Maternal health	3.1.1: Maternal mortality ratio (MMR)	Less than 70 per 100,000 livebirths	176 (WHO estimate 2016)	105 per 100,000 livebirths by 2021 (HNPSIP 2016-2021)
	3.1.2: Births attended by skilled health personnel	-	42.1 (BDHS 2014)	65% by 2021 (HNPSIP 2016-2021)
3.2: Newborn and child health	3.2.1: Under-five mortality rate	Less than 25 per 1,000 livebirths	46 (BDHS 2014)	37 per 1000 livebirths by 2021 (HNPSIP 2016-2021)
	3.2.2: Neonatal mortality	Less than 12 per 1,000 livebirths	28 (BDHS 2014)	21 per 1000 livebirths by 2021 (HNPSIP 2016-2021)
3.3: Communicable diseases	3.3.1: Estimated HIV incidence rate	By 2030 end the endemic of AIDs	<1 (WHO 2014)	Keep the AIDS epidemic from expanding beyond the current level (<1%) Avoid a gradual spread of HIV infection from high-risk groups to the general population
	3.3.2: TB case detection rate/ TB incidence rate per 100,000 population	End epidemics of TB by 2030	53% (GTBR 2014 estimates)	75% (HNPSIP 2016-2021)
	3.3.3: Malaria incidence rate per 1000 population	End epidemics by 2030	High endemic (three districts): 1.0-10/1000 population Low endemic (ten districts): .1-1.0/1000 population World Malaria Report 2015	Reduce malaria morbidity and mortality until the disease is no longer a public-health problem in the country
Table 3.3. Contd.				

Table Continued...				
SDG target	Name of the indicator	Target to be achieved by 2030	Baseline value for Bangladesh	National target (HNPSIP 2016-2021 and other strategic documents)
	3.3.4: Hepatitis incidence per 100,000 population	Combat hepatitis	-	-
	3.3.5: Neglected Tropical Diseases (NTDs): people requiring intervention (preventive + new cases) against NTDs	End epidemic by 2030	-	Kala-azar: Annual incidence rate to <1/10,000 population in all endemic upazilas (subdistricts) by 2015 Elimination of filariasis Prevention and control of dengue
3.4: Non-communicable diseases	3.4.1: Mortality rate attributed to cardiovascular disease, cancer, diabetes, or chronic respiratory disease	Reduce by one-third the premature mortality by 2030	18% (World Health Organization Non-communicable Diseases (NCD) Country Profiles, 2014)	Reduce by one-third the premature mortality due to NCDs from current rate
	3.4.2: Suicide mortality rate (per 100,000)	Reduce one-third of premature mortality by 2030	8 per 100,000 according to WHO 2014 report	Reduce by one-third the premature suicidal death from current level
3.5: Substance-abuse	3.5.1: Coverage of treatment interventions (pharmacological, psychosocial and rehabilitation and aftercare services) for substance-abuse disorders	Strengthen the prevention and treatment of substance-abuse, including narcotic drug-abuse and harmful use of alcohol	-	-
	3.5.2: Alcohol per-capita consumption (aged 15 years and older) within a calendar year in liters of pure alcohol	Strengthen the prevention and treatment of substance-abuse, including narcotic drug-abuse and harmful use of alcohol	Almost zero alcohol consumption (0.2 in 2010) WHO report 2014	Committed to global target

Table 3.3. Contd.

Table Continued...				
SDG target	Name of the indicator	Target to be achieved by 2030	Baseline value for Bangladesh	National target (HNPSIP 2016-2021 and other strategic documents)
3.6: Road-traffic injuries	3.6.1: Deaths due to road-traffic accidents/ Mortality rate from road-traffic injuries (per 100,000 population)	By 2020, halve the number of global deaths and injuries from road-traffic injuries	<p>According to World Bank statistics, annual fatality rate from road accidents is found to be 85.6 fatalities per 10,000 vehicles (WB, World Development Indicators 2002)</p> <p>According to the Accident Research Institute (ARI), Bangladesh University of Engineering and Technology (BUET), road accidents claim, on average, 12,000 lives annually and lead to about 35,000 injuries (Road Safety Facts 2012 through 2014)</p>	Committed to global targets
3.7: Sexual and reproductive health	3.7.1: Proportion of women married or in a union of reproductive age (aged 15-49 years) who have their need for family planning satisfied with modern methods (met need) Unmet need for family planning	By 2030, ensure universal access to sexual and reproductive healthcare services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs	12%, for limiting and 5% for birth spacing	Reduce unmet need to 7% by 2021 (FP 2020 commitment, Govt. of Bangladesh)
	3.7.2: Adolescents' childbirth rate per 1,000 adolescent women aged 15-19 years	Universal access to sexual and reproductive healthcare by 2030	30.8% in 2014 (BDHS)	25% by 2021 (HNPSIP 2016-2021)

Table 3.3. Contd.

Table Continued...				
SDG target	Name of the indicator	Target to be achieved by 2030	Baseline value for Bangladesh	National target (HNPSIP 2016-2021 and other strategic documents)
3.8: Universal health coverage	3.8.1: Coverage of essential health services	Achieve universal health coverage, including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all	2.3 in 2014 (BDHS)	1.7 by 2021 (HNPSIP 2016-2021)
	Total fertility rate			
	Contraceptive prevalence rate (CPR)	Achieve universal health coverage	62.4 in 2014 (BDHS)	75% by 2021, CPR in lagging region: 60% by 2021 (HNPSIP 2016-2021)
	ANC 4 coverage	Achieve universal health coverage	31.2 (BDHS 2014)	ANC 4 coverage 50% by 2021 (HNPSIP 2016-2021)
	Measles immunization coverage	Achieve universal health coverage	86.6% (CES Report 2014)	95% (HNPSIP 2016-2021)
	% of children aged less than 6 months receiving exclusive breastfeeding	Achieve universal health coverage	55.3% (BDHS 2014)	65 % (HNPSIP 2016-2021)
	% of infants aged 6-23 months are fed with minimum acceptable diet	Achieve universal health coverage	22.8% (BDHS 2014)	45 % (HNPSIP 2016-2021)
	Estimated prevalence of diabetes and hypertension among adult men and women aged 35 years and older	Achieve universal health coverage	Diabetes: 11.2%; Hypertension: 31.9% (BDHS 2011)	Diabetes: 10% Hypertension: 30% (HNPSIP 2016-2021)
3.8.2: Number of people covered by health insurance or a public health system (per 1,000 population)	Achieve universal health coverage, including financial risk protection	-	-	

Table 3.3. Contd.

Table Continued...				
SDG target	Name of the indicator	Target to be achieved by 2030	Baseline value for Bangladesh	National target (HNPSIP 2016-2021 and other strategic documents)
3.9: Mortality for environmental pollution	3.9.1: Mortality rate attributed to household and ambient air pollution	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	-	-
	3.9.2: Mortality rate attributed to unsafe water, unsafe sanitation, and lack of hygiene	By 2030, substantially reduce the number of deaths and illnesses due to unsafe water, sanitation and lack of hygiene	-	-
	3.9.3: Mortality rate attributed to unintentional poisonings	By 2030, substantially reduce the number of deaths and illnesses due to poisoning	-	-
3.a: Tobacco control	3.a.1: Tobacco-use rate (Age-standardized prevalence of current tobacco-use among persons aged 15 years and older/ Tobacco-use among persons aged 18+ years (WHO))	Strengthen the implementation of World Health Organization Framework Convention on Tobacco Control in all countries as appropriate	Tobacco-use by male: 48%, female: 2%, total: 25% in 2011 (2014 WHO Report)	Reduce tobacco-use from current prevalence
3.b: Provide access to all essential medicines and vaccines	3.b.1: Percentage of health facilities with essential medicines and lifesaving commodities	Ensure availability in all facilities	Facilities with essential drugs: 66%; FP methods: 84.4% (HFS2014)	Facilities with essential drugs: 75%; FP methods: 90% by 2021 (HNPSIP2016-2021)

Table 3.3. Contd.

Table Continued...				
SDG target	Name of the indicator	Target to be achieved by 2030	Baseline value for Bangladesh	National target (HNPSIP 2016-2021 and other strategic documents)
3.c: Health workforce	3.c.1: Health workers' density and distribution per 1,000 population: Reduction in functional vacant positions in public facilities by category (physician, nurse/midwife, paramedics)	Substantially increase health financing and the recruitment, development, training, and retention of the health workforce in developing countries, especially in the least-developed countries and small island developing States	Physician: 30.5% in 2014 Nurse: 7.8% in 2014 (BHFS) Paramedic: 7.1% in 2014	Physician: 15% by 2021 Nurse: 4% by 2021 Paramedic: 4% by 2021 (HNPSIP 2016-2021)
3.d: National and global health risk	3.d.1: International Health Regulations (IHR) capacity and health emergency preparedness: International Health Regulations (IHR) core capacity index/number of attributes attained out of 13 core attributes	Strengthen the capacity of all countries, in particular, developing countries, for early warning, risk reduction and management of national and global health risks	-	-
2.2: Child malnutrition	Prevalence of stunting in under-5 children/ Proportion of stunted U5 children Proportion of wasted and overweight U5 children	By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally-agreed targets on stunting and wasting in children below 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons	36.1 in 2014 (BDHS 2014)	25% by 2021 (HNPSIP 2016-2021)

Table 3.3. Contd.

Table Continued...				
SDG target	Name of the indicator	Target to be achieved by 2030	Baseline value for Bangladesh	National target (HNPSIP 2016-2021 and other strategic documents)
6.1: Drinking-water	Proportion of population using improved drinking-water sources	By 2030, achieve universal and equitable access to safe and affordable drinking-water for all	98% (DHS2014)	100%
6.2: Sanitation and hygiene	Proportion of population using improved sanitation facilities	By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	45% (BDHS 2014)	-
7.1: Clean household energy	Percentage of population with primary reliance on non-solid fuels (%)	By 2030, ensure universal access	18% (DHS 2014)	-
11.6: Clean cities	Ambient air pollution Percentage of urban solid waste regularly collected and well-managed (disaggregated by type of wastes)	By 2030, reduce the adverse per-capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	-	-
13.1: Natural disasters	Number of deaths, missing people, injured, relocated or evacuated due to disasters per 100,000 people	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	-	-
16.1: Violence	Homicide conflicts Women and girls subjected to physical, sexual or physiological violence		Prevalence of intimate partner violence: 15-71% (WHO multi-country study on women's health and domestic violence, Lancet 2006)	

SECTION B

Health Systems Strengthening

- Chapter 4:** ■ Service Delivery
- Chapter 5:** ■ Health Workforce Situation in Bangladesh
- Chapter 6:** ■ Health Information System and eHealth
- Chapter 7:** ■ Access to Essential Medicines and Biotechnology
- Chapter 8:** ■ Financing Healthcare
- Chapter 9:** ■ Leadership and Governance

SERVICE DELIVERY

Journey towards universal health coverage

Located at the ward level, the community clinics are the lowest-level static health facilities. These have upward referral linkages with health facilities located at the union and upazila levels.

Primary healthcare

Through various public health facilities, Bangladesh provides free medical services to people at the community level. The primary healthcare is provided through an extensive network of health facilities. Located at the ward level, the community clinics are the lowest-level static health facilities. These have upward referral linkages with health facilities located at the union and upazila levels. There are 477 primary-care government hospitals at the upazila level and below, which have 19,441 hospital beds. Counting together the hospitals and outdoor-only centers, there are 15,382 public health facilities at these levels. Table 4.1 presents the breakdown by the types of facilities at the primary-care level.

Number of beds is shown as zero in some of the upazila health complexes because they provide only outdoor service. At the union level,

there are 51 primary-care hospitals with 830 beds and 1,399 health facilities for outpatient services only. So, at the union level, there are 1,450 primary-care health facilities in the country. Moreover, there are 5 trauma centers at this level; these are included in the list of secondary and tertiary-care centers. At the ward level, there are 13,442 community clinics in operation till September 2017.

Due to the flagship nature of the program, community clinics deserve special mention. In addition to the community clinics, important components of primary healthcare, among others, include domiciliary healthcare, essential service delivery, along with urban primary healthcare, maternal healthcare (inclusive of some screening programs for women's health), child healthcare, school health program, and adolescent health program. The MIS-DGHS is playing the leading role in providing computers with Internet connections, which now extends down to the grassroots-level health facilities as

Table 4.1. Primary healthcare facilities run by the DGHS at the upazila level and below, 2017 (September)

Level	Type of facility	Type of service	Total no. of facilities	Total no. of beds
Upazila	Upazila health complex (50-bed)	Hospital	297	14,850
	Upazila health complex (31-bed)	Hospital	112	3,472
	Upazila health complex (10-bed)	Hospital	11	110
	Upazila health complex (0-bed)*	OPD	4	-
	Subtotal of upazila health complexes		424	18,432
	Upazila health office	OPD	60	-
	31-bed hospital	Hospital	4	124
	30-bed hospital	Hospital	1	30
	25-bed hospital	Hospital	1	25
	Subtotal of hospitals outside health complexes		66	179
	Total of upazila-level facilities		490	18,611
Union	20-bed hospital	Hospital	32	640
	10-bed hospital	Hospital	19	190
	Subtotal of union-level hospitals		51	830
	Union subcenter and Union health & family welfare center	OPD	1,399	-
	Total of union-level facilities		1,450	
Ward	Community clinic (functional at present)	OPD	13,442	-
Grand total of primary-care hospitals (Upazila and below)			477	19,441
Grand total of primary health facilities (Upazila and below)			15,382	19,441
*Hospital not yet started				

well as the health workers. The union health centers and community clinics have laptop computers and wireless modems, and the community health workers have Android tablets.

Community clinics

Community Clinic (CC) is the brainchild of Hon'ble Prime Minister Sheikh Hasina. It is being branded in her name. It is the lowest-tier public health facility. It is a one-stop service outlet on health, family planning and nutrition, each covering around 6000-8000 rural population. It is a unique example of public-private partnership as all the CCs have been constructed on land donated by the community people. Costs incurred for construction, medicines, service providers, logistics, and all other inputs are borne by the

Government but these are managed by both community and the Government through Community Groups (CGs). The Government planned to establish CCs at the doorsteps of rural people all over the country to ensure the provision of quality primary healthcare.

The CG for each CC comprises 17 members and is headed by Elected Member of the Union Parishad; other members in the CG are from different walks of life. To support a CG in the management and community engagement, there are 3 Community Support Groups (CSGs) for each CC. In both CG and CSG, at least one-third of the members are female, including adolescents. All the CGs and CSGs have been made functional. During 1998-2001, more than 10,000 CCs were constructed, of which about 8,000 started functioning but, in 2001,

shortly after commissioning, the CC activities were closed due to political change in the Government and continued as such till 2008.

In 2009, the Government took the initiative for revitalization of CCs as a topmost priority under a project titled “Revitalization of Community Healthcare Initiatives in Bangladesh” (RHCIB), setting the implementation period from 1 July 2009 to 30 June 2015. Under this project, the closed CCs were made functional in phases after necessary repairing, recruitment, and capacity-building by creating the position of a new category of service provider (Community Healthcare Provider or CHCP) for each CC. Medicines, with all necessary logistics, were provided. Many new CCs were also constructed under the RHCIB. At present (as of September 2017), 13,442 CCs are operational. From July 2015, all the activities of CCs were being carried out under an Operational Plan of the DGHS, namely Community-based Healthcare (CBHC) under the Health, Population and Nutrition Sector Development Program (HPNSDP) 2011-2016. Activities will continue under the 4th HPNSP 2017-2022.

Thousands of villagers, particularly the poor and the underprivileged mothers and children, are getting services from the nearby CCs. On an average, 9.5-10.00 million patient-visits take place nationwide each month in the CCs. As a large proportion of the service-seekers is getting primary healthcare services from the nearby CCs, outpatient attendance at the UHCs is decreasing. As a result, doctors at the UHCs are getting more time for the management of emergency and complicated cases. It is to be mentioned that normal delivery is being conducted in a good number of CCs (about 8% of the functional CCs), at the demand of the community, decision of the CG based on the availability of skilled manpower. In total, 1,935 CHCPs have been trained on child delivery and, based on the decision of the committed local management, cases can be referred easily to the nearby UHC, if necessary. From 2009 till 2017 (March), 50,309 normal deliveries

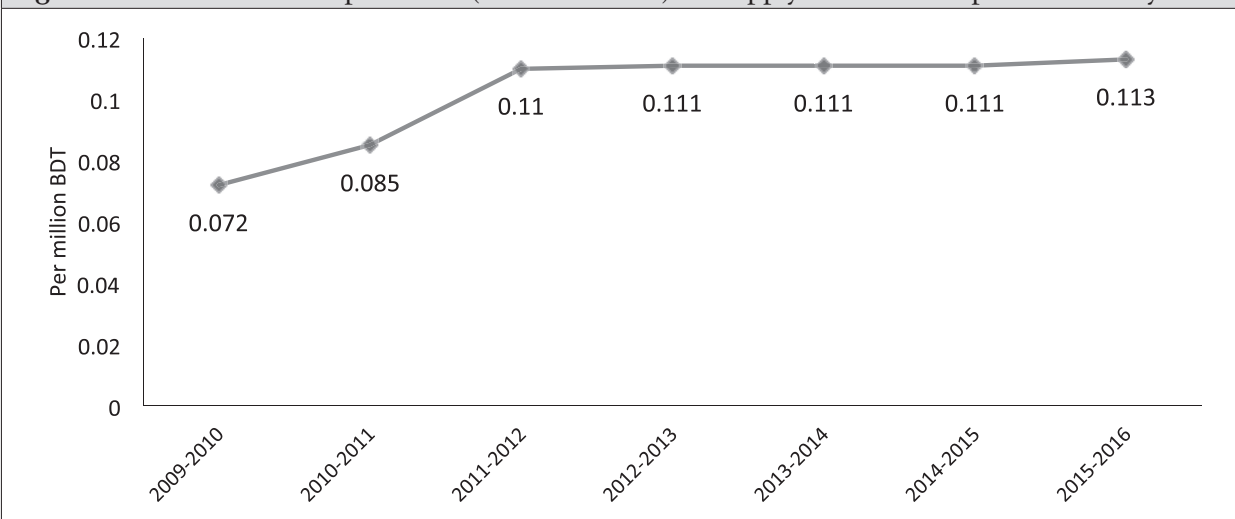
have been conducted in CCs without notable casualties to the mother and their babies.

The use of ICT by CCs for data management and service provision is quite impressive. The Management Information System (MIS) of the DGHS is providing all-out support to develop and maintain the ICT backbone and its usage by CCs. By April 2014, all the community clinics were provided laptop and Internet modem to send service-related data online. In many upazilas, monitoring of CCs is being done through Skype; telemedicine services are also being organized between CCs and UHCs, with a patient at the CC and a doctor at the other end. It will be scaled up in all areas of the country in the near future.

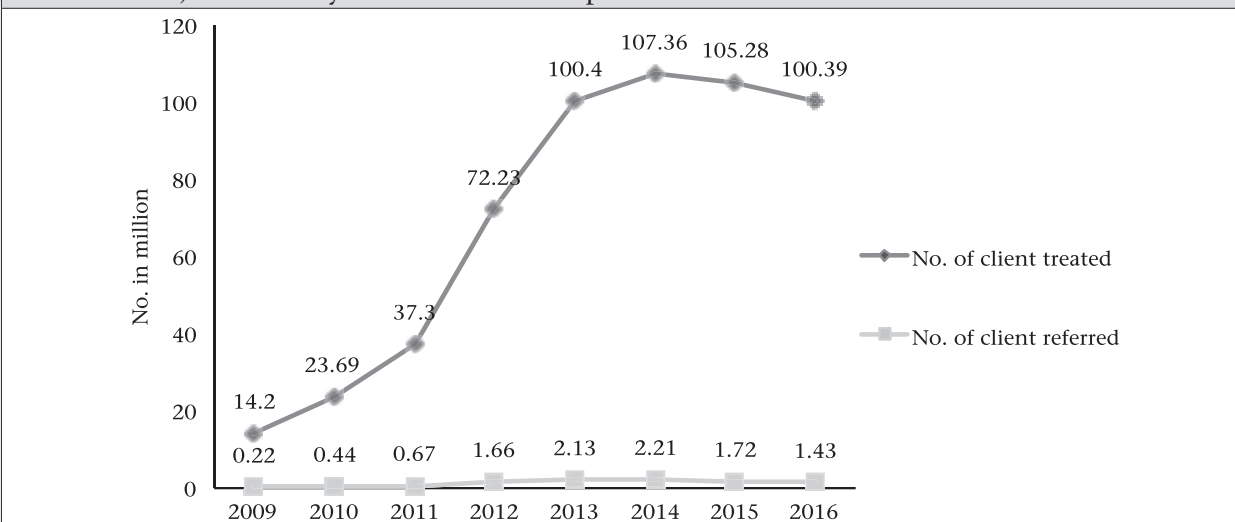
Figure 4.1 shows the government expenditure for supply of medicines per community clinic per year in different fiscal years. The amount of allocation per community clinic for medicine supply was BDT 0.072 million in 2009-2010, BDT 0.085 million in 2010-2011, BDT 0.11 million in 2011-2012, BDT 0.111 million in each of 2012-2013, 2013-2014 and 2014-2015, and 0.113 million in 2015-2016. Twenty-five items were supplied in 2009-2010, and now the number of supplied items is 27.

Figure 4.2 shows the number of service-seekers at CCs and cases referred from community clinics to higher facilities for proper management. From 2011, with the deployment of CHCPs after basic training, the number of service-seekers has been increasing. From April 2009 to September 2017, there were 560.85 million visits by rural people to CCs all over the country (on an average, 9.5-10 visits per month), and 10.48 million emergency and complicated cases were referred to higher facilities for better management.

Community clinic is an unprecedented instance of community participation and public-private partnership. Being inspired by community participation, some UN agencies and NGOs have started working for the community clinics. Many other organizations are also coming forward to working as the days

Figure 4.1. Government expenditure (BDT in million) for supply of medicines per community clinic

Source: Community-based healthcare (CBHC) program, DGHS

Figure 4.2. No. of clients (in million) treated at (total 560.85 million) and referred from (total 10.48 million) community clinics in different periods

Source: Community-based healthcare (CBHC) program, DGHS

are passing. A summary of the key examples of such partnership is provided in the Annex to the Chapter.

Community clinic is certainly a pro-people health initiative led by the Government. If quality health services can be ensured near doorsteps even at the remotest corner of the country, people will spontaneously seek necessary service from the well-trained healthcare providers at these health facilities, instead of the untrained traditional healers.

It is expected that community clinics will ensure provision of quality healthcare for the mass people of rural Bangladesh, particularly the poor, vulnerable, and the underprivileged and will contribute to the achievement of the health development targets envisaged in the just-started SDG era as these did in achieving the MDGs.

In Bangladesh, the 4th Health, Population and Nutrition Sector Program (HPNSP) is under implementation for a period from January

2017 to June 2022. Operational Plan of the Community-based Healthcare (CBHC) will contribute substantially in achieving the targets of SDGs, like the MDGs, and will continue till the achievement of the SDGs by 2030. Under the 4th HPNSP, the dimension of CBHC has been extended further. In short, it consists of the activities of Community Clinic (the flagship program of the present government) and former Essential Service Delivery (ESD).

The vision, mission, general objectives, and the components of the CBHC are mentioned below.

Vision: Ensure good health and wellbeing for all by 2030

Mission: Ensure accessibility, availability, and proper utilization of quality primary healthcare services with further strengthening and sustainability

General objectives: Ensure healthy lives and promote wellbeing for people of all ages by increasing accessibility, affordability, and utilization of quality primary healthcare services within the stipulated time.

Major components of CBHC

1. Measuring health outcomes
2. Staffing and supervision of CCs
3. Community engagement
4. Referral system
5. Sustaining institutionalization
6. Upazila health system
7. Medical waste management
8. Tribal health
9. Urban health

Domiciliary health services in rural Bangladesh

There are domiciliary workers—one for every 5 to 6 thousand people at the ward or village level. Under the DGHS, there are 26,538 sanctioned posts of domiciliary workers, of which 20,908 are for health assistants (HA), 4,220 for assistant

health inspectors (AHI), and 1,410 for health inspectors (HI). As of now, 78.54% posts were filled up. Like the DGHS, the DGFP also has domiciliary workers to work at the ward or village level. These staff members are called family planning inspectors (FPI) and family welfare assistants (FWA); 88% of the posts of FPIs and 83% posts of FWAs are filled up.

Essential service delivery and urban primary healthcare

Under the Health, Population and Nutrition Sector Development Program (HPNSDP) 2011-2016, there was an Operational Plan, namely “Essential Service Delivery” (ESD) mainstreamed under the DGHS to help improve service, particularly at the upazila level and below and complement urban primary healthcare. ESD will continue under the current HPNSP also. The areas of services include: limited curative care, support services and coordination, medical waste management, urban health, mental health, and tribal health. The urban primary healthcare in Bangladesh is principally the responsibility of the Ministry of Local Government, Rural Development and Cooperatives (MOLGRD), carried out through the city corporations and municipalities. These local bodies run a number of small to medium-sized hospitals and outdoor facilities. Besides, large-scale primary healthcare activities under Urban Primary Healthcare Project (UPHCP) and Smiling Sun Franchise Program are run by NGOs in collaboration with the city corporations and with financial assistance from donors. The clients in the latter also share a part of the cost through service-charge. There is a concern among the public health communities that there is a need for better coordination between the two ministries, viz. MOHFW and MOLGRD, with regard to urban primary healthcare, although MOHFW contributes to urban primary healthcare through outpatient services distributed through its secondary, tertiary and specialized hospitals located in the urban settings. Besides, there are 35 urban dispensaries and 23 school health clinics in some of the bigger cities and

municipalities. To respond to the concerns for the need of better coordination between MOHFW and MOLGRD with regard to urban primary healthcare, the MOHFW included in its HPNSDP 2011-2016 a component named 'urban health' under the Operational Plan ESD, and this will continue under the current sector-wide program too. This urban health component aims at designing programs through maintaining better coordination and collaboration with the city corporations, municipalities, UPHCP, Smiling Sun Franchise Program, other NGOs, and stakeholders.

Maternal healthcare

The Bangladesh Ministry of Health and Family Welfare, in collaboration with UNICEF, is running the facility-based Emergency Obstetric Care (EOC) Program in all districts of Bangladesh to improve the maternal health situation. All the government medical college hospitals, district-level hospitals, upazila hospitals, and maternal and child welfare centers (MCWCs) provide obstetric care services, inclusive of emergency obstetric care. A number of private clinics or hospitals and health-related NGOs are also partners in this program. Obstetric care is classified into two categories in this program, viz. Comprehensive Emergency Obstetric Care (CEmOC) and Basic Emergency Obstetric Care (BEOC). Currently, all medical college hospitals, 59 district hospitals, 3 general hospitals, 132 upazila health

All the government medical college hospitals, district hospitals, upazila hospitals, and maternal and child welfare centers (MCWCs) provide obstetric care services, inclusive of emergency obstetric care.

complexes, and 63 MCWCs provide CEmOC, and rest of the upazila health complexes provide BEOC. The list also includes NGOs and private care providers from a number of districts. Under a program, jointly operated by the Management Information System (MIS) of the DGHS and UNICEF, data are collected from the EOC facilities. For this publication, data from 689 sources, including 15 medical college hospitals, 62 district/general hospitals, 418 upazila health complexes, 78 maternal and child welfare centers, private hospitals from 58 districts, NGOs from 58 districts have been used for analysis to translate into a format called United Nations Process Indicators. Table 4.2 summarizes the sources of data.

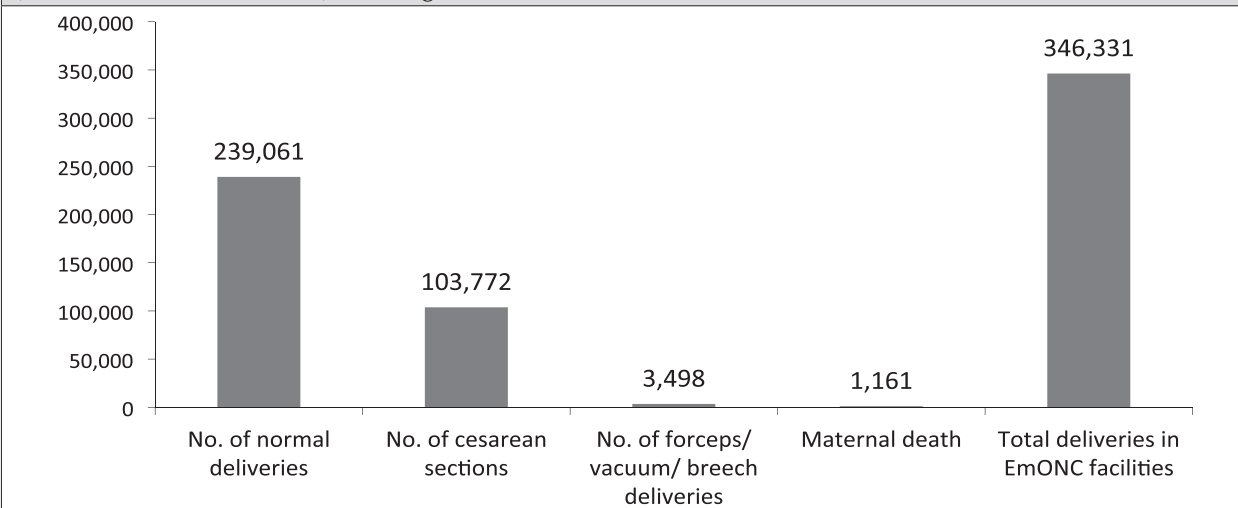
Type of hospital/facility	Number	Percentage %
Medical college hospital	15	2.2
District and general hospital	62	9.0
Upazila health complex	418	60.7
MCWC	78	11.3
Districts from where private care providers sent data	58	8.4
Districts from where NGO care providers sent data	58	8.4
Total	689	100

Source: DHIS2

Figure 4.3 reveals that 346,331 institutional deliveries were reported in 2016, of which normal deliveries accounted for 239,061, cesarean sections accounted for 103,772, and vaginal breech and forceps deliveries collectively accounted for 3,498. The maternal deaths reported were 1,161 in 2016.

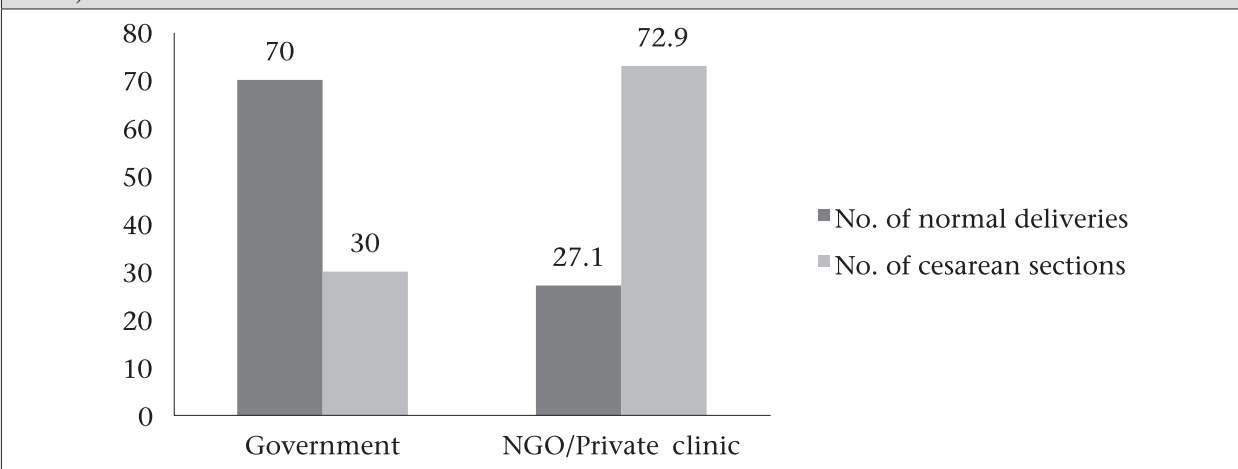
Figure 4.4 reveals that the percentage of normal deliveries (70%) was high in government facilities whereas the number of cesarean

Figure 4.3. Number of different obstetric care encounters in the government healthcare facilities (MCH, DH/GH and UHC) in Bangladesh in 2016



Source: DHIS2

Figure 4.4. Percentage of deliveries by type between government and non-government (private, NGO) health facilities in 2016



Source: DHIS2

sections was high (72.9% of the total deliveries) in NGO/private clinics.

Table 4.3 shows the distribution of normal, assisted, cesarean and total deliveries within the government and non-government emergency obstetric care facilities in 2016. Of the total 761,082 deliveries in the government health facilities 12% took place in medical college hospitals, 13.7% in district/general hospitals, and the largest proportion of 74.3% took place in upazila health complexes and other health facilities at the upazila level.

Of the total 391,458 deliveries in the non-government facilities (NGO, private), 14.2% were done at NGO facilities and 85.8% at private clinics/hospitals. Table 4.3 also reveals that there were 178,736 cesarean sections in the public health facilities and 277,782 in the non-government health facilities.

Figure 4.5 shows the percentage of normal, assisted and cesarean deliveries by type of health facility in 2016. The Figure shows that normal delivery was high in UHCs (89.3%)

whereas cesarean sections (53.9%) and assisted deliveries (2.5%) were high in the MCHs. In NGO/private facilities, cesarean sections were high (71%)

Demand-side Financing (DSF): Maternal Health Voucher Scheme

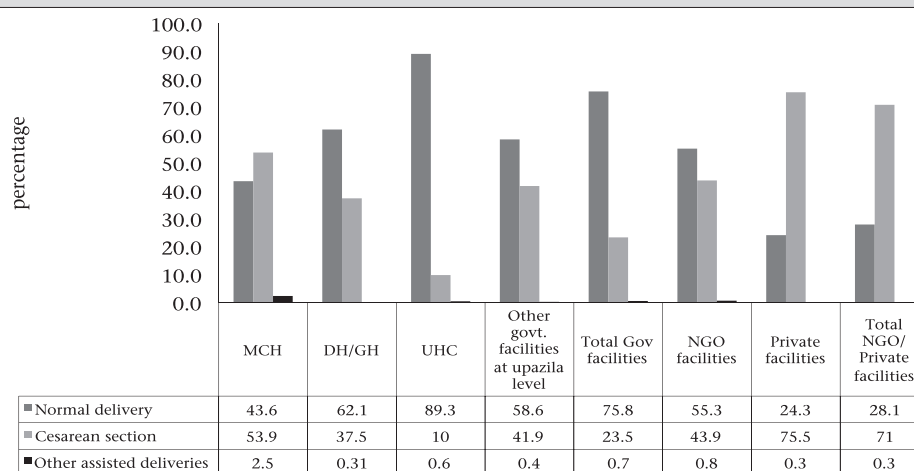
The Ministry of Health and Family Welfare, in collaboration with WHO, introduced in

Table 4.3. Obstetric care services provided by the government and non-government emergency obstetric care facilities in 2016

Type of delivery	Government					Non-government		
	MCH	DH/GH	UHC	Other government facilities at upazila level	Total	NGO facilities	Private facilities	Total
Normal delivery (No.)	39,924	64,938	134,199	337,983	577,044	30,608	81,499	112,107
(%)	43.6	62.1	89.3	58.6	75.8	55.3	24.3	28.6
Cesarean section (No.)	49,268	39,234	15,270	74,964	178,736	24,322	253,460	277,782
(%)	53.9	37.5	10.2	41.9	23.5	43.9	75.5	71.0
Other assisted deliveries (No.)	2,294	324	880	1,804	5,302	422	847	1,269
(%)	2.5	0.31	0.6	0.4	0.70	0.8	0.3	0.3
Total deliveries (No.)	91,486	104,496	150,349	414,751	761,082	55,352	335,806	391,458
(%)	12.0	13.7	19.8	54.5	100	14.2	85.8	100.0

Source: DHIS2

Figure 4.5. Percentage of obstetric care service provided by the government and non-government emergency care facilities in 2016



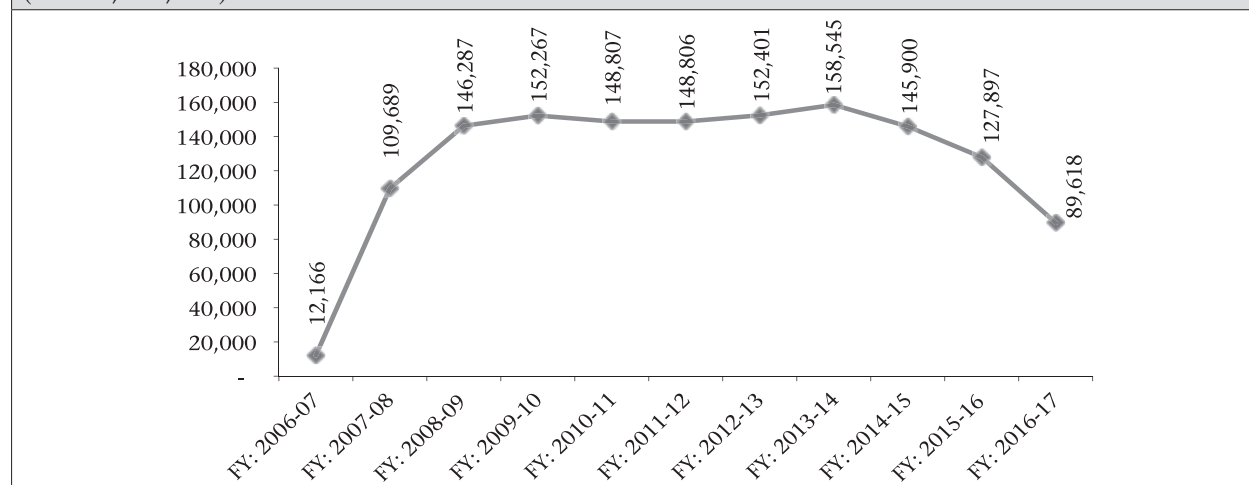
Source: DHIS2

2007 an innovative Maternal Health Voucher Scheme, a demand-side financing (DSF) initiative, to improve access to and use of quality maternal health services for the poor pregnant women. The number of DSF-covered upazilas increased in phases; currently, this program is being implemented in 53 upazilas of 41 districts. Poor women are defined by specific selective criteria (approximately 35% of the pregnant women of an upazila); pregnant women are selected by local government representatives, health managers and other stakeholders. The registration process is looked after by fieldworkers. The total number of cumulative beneficiaries reached 1,392,383 (from 2006-2007 to September 2017) as shown in Figure 4.6. In 2016-2017, a total of 89,618 pregnant women received the benefit. All voucher-holders received health services free of charge (for ANC, PNC, Safe delivery, and treatment of complications, including cesarean section, transportation cost, and laboratory test). If delivery is done in a health facility or by SBA at home, a voucher holder mother also gets cash incentive for nutritious food). Both public and private/NGO facilities participate in the DSF program. Under the current sector program, there is a target to scale up the program in 10 upazilas per year.

Maternal and Newborn Health Initiative

The Maternal and Newborn Health Initiative (MNHI) is being implemented by the Director of Primary Healthcare of the DGHS in 11 districts of Bangladesh, with the assistance of UNFPA, UNICEF, and WHO and funded by DFATD Canada. The districts are Thakurgaon, Jamalpur, Narail, Maulvibazar, Panchagarh, Sirajganj, Patuakhali, Barguna, Rangamati, Sunamganj, and Bagerhat. The program focuses on saving maternal and newborn lives through creating need-based demand and priority-based actions. The broad principle of this program is to find the bottlenecks through data analysis. Finally, the health managers develop Evidence-based Planning and Budgeting (DEPB) for every upazila and hospital. Around 25 districts have been covered under DEPB by UNICEF. The civil surgeon and deputy directors of family planning of the respective districts serve as the local focal points for the program. UNICEF has designed a comprehensive model to improve health of neonates, mothers, and young children in hard-to-reach areas of Bandarban, Cox's Bazar, and Netrakona district, which introduced a default-tracking system to track every mother and child. Under health system strengthening, 10 consultants are working to improve the information system by using data for planning. Innovative dashboard has

Figure 4.6 Number of DSF (demand-side financing) beneficiary pregnant women by fiscal year (total 1,392,383)



Source: Maternal Health Program, DGHS

been created for all health managers. As a part of improving quality, Maternal and Perinatal Death Surveillance and Response (MPDSR) program has been introduced in 10 districts, which has shown good impact in reducing maternal and neonatal deaths.

Community-based skilled birth attendants and midwives

Shortage of skilled manpower in the remote areas to extend obstetric care is one of the major barriers to improving maternal health. The Ministry of Health and Family Welfare undertook a short-term measure to tackle the problem by producing trained manpower for fulfilling the gap in the interim period. Young medical doctors were given 6 months' training on obstetrics and anesthesiology. The Directorate General of Health Services is also implementing community-based skilled birth attendant (CSBA) training program since 2003, with the goal to train and educate the family welfare assistants/female health assistants, community healthcare providers, and other similar health workers in NGOs and private sector, on midwifery skills. The CSBAs are trained to conduct normal safe deliveries at home and to identify the risks and complicated cases so that they can motivate the women and their family members to refer to the nearby health facilities where comprehensive EOC services are available. The Government introduced midwifery course and created posts for 2,994 midwives.

Obstetric fistula program

Bangladesh has made remarkable progress in the socioeconomic sector in recent decades characterized by amazing development in maternal, neonatal and child health status. Maternal mortality has been reduced from 596 to 176/100,000 livebirths from 1990 to 2016. Neonatal mortality rate has declined from 58.8 to 19.5/1,000 livebirths from 1990 to 2015.

In Bangladesh, obstetric fistula and other maternal morbidities affect thousands of

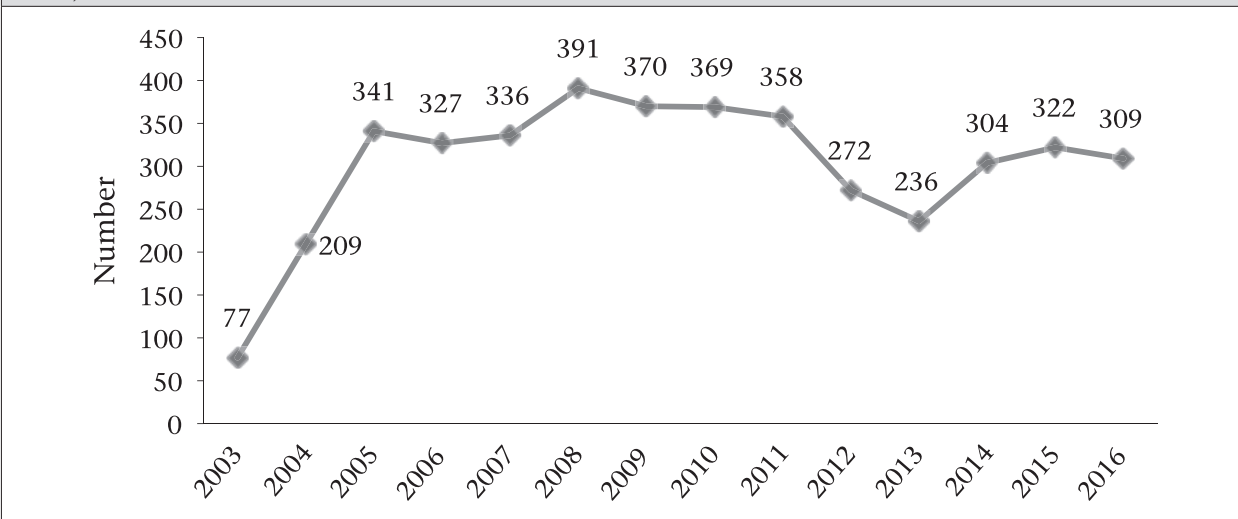
women. A survey in 2003 conducted by EngenderHealth and UNFPA indicated the prevalence of obstetric fistula in 1.69 per thousand of the ever-married women. Currently, it is estimated that approximately around 50,000 women in the country are living with obstetric fistula. UNFPA has been assisting the Government of Bangladesh in strengthening the quality service delivery and capacity development of service care providers at 10 government medical college hospitals. Fistula Care Plus Project, with the support of USAID, also facilitated fistula repair surgery at BSMMU and 5 private hospitals. Since 2003, a total of 118 doctors and 253 nurses have been trained; more than 6,870 (till 2016) obstetric fistula surgeries were performed in these facilities (Figure 4.7 and 4.8). National Fistula Center (NFC) has been established in Dhaka Medical College Hospital as a center of excellence for both management of fistula cases and trained skilled surgeons and nurses.

Bangladesh endorses the UN declaration to end obstetric fistula within a generation. In the new HPNSP (2017-2022), government has made lots of references to care and prevention of fistula. UNFPA and other partners are providing both technical and financial support to GOB to make Bangladesh fistula-free.

Cervical and Breast Cancer Screening Program in Bangladesh

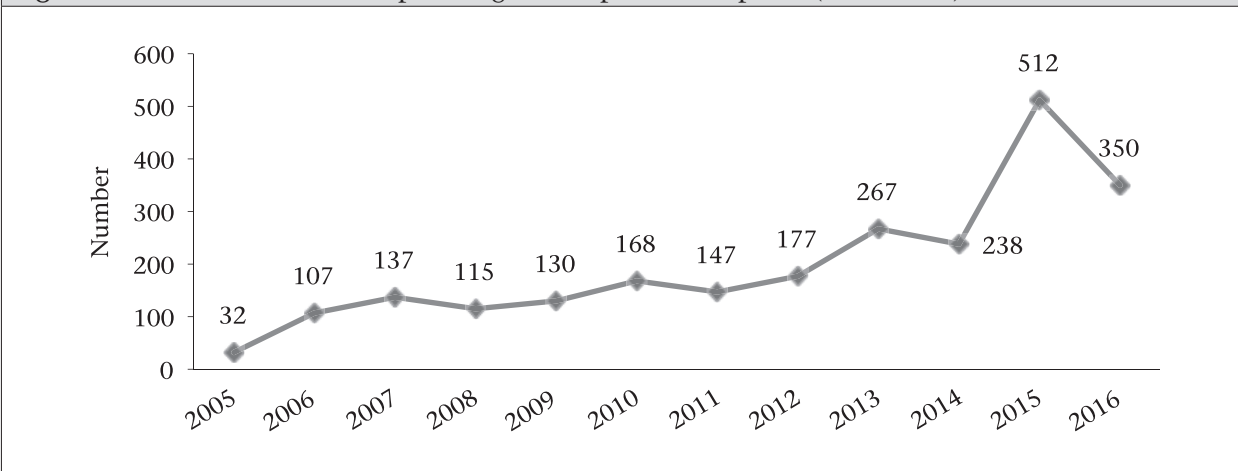
The cervical and breast cancers are the most common cancers in women and contribute to a significant disease burden in Bangladesh. Routine screening and early detection of cervical and breast cancer can reduce death rates and can improve life-expectancy of cancer patients. The Government of Bangladesh has developed cervical and breast cancer screening program in all districts of the country through technical assistance of Bangabandhu Sheikh Mujib Medical University (BSMMU) and UNFPA. Since 2005, a total of 411 centers (Table 4.4) have been established throughout the

Figure 4.7. Number of fistula repair surgeries at the government medical college hospitals (2003-2016)



Source: Cervical and Breast Cancer Screening Program

Figure 4.8 Number of fistula repair surgeries at private hospitals (2005-2016)



Source: Cervical and Breast Cancer Screening Program

country, and about 1,895 service providers (doctors=358, nurses/FWVs/paramedics=1,537) from 64 districts were trained on cervical and breast cancer screening, based on visual inspection with acetic acid (VIA) and clinical breast examination (CBE); 14 government medical college hospitals and BSMMU have been developed as referral centers through development of colposcopy clinics with facilities for colposcopy, histopathology, and management of pre-cancerous condition of the cervix.

Figure 4.9 shows that 1,386,887 VIA tests were performed from 2005 to 2016 at different service centers; among the tested women, 65,247 (4.7%) were found VIA-positive. The coverage of the screening tests is increasing every year. All VIA+ve cases were referred to colposcopy clinic at BSMMU and those at different medical college hospitals. It is reported that 9,155 women with VIA+ve result attended the colposcopy clinics at BSMMU and medical college hospitals during 2016 (Table 4.5).

Table 4.4. Total number of VIA and CBE centers established at various institutions (2005-2016)

Name of institution	Number of centers
District hospitals	57
BSMMU and medical college hospitals	15
MCHTI, MFSTC, mother and child welfare centers	61
Upazila health complexes	218
Union health & family welfare centers	40
URBAN Primary Healthcare Project and NGOs	20
Total	411

Source: Cervical and Breast Cancer Screening Program

Figure 4.10 shows the colposcopy findings of VIA+ve women attending BSMMU (January 2005 to December 2016).

Among the VIA-positive women, 20,776 (Table 4.6) attended the colposcopy clinic of BSMMU, and about 52% of them had precancerous or cancerous condition of the cervix.

Among the attending women at BSMMU, 3,101 (15%) were treated by local excision (LEEP, Loop Electrosurgical Excision Procedure), 2,197

(10.60%) by local ablative method (thermo-coagulation); 1,155 (5.50%) with cervical cancer were referred to oncology (Table 4.6)

Figure 4.11 shows that, from 2007 to 2016, a total of 1,282,498 CBE tests were performed at service centers; among them, 1,6871 (1.32%) women were CBE-positive. The coverage of CBE screening is increasing every year. In 2016, a total of 227,775 screening tests were done, with 1.4% CBE-positive results. All these CBE-positive cases were referred to the Department of Surgery at BSMMU/MCHs and DHs.

In Bangladesh, LEEP acquired acceptability as a commonly-used outpatient treatment procedure for CIN (Cervical Intraepithelial Neoplasia) under local anesthesia and thermo-coagulation without local anesthesia (Basu P, Nessa A, Majid M, et al (2010).

Expanded Program on Immunization

EPI Coverage Evaluation Survey (EPI CES) 2016 was conducted to assess the following:

- Childhood vaccination coverage under routine EPI
- Measles second dose (MSD) vaccination coverage among 18 to 29-month old children under routine EPI
- Status of TT vaccination coverage, protection at birth, ANC, micronutrient supplementation, delivery, PNC among the

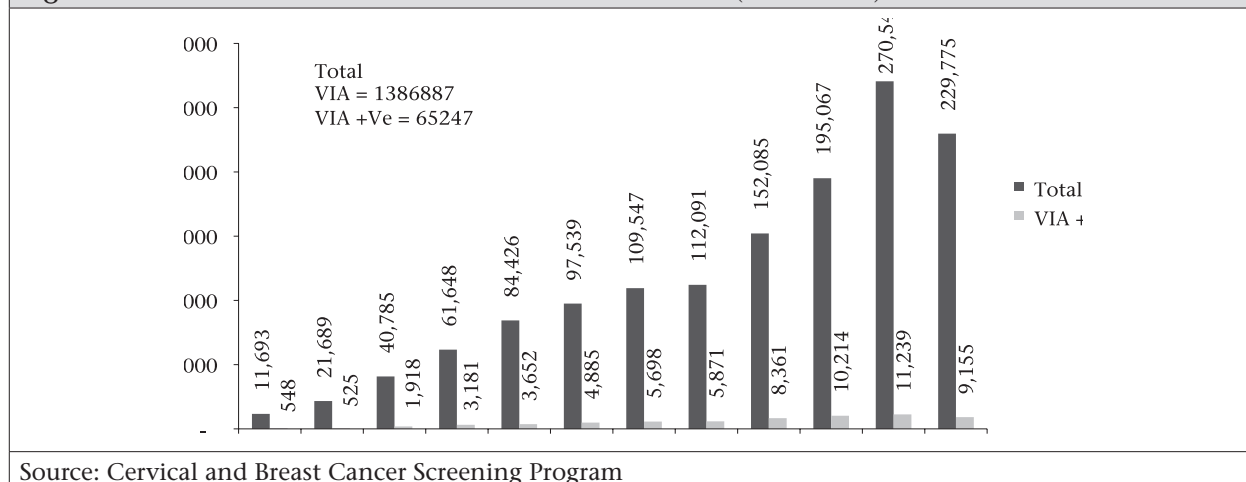
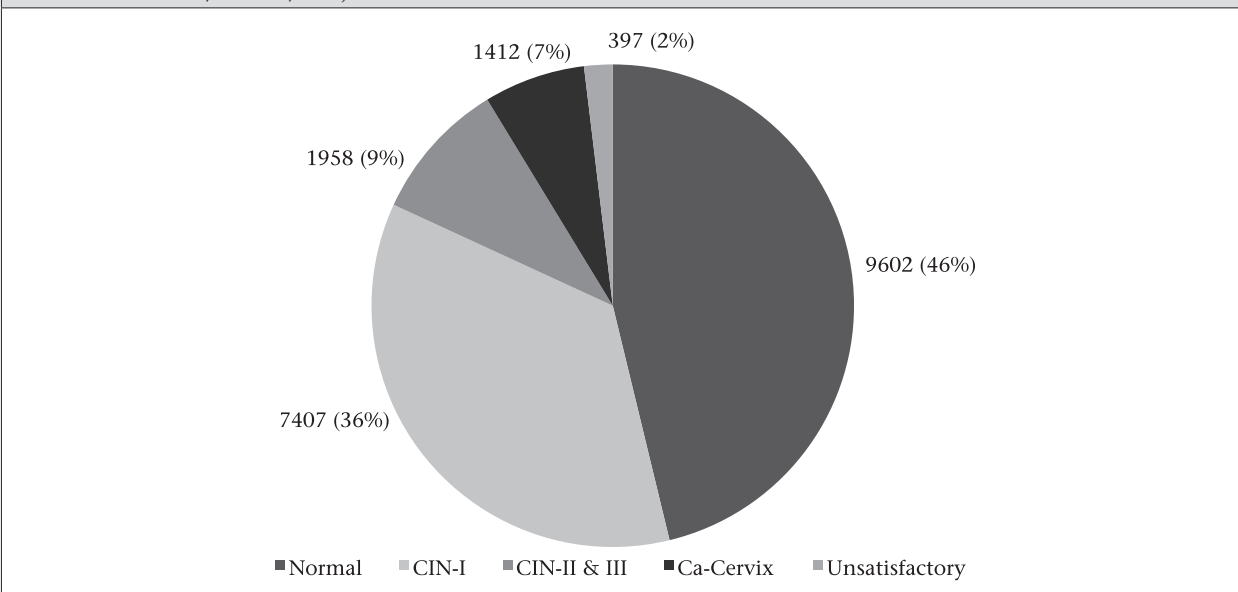
Figure 4.9. Number of VIA tests done and VIA+ve results (2005-2016)

Table 4.5. Total number of colposcopy tests done in 2016 at different institutions	
Name of institution	Number (%) of colposcopy tests
Bangabandhu Sheikh Mujib Medical University	2,576 (28.00)
Rajshahi Medical College Hospital	1,159 (12.60)
Chittagong Medical College Hospital	1,344 (14.00)
Khulna Medical College Hospital	768 (8.50)
Sher-e-Bangla Medical College Hospital, Barisal	387 (4.20)
Faridpur Medical College Hospital	326 (3.50)
MAG Osmani Medical College Hospital, Sylhet	256 (2.80)
Mymensingh Medical College Hospital	372 (4.00)
Dhaka Medical College Hospital	378 (4.50)
Dinajpur Medical College Hospital	156 (2.00)
Comilla Medical College Hospital	358 (4.00)
Rangpur Medical College Hospital	398 (4.50)
Shaheed Suhrawardy Medical College Hospital	28 (0.40)
Sir Salimullah Medical College & Mitford Hospital	166 (1.80)
Shaheed Ziaur Rahman Medical College Hospital, Bogra	154 (1.60)
Failure to attend	329 (3.60)
Total	9,155 (100)

Source: Cervical and Breast Cancer Screening Program

Figure 4.10. Colposcopy findings of VIA+ve women attending BSMMU (January 2005 to December 2016, N=20,776)



Source: Cervical and Breast Cancer Screening Program

Table 4.6. Management of referred patients at BSMMU (January 2005 to December 2016)

Management of women	Number (%)
Follow-up after 3 years	8,787 (42.00)
Follow-up after 1 year	2,659 (12.80)
LEEP biopsy	3,101 (15.00)
Cryotherapy	131 (0.60)
Thermo-coagulation	2,197 (10.60)
Referred to oncology due to cancer	1,155 (5.50)
Failure of treatment and follow-up	2,746 (13.50)
Total	20,776 (100.00)

women having children less than one year old

- TT5 coverage among women aged 18-49 years to assess the progress of the TT5 program
- Vitamin A coverage during the Vitamin A Plus Campaign held on 14 April 2016
- Drop-out rates and quality (percentage of invalid doses, availability of vaccination card, post-vaccination abscesses, other AEFI, reasons for left-out and drop-out and equity)
- Trends in the vaccination coverage and drop-out rates at the national, divisional, city corporation, and district levels

- Provide information as a basis for making concrete recommendations and planning for improving routine immunization activities

Immunization status

Valid vaccine coverage as per EPI CES 2016

≤12 months old children: BCG 99.5%; OPV1 97.8%; OPV2 97.0%; OPV3 90.1%; Penta1 97.8%; Penta2 97.0%; Penta3 90.1%; MR1 87.5%; Full vaccination: 82.3%

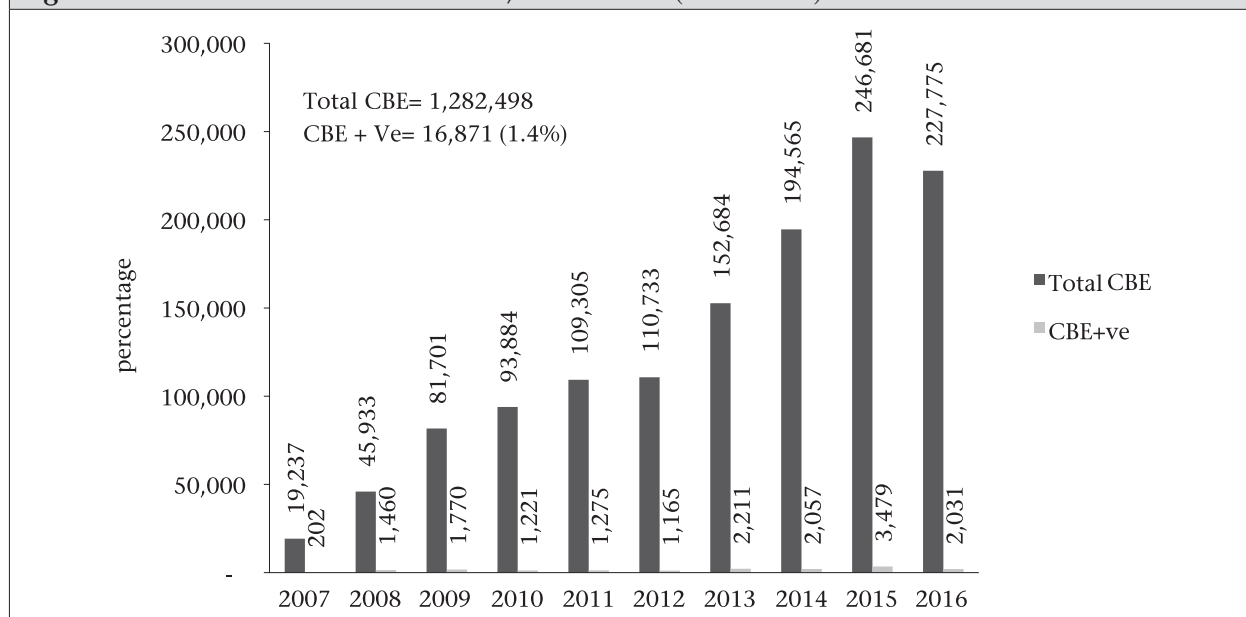
≤23 months old children: BCG 99.5%; OPV1 97.9%; OPV2 97.2%; OPV3 90.4%; Penta1 97.9%; Penta2 97.2%; Penta3 90.4%; MR1 92.3%; Full vaccination: 86.8%

Valid tetanus toxoid coverage (%) among women of childbearing age: TT1 98.2%; TT2 96.8%; TT3 89.2%; TT4 73.2%; TT5 52.3% (EPI CES 2016)

Vitamin A coverage: Infant (6-11 months): 86.1%; Children (12-59 months): 91.3%

Tetanus toxoid (TT) for women of childbearing age

Like the childhood vaccination coverage, TT vaccination coverage was assessed as crude and valid coverage. The valid TT coverage was assessed in terms of the valid doses that a

Figure 4.11. Number of CBE tests done, with results (2007-2016)

woman received. The crude TT coverage was assessed in terms of all TT doses—both valid and invalid—that a woman received. A TT dose administered before the recommended interval was considered to be invalid. Thus, a TT3 dose given earlier than the recommended 6-month interval after a valid TT2 was enumerated as an invalid TT3 dose. The information of TT vaccination was obtained from a woman’s TT card (if available). If it was not available, the information was collected from the woman’s vaccination history reported by her.

The country is maintaining the maternal and neonatal tetanus-free status since 2008. The immunization program of Bangladesh aims to immunize the women of childbearing age by administering TT before the age of 18 years. A period of 2 years and 7 months is required to complete all the 5 doses of TT vaccines. If a woman starts TT vaccination at the age of 15 years and maintains the exact interval, she would be able to complete all the doses before she reaches the age of marriage, ensuring protection for her entire reproductive life. The data shown in Figure 4.12 have been excerpted from EPI Coverage Evaluation Survey 2016. However, the coverage gradually falls for the subsequent TT doses and is remarkably lower for the fourth and final doses. This aspect needs attention to ensure effective coverage.

Figure 4.12 shows the levels of valid TT vaccination coverage in 2016. Valid TT coverage was defined as the coverage a woman received when the EPI-recommended TT vaccination schedule was followed. Nationally, valid TT2 vaccination coverage was 96.8%. However, the valid coverage rate was found to drop to 89.2% for TT3, 73.2% for TT4, and 52.3% for TT5. The urban-rural comparison shows that valid doses of TT2 to TT5 coverage were higher in rural areas than in urban areas. Five doses of valid TT vaccine give protection to a woman against tetanus throughout her reproductive life. The findings suggest that more than half of the women in all divisions received 5 doses of valid TT vaccine.

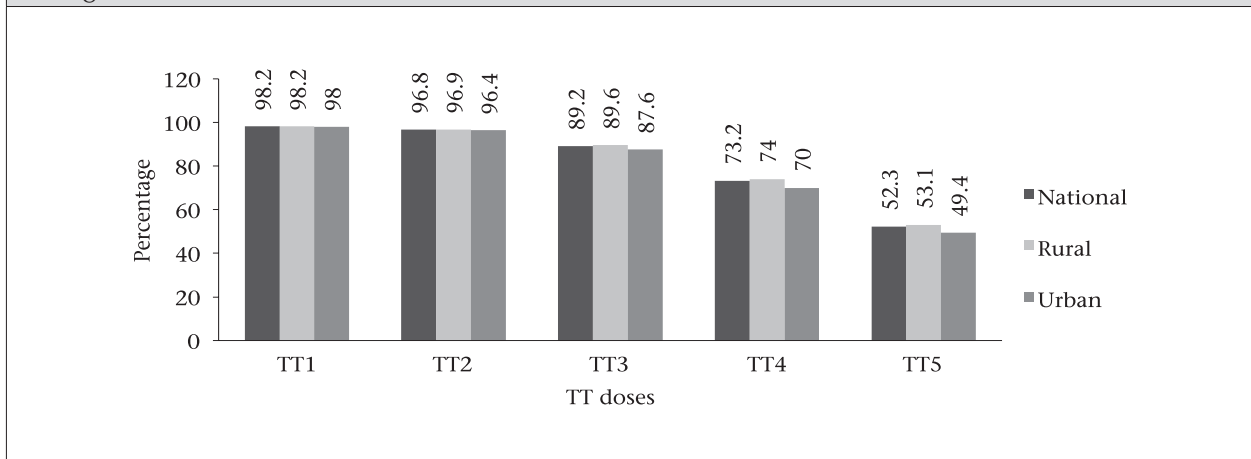
Universal routine child immunization

The EPI CES 2016 validated the immunization coverage rates by cross-checking EPI cards, with history taken from mothers and caregivers of children. Table 4.7 shows the valid vaccination coverage of ≤12 and ≤23 months old children as found in EPI CES 2016.

Full vaccination coverage among these two groups of children was 82.3% and 86.8% respectively.

Bangladesh showed a success story on polio eradication. The country is polio-free since 2000, with 18 exceptional cases of wild polio virus imported from neighboring India in 2006.

Figure 4.12. Levels of valid TT vaccination coverage in rural and urban areas, with national average in 2016



National Immunization Day is observed every year. The current valid national OPV3 coverage rate is 90.1% and 90.4% among ≤ 12 and ≤ 23 months old children respectively, with each district having coverage of more than 80%. The polio eradication program in Bangladesh illustrates Government's commitment through providing 100% cost of routine polio immunization and 95% cost of supplementary polio immunization activities. Bangladesh, despite being free from polio for a long time, could not achieve polio-free certification as one country of the WHO South-East Asia Region, viz. India, could not eradicate the last traces of polio. However, in India, last case of polio was detected in 2011.

After being polio-free for more than 36 months, Bangladesh, along with other 10 member countries of the South-Asia Region, obtained the polio-free certification in March 2014. As per the global polio eradication end-game strategic plan (2013-2018), Bangladesh introduced inactivated polio virus vaccine (IPV) in March 2015 for prevention of vaccine-derived polio viruses due to type two component of polio vaccine. As per country's plan, Bangladesh switches from trivalent oral polio vaccine (tOPV) to bivalent oral polio vaccine (bOPV) in April 2016 for prevention of outbreak due to type 2 component of OPV.

The country is also satisfactorily progressing toward achieving the measles elimination goal in the WHO's South-East Asia Region

by 2020. National measles control activities have been accelerated since 2004 and already implemented all recommended strategies for measles elimination and rubella/congenital rubella syndrome control. Valid measles-rubella vaccination coverage was 87.5% and 92.3% among ≤ 12 and ≤ 23 months old children respectively according to EPI CES 2016. Coverage of the first dose (MCV1) of measles vaccine was estimated to increase from 64% in 2001 to 87.5% in 2016 among ≤ 12 months old children. Coverage of the first dose (MCV1) of measles vaccine was estimated to increase from 78% in 2005 to 92.3 in 2016 among ≤ 23 months old children.

Table 4.8 shows the valid full vaccination coverage by sex, area of residence, and division as found in EPI CES 2016 among ≤ 12 and ≤ 23 months old children. In the measles campaign (follow-up), distribution of high-potency vitamin A and antihelminthes is also included.

Valid vaccination coverage within the age of 12 months

Improvement in valid vaccination coverage within the age of 12 months is the ultimate goal of the EPI. The program has set a target of achieving 95% vaccination coverage nationally and at least 90% in each district. Figure 4.13 indicates the increasing trend in the coverage from 2001 to 2016. A remarkable increase in vaccination coverage has occurred

Age-group	BCG	OPV1	OPV2	OPV3	Penta1	Penta2	Penta3	MR1	FVC
≤ 12 months	99.5	97.8	97.0	90.1	97.8	97.0	90.1	87.5	82.3
≤ 23 months	99.5	97.9	97.2	90.4	97.9	97.2	90.4	92.3	86.8

Age-group	Sex		Residence		Division						
	Male	Female	Rural	Urban	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet
≤ 12 months	82.2	82.5	83.5	77.1	87.5	83.5	77.9	84.5	84.9	82.5	79.2
≤ 23 months	86.8	86.9	87.6	83.5	97.8	90.7	84.0	88.1	88.5	87.2	84.8

in the last 15 years. It increased up to 30.3 percentage points: from 52% in 2001 to 82.3% in 2016. The analysis of trend indicates that gradual improvement in BCG, Penta3, and MR coverage attributed to the continuous improvement in the fully valid vaccination coverage.

Valid coverage within the age of 23 months

Figure 4.14 shows the valid vaccination coverage among children aged ≤ 23 months since 2005. The Figure portrays a gradual improvement in valid vaccination coverage,

which increased by 17.8 percentage points: from 69% in 2005 to 86.8% in 2016.

Vitamin A supplementation coverage

CES 2016 found that overall 86.1% of infants aged 6-11 months and 91.3% of children aged 12-59 months received vitamin A capsules, with a slight variation in proportions between urban and rural areas. Among the mothers with 0-11 month(s) old children (41.2% urban and 34.4% rural) received VAC after delivering their latest child as shown in Figure 4.15

Figure 4.13. Annual trend in national-level valid vaccination coverage among children of ≤ 12 months (2001-2016)

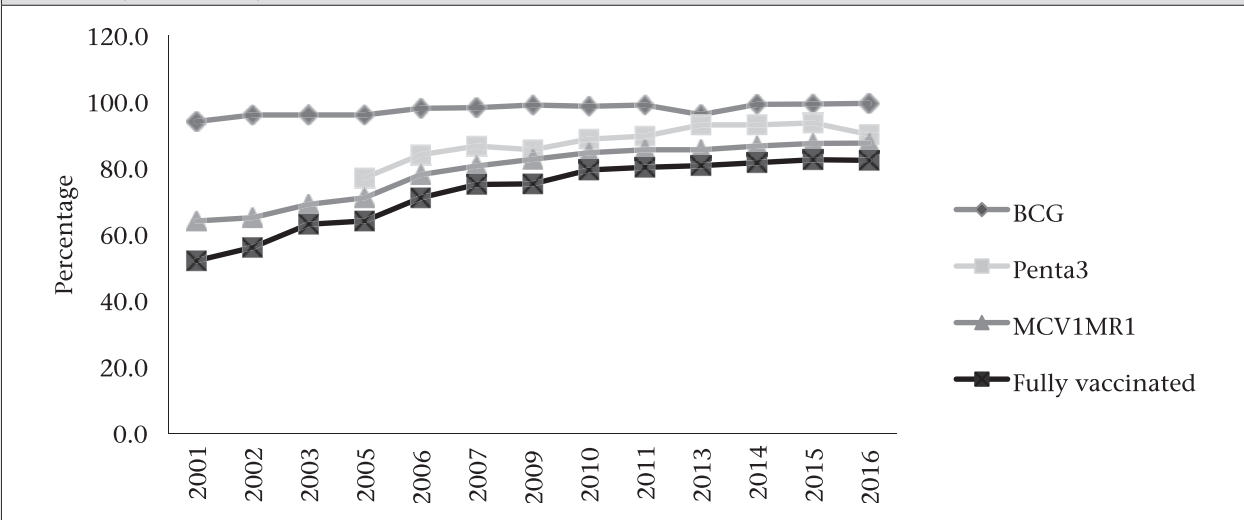
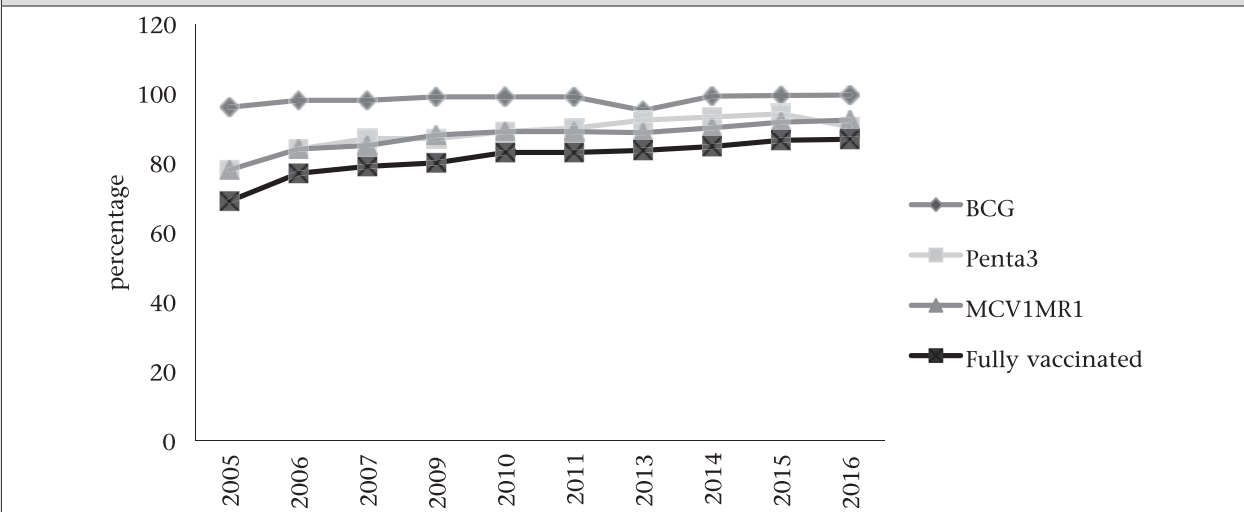


Figure 4.14 Annual trend in national-level valid vaccination coverage among children aged ≤ 23 months, from 2005 to 2016



National-level valid vaccination coverage within the age of 23 months as revealed from cards, registers, and history in 2016.

Figure 4.16 presents valid vaccination coverage within the age of 23 months in 2016. Valid coverage was defined as vaccines received by following the EPI-recommended age and dose interval for each antigen. Nationally, 86.8% of children received all the scheduled doses of all antigens, with BCG coverage being at 99.5%. Penta1 coverage was 97.9%, Penta2 97.2%, and Penta3 90.4%.

Moreover, MR1 coverage (92.3%) was revealed to be 7.2 percentage points lower than BCG (99.5%).

Figure 4.17 presents the valid vaccination coverage within the age of 12 months. It is evident from the Figure that, nationally, 82.3% of children received all the scheduled vaccines within the age of 12 months, following EPI-recommended age and dose intervals for each antigen. The drop from BCG coverage (99.5%) to the 3rd dose of

Figure 4.15. Vitamin A supplementation coverage among 6-11 months old infants, 12-59 months old children, and postpartum women in rural and urban area, with national average, in 2016

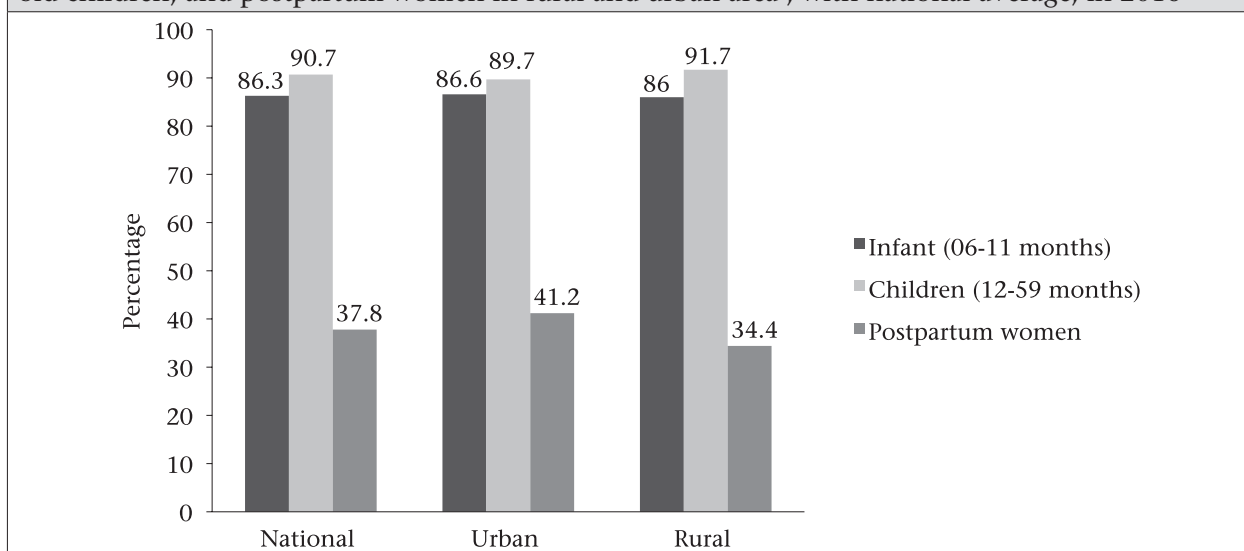
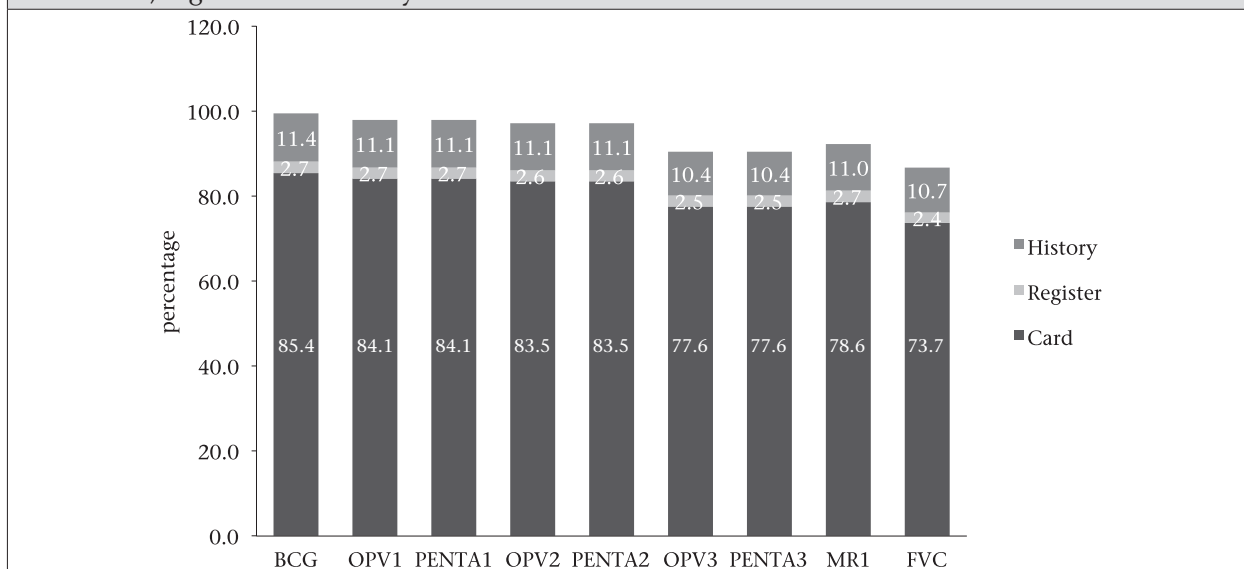


Figure 4.16. National-level valid vaccination coverage within the age of 23 months as revealed from cards, registers and history in 2016



pentavalent administrations, Penta1 (97.8%), Penta2 (97%), and Penta3 (90.1%) was 9.4 percentage points. Valid MR1 coverage was 12 percentage points lower than for the BCG coverage. Administering vaccines without following the EPI-recommended minimum age and intervals caused invalid doses as well as drop-outs from BCG; the subsequent dose of OPV and Penta vaccines attributed to lower MR1 coverage.

Healthcare at the secondary and tertiary-level facilities

Secondary and tertiary-level healthcare facilities are those that provide more advanced or specialty care than the primary healthcare facilities at the ward, union and upazila levels. The district hospitals are usually termed secondary hospitals as these have fewer facilities for specialty care compared to many in the medical college hospitals. There are also different types of specialty-care centers, such as infectious disease hospitals, tuberculosis hospitals, leprosy hospitals, which fall under the health facilities of secondary care. The medical college hospitals are located at the regional level, one for a few districts and provide

specialty care in many disciplines. These hospitals are called tertiary-level hospitals. Also, super-specialty hospitals at the national level or centers that provide high-end medical services in a specific field are considered tertiary hospitals.

The number and bed-capacity in different types of secondary and tertiary hospitals/health centers under the DGHS are shown in Table 4.9.

Bangabandhu Sheikh Mujib Medical University

Bangabandhu Sheikh Mujib Medical University (BSMMU) is the only medical university in Bangladesh. The BSMMU and its affiliated hospital receive financial assistance from the Ministry of Health and Family Welfare. Both university and its affiliated hospital are autonomous bodies. The hospital has 1,500 beds, including 752 free beds. The hospital has 48 clinical departments, 167 cabins, and 18 operation theaters.

Table 4.10 shows the distribution of the secondary and tertiary hospitals by administrative division. Dhaka division is at the top (having 43 of such health facilities),

Figure 4.17. National-level valid vaccination coverage within the age of 12 months as revealed from cards, registers, and history

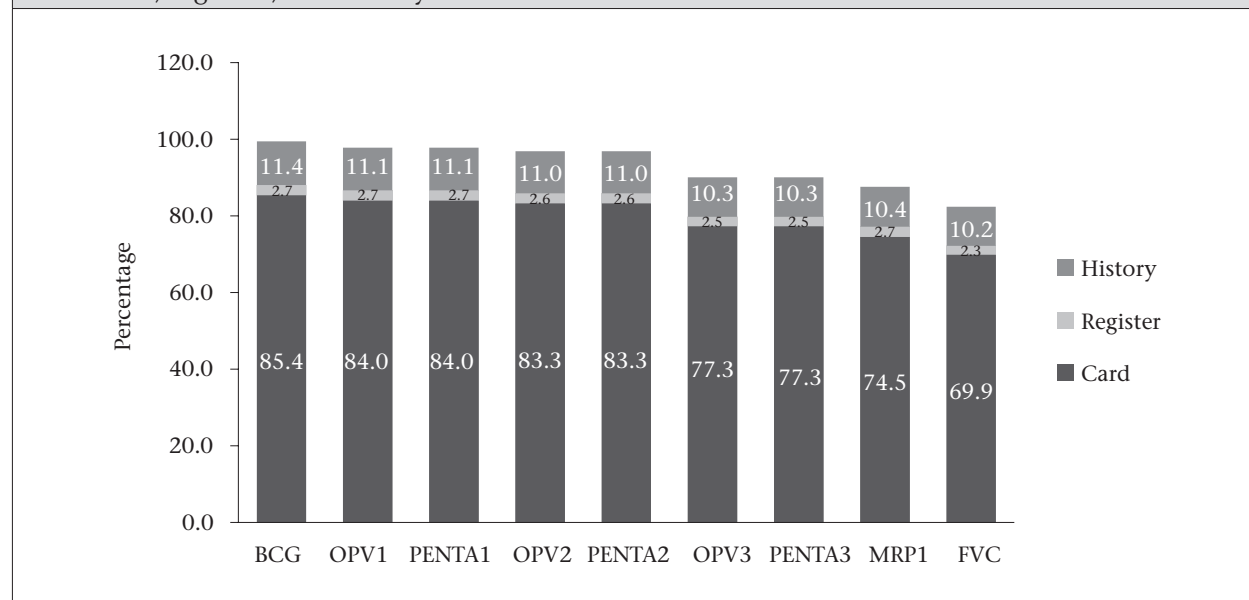


Table 4.9 Secondary and tertiary hospitals/health centers under the DGHS, with the number of functional beds

A. Hospitals		
Type	No. of facilities	No. of functional beds
100-bed hospital	1	100
Chest diseases hospitals	13	816
Dental college hospital	1	200
District and general hospitals	64	10,450
Hospital of alternative medicine	2	200
Infectious disease hospitals	5	180
Leprosy hospitals	3	130
Medical college hospitals	17	13,713
Specialized hospital	5	1,050
Specialty postgraduate institute and hospital	11	3,034
Trauma center	5	100
Total (hospital)	127	29,973
B. Other facilities (Specialized health centers)		
Name	No. of facilities	No. of functional beds
Chittagong Skin & Hygiene Treatment Center	1	Not applicable
Tejgaon Health Complex	1	Not applicable
National Center for Control of Rheumatic Fever & Heart Disease	1	Not applicable
Total hospitals and other facilities	130	29,973

followed by Chittagong, Khulna, and Rajshahi division with 20, 16, and 15 hospitals respectively.

The Table also shows that, of the total 17 medical college hospitals, 6 are in Dhaka division (35.3%), 2 in each of Chittagong, Rajshahi, Rangpur and Khulna division (11.8%) and 1 in each of Barisal,, Mymensingh, and Sylhet division (5.9%). However, this distribution will be changed once the new public medical college hospitals start functioning. In terms of the number of other 110 secondary and tertiary-level facilities, Dhaka division is placed at the top, with 37 facilities (33.6%). This year, the numbers of medical college and other secondary and tertiary hospitals are reduced than those of the previous year in Dhaka division. However, this is not due to actual

reduction in the number of facilities. One medical college hospital and 4 other hospitals, which were in Dhaka division in the previous years, are now being counted under the newly-formed Mymensingh division.

Figure 4.18 shows the percentage of the total number of beds in government-owned secondary and tertiary facilities under the DGHS by administrative division of Bangladesh.

Table 4.11 shows the distribution of the number of beds in all secondary and tertiary public hospitals under the DGHS by division.

Available number of beds is one of the good proxies for measuring the strength of healthcare infrastructure in different geographic areas. These are run under the

Table 4.10 Distribution of secondary and tertiary public hospitals under the DGHS by division										
Type of hospital	Number and percentage	Barisal	Chittagong	Dhaka	Khulna	Mymensingh	Rajshahi	Rangpur	Sylhet	Total
Medical college hospitals	Number	1	2	6	2	1	2	2	1	17
	Percentage (%)	5.9	11.8	35.3	11.8	5.9	11.8	11.8	5.9	100
Other secondary and tertiary facilities	Number	7	18	37	14	4	13	10	7	110
	Percentage (%)	6.4	16.4	33.6	12.7	3.6	11.8	9.1	6.4	100

administrative control of the DGHS. It is not surprising to see that about 41.55% (12,454 out of the total 29,973) beds in the secondary and tertiary hospitals under the DGHS are concentrated in Dhaka division. Chittagong division is in the second position, having 13.89% of beds in the hospitals.

Figure 4.19 shows the total number of beds in all government-owned secondary and tertiary-care hospitals under DGHS by administrative division, 2016.

Figure 4.20 shows the distribution of all secondary and tertiary public hospitals under DGHS by administrative division of Bangladesh, 2016.

Private hospitals, clinics, and diagnostic centers

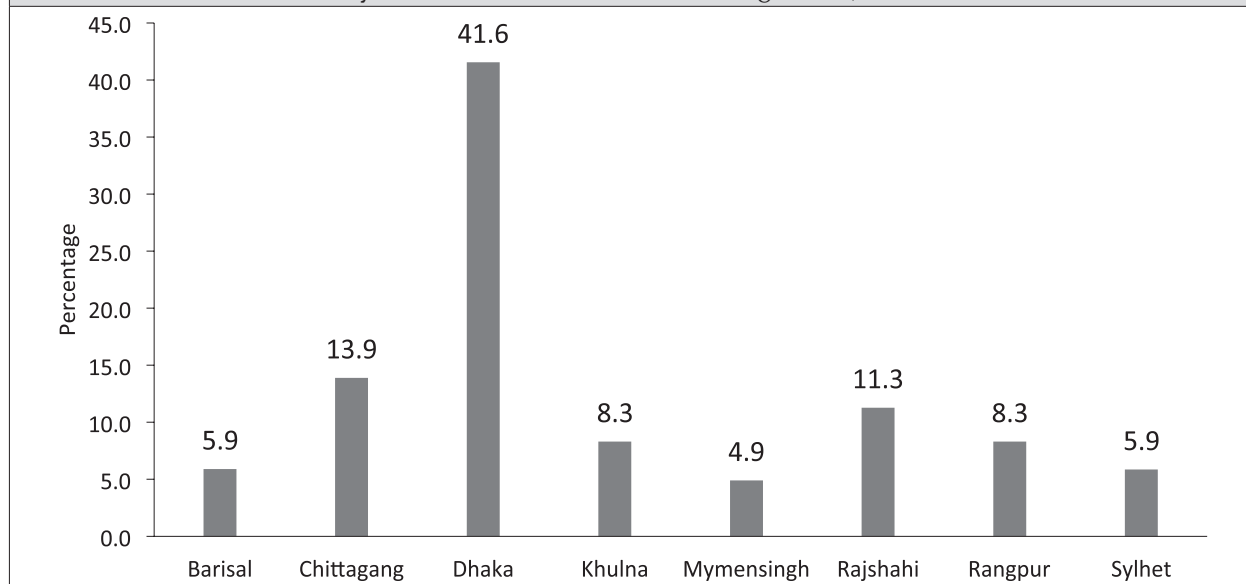
As of June 2016, the DGHS provided registration to 14,488 private hospitals, clinics, and diagnostic centers in Bangladesh. The number of registered private hospitals and clinics is 5,622, and that of registered private diagnostic centers is 9,123. The total number of beds in these registered private hospitals and clinics is 48,725.

Utilization of public health facilities

All health bulletins published in the recent past reported utilization of health services from public, private and NGO facilities. Since it was difficult to have data from all private and NGO facilities, those reports had portrayed only a part of the whole scenario in the private and NGO sectors. This year, we present data from public health facilities only. Healthcare-seeking from the public health facilities has been continuing to rise over the past few years, indicating improvements in the management of patients and their increasing satisfaction.

For 2016 (January to December), we received data from almost all public hospitals and health centers under the DGHS. Table 4.12 shows the sources of data used in the analyses of the service utilization. The analyses are done by grouping similar types of hospitals together.

Figure 4.18. Percentage of the total number of beds in government-owned secondary and tertiary facilities under the DGHS by administrative division of Bangladesh, 2016



Individual facility-level data are presented in the Annex.

Outpatient attendance

In 2016, a total of 39,200,310 patient-visits took place at the outpatient departments (OPD) of 514 public health facilities. Figure 4.21 and Table 4.13 show the distribution of the visits among 3 different levels of care.

It is evident that most patient-attendance (56.5 %) occurred in the primary-level facilities, 19.7% of the OPD visits took place at the tertiary-level facilities. Thus, it can be assumed that care-seeking from the primary healthcare facilities is lowering the patient-load at the higher levels. However, the load is still very high in most of the secondary and tertiary-level facilities, and this will be evident if the available numbers of each type of facilities are used as denominators against the numbers of daily patient-attendance.

Gender and age distribution of outpatient attendees

About 55.96% of attendees at the outpatient departments of all facilities were female. Figure

4.22 shows the overall gender distribution.

Figure 4.23 shows the age- and sex-wise breakdown of the OPD-attendees in 2016. It shows that about one-fourth (24.79%) of the visitors at the OPD were children aged 5 years or less.

Emergency attendance

In addition to the OPD-attendance discussed above, 7,425,541 emergency-attendances were reported from the public health facilities of different categories. Table 4.14 shows the age- and sex-wise breakdown of the attendances among each type of the facilities. The gender and age distribution patterns were similar to those of the OPD-attendance.

Table 4.14 shows that the number of emergency-attendances, at these public hospitals in 2016 is 6,141,901.

It is worth noting that most of these services were provided free of charge; in some of the facilities, only a nominal fee (BDT 5 to 10 per visit) was charged.

Figure 4.24 shows the percentage of emergency patients at different levels of health facilities according to gender in 2016.

Table 4.11. Distribution of the number of beds in all secondary and tertiary public hospitals under the DGHS by division										
Type of hospital	Number and percentage	Barisal	Chittagong	Dhaka	Khulna	Mymensingh	Rajshahi	Rangpur	Sylhet	Total
Medical college hospitals	Number of beds	1,000	1,813	5,050	750	1,000	1,700	1,500	900	13,713
	Percentage (%)	7.3	13.2	36.8	5.5	7.3	12.4	10.9	6.6	100
Other secondary and tertiary facilities	Number of beds	770	2,350	7,404	1,740	470	1,680	990	856	16,260
	Percentage (%)	4.7	14.5	45.5	10.7	2.9	10.3	6.1	5.3	100

Admissions

Last year (2016), 4,856,833 admissions were registered in 491 public hospitals; 105,856 patients died, giving an overall death rate of 1.85%. Table 4.15 shows the distribution of admissions in different types of hospitals. The Table also presents the sex and age distributions. (Details are available in the Annex).

Morbidity profile (2016)

Figure 4.26 shows major causes of morbidity at different levels among under-five children in 2016. Among the under-five children, diarrheal disease was the topmost cause, and respiratory system disorders was the 2nd cause for admission in upazila health complexes. However, other causes, like asphyxia, sepsis, low birthweight, injury, etc. show lower percentages. In district hospitals, diarrheal disease, asphyxia, respiratory system disorders, etc show nearly the same percentage for causes of admission. Low birthweight, sepsis, and injury show lower percentages. In medical college hospitals, asphyxia was the topmost cause, and low birthweight was the 2nd cause of admission among under-five children. Other causes show lower percentages.

Figure 4.27 shows major causes of morbidity among patients aged above five years in 2016. Top causes of morbidity among patients aged above five years in Bangladesh are: pregnancy and associated complications, cardiovascular disease, infectious disease, disease of respiratory system, disease of digestive system, disease of cerebrovascular system, disease of endocrine and metabolic system, disease of blood and blood-forming organs, disease of musculo-skeletal system, poisoning, malignancy, injury, non-specific sign-symptoms and clinical/laboratory findings, etc. In upazila health complexes, non-specific sign-symptoms and clinical/laboratory findings were the topmost causes whereas pregnancy and associated complications had higher proportion as causes of admission in district hospitals, and cardiovascular disease was the topmost cause of admission in medical college hospitals.

Figure 4.19. Total number of beds in all government-owned secondary and tertiary facilities under DGHS by administrative division, 2016

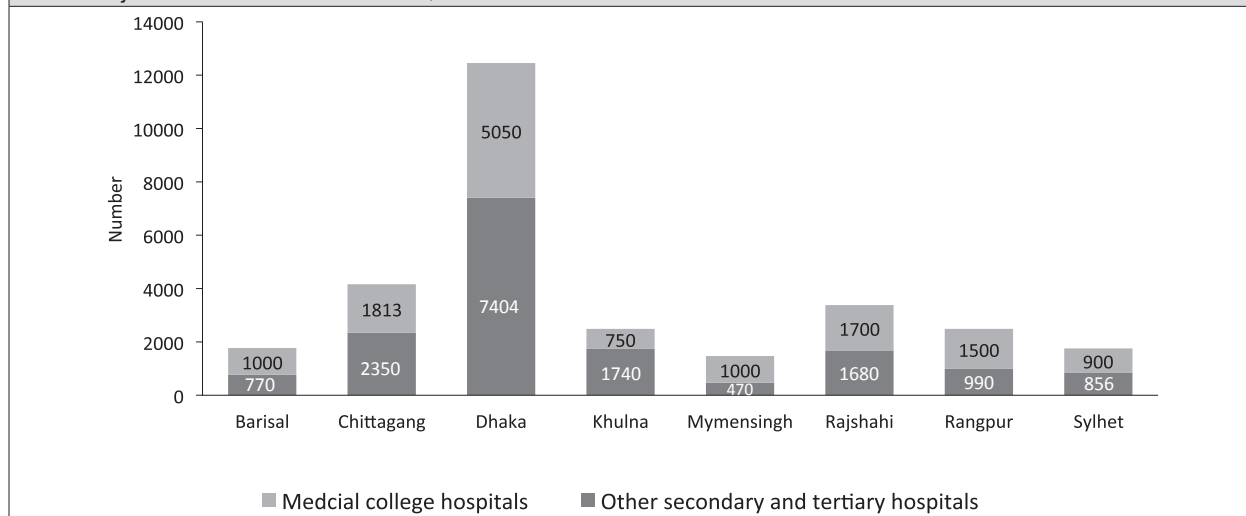
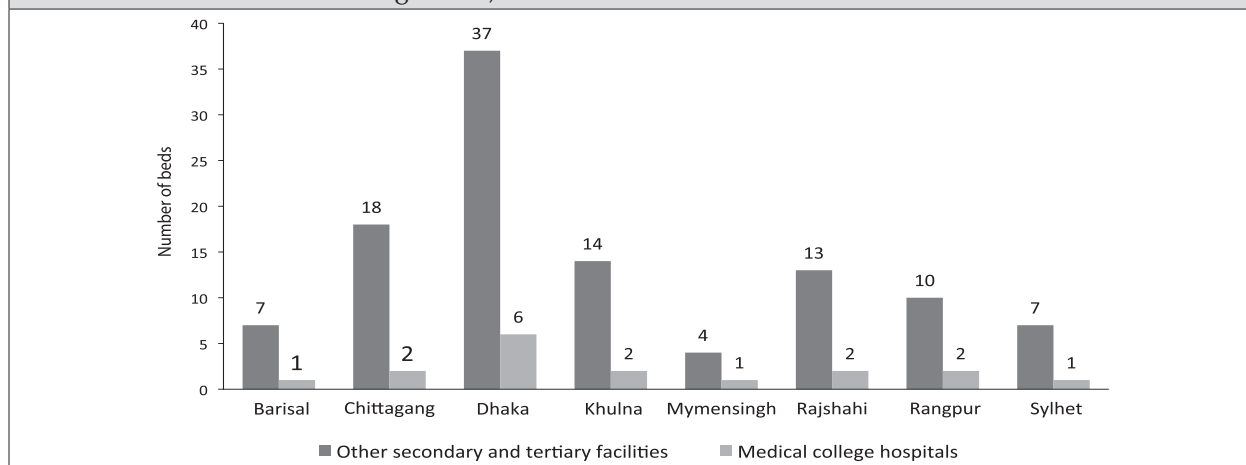


Figure 4.20. Distribution of all secondary and tertiary public hospitals under DGHS by administrative division of Bangladesh, 2016



Mortality profile (up to Sept. 2017)

Mortality profile in 2016 according to age and sex

Figure 4.28 shows the number of deaths according to age and sex at different levels of health services. The mortality rate seems to be increasing with age. For all age-groups, upazila health complexes reported the least rate of mortality, and medical college hospitals reported the highest rate of mortality.

Mortality among under-five children

Figure 4.29 shows the major causes of mortality in medical college hospitals in 2016.

Asphyxia (37.13%) was the topmost cause of mortality among under-five children in medical college hospitals in 2016. Other causes were respiratory tract infections, sepsis, low birthweight, etc.

Figure 4.30 shows the major causes of mortality in district hospitals in 2016.

In district hospitals, asphyxia (50.88%) was the topmost cause of mortality among under-five children in 2016, showing a similar scenario in both medical college and district-level hospitals. Other causes were sepsis, low birthweight, respiratory tract infections, etc.

Level of care	Type of facilities	Number of facilities*
Primary	10-bed hospital	2
	20-bed hospital	7
	31-bed hospital	2
	50-bed hospital (renamed Shaheed Ahsanullah Master 250-bedded General Hospital, Tongi)	1
	Upazila health complex	414
Secondary	District hospital/General hospital	63
Tertiary	500-bed hospital	2
	Bangladesh Institute of Tropical and Infectious Diseases, Foujdarhat	1
	Medical college hospital	13
	20-bed Infectious Disease Hospital, Faujdarhat	1
	Other tertiary hospitals (National Institutes, Pabna Mental Hospital)	8
	Total	514

*These are not the total number of health facilities; included only those that reported data to DHIS2

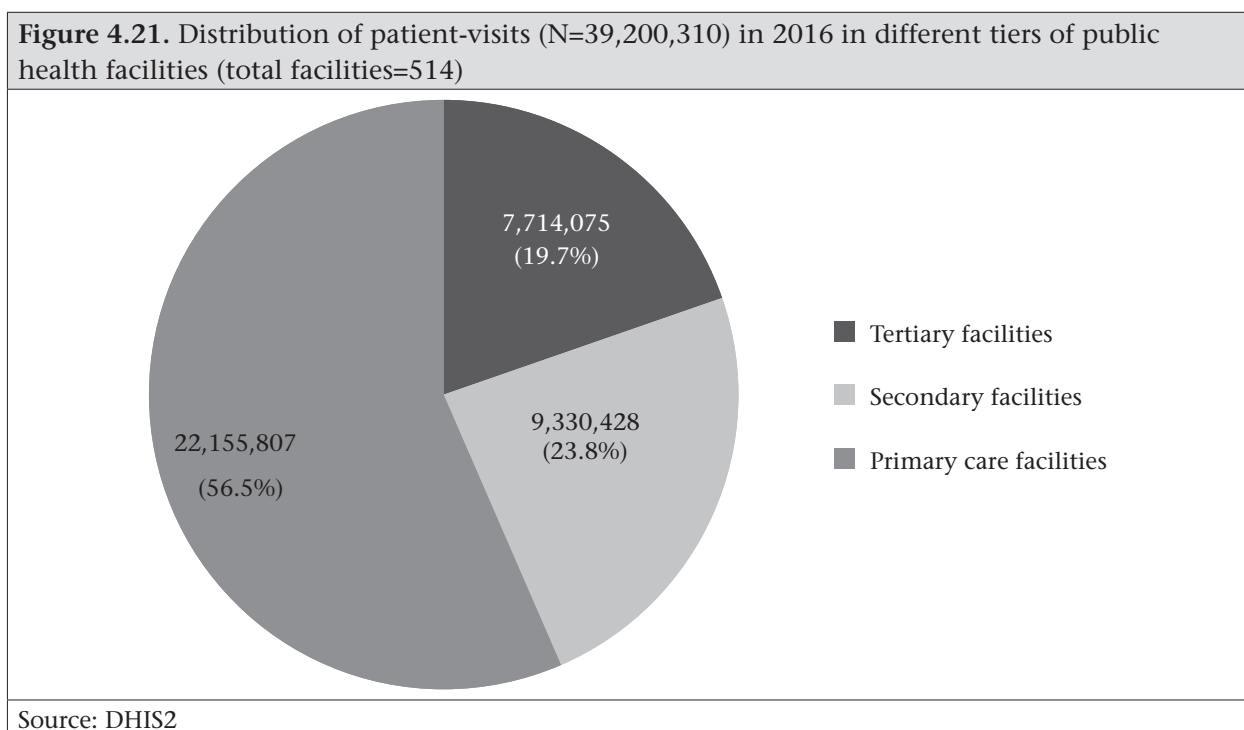


Figure 4.31 shows the major causes of under-five mortality in UHCs in 2016.

Respiratory tract infections were the topmost causes of mortality among under-five children in upazila health complexes in

2016. Other causes of mortality in upazila health complexes were asphyxia, sepsis, low birthweight, etc.

Figure 4.32 shows under-five mortality according to causes in 2016.

Level of care	Type of facilities	Number of facilities	Total OPD visits
Primary	10-bed hospital	2	19,548
	20-bed hospital	7	89,440
	31-bed hospital	2	133,235
	50-bed hospital (renamed Shaheed Ahsanullah Master 250-bedded General Hospital, Tongi)	1	175,788
	Upazila health complex	414	21,654,136
Secondary	District hospital/General hospital	63	9,414,088
Tertiary	500-bed hospital	2	958,173
	Bangladesh Institute of Tropical and Infectious Diseases, Foujdarhat	1	29,755
	Medical college hospital	13	6,016,347
	20 bed Infectious Disease Hospital, Faujdarhat	1	9
	Other tertiary hospitals (National Institutes, Pabna Mental Hospital)	8	709,791
	Total	514	39,200,310

Source: DHIS2

Figure 4.22. Gender distribution among attendees (total visits: 39,200,310) at the outpatient departments of all facilities in 2016

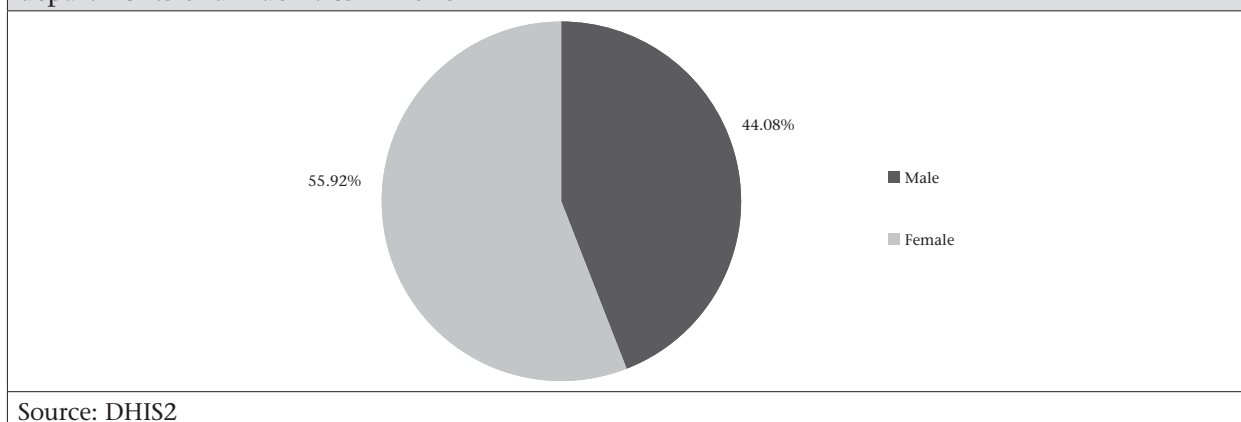


Figure 4.23. Age and sex distribution of the OPD-attendees in 2016

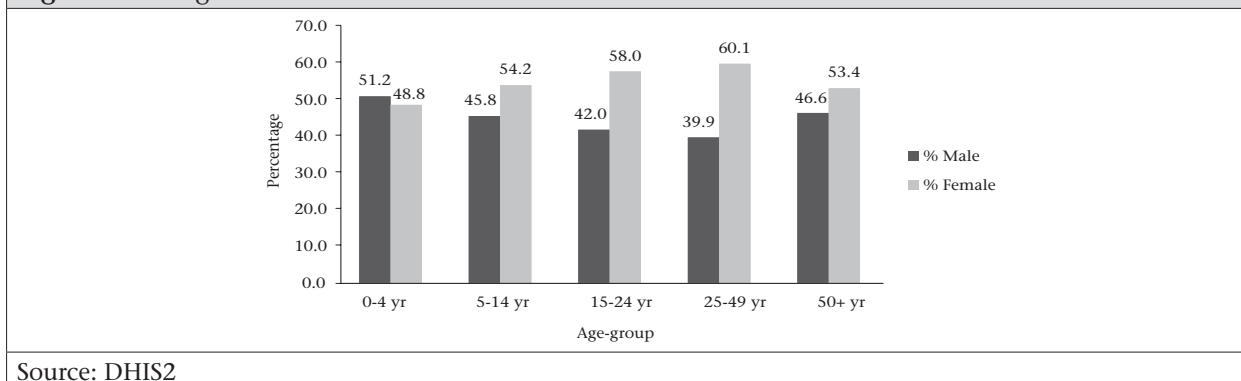


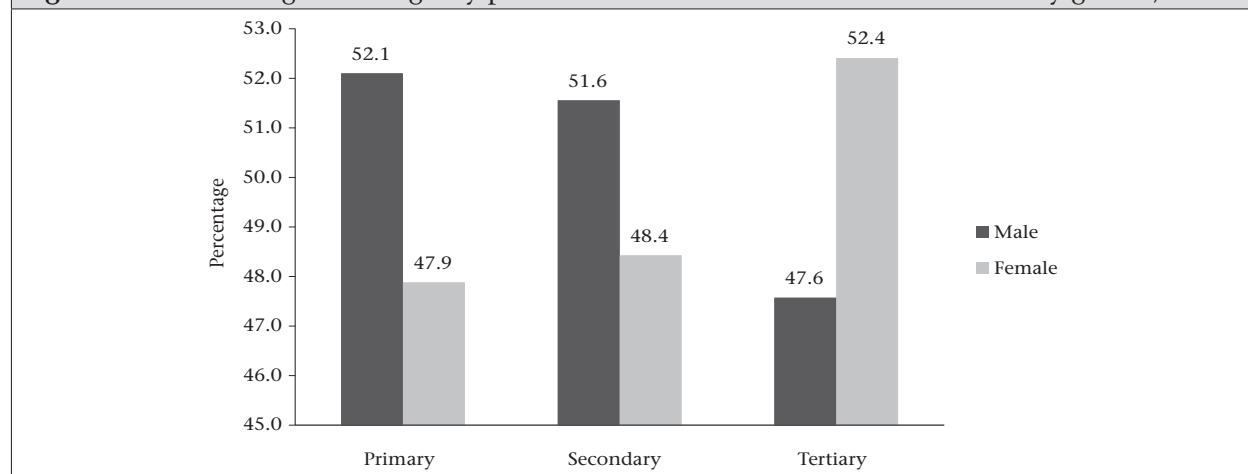
Table 4.14. Age and sex distribution of the emergency-attendance among different levels of all hospitals in 2016

Level of care	Type of facility	Number of facilities	Total emergency patients	Male		Female	
				< 5 yr	>5 yr	<5 yr	>5yr
Primary	10-bed hospital	1	23	1	10	2	10
	20-bed hospital	4	13,595	808	6,177	1,083	5,527
	31-bed hospital	2	4,882	146	2,728	101	1,907
	50-bed hospital*	1	36,125	1,271	21,540	1,009	12,305
	Upazila health complex	418	2,673,976	197,439	1,191,854	167,136	1,117,547
Secondary	District hospital/ General Hospital	62	1,922,512	141,316	850,047	132,934	798,215
Tertiary	500-bed hospital	2	60,890	3,600	29,080	2,590	25,620
	Bangladesh Institute of Tropical and Infectious Diseases, Fojdarhat	1	2,719	26	1,417	23	1,253
	Medical college hospital	13	1,329,820	62,574	549,024	51,562	666,660
	Other tertiary hospitals (National Institutes, Pabna Mental hospital)	6	97,359	1,653	61,936	1,185	32,585
	Total	510	6,141,901	408,834	2,713,813	357,625	2,661,629

Source: DHIS2

* Renamed Shaheed Ahsanullah Master 250-bedded General Hospital, Tongi

Figure 4.24. Percentage of emergency patients at different levels of health facilities by gender, 2016

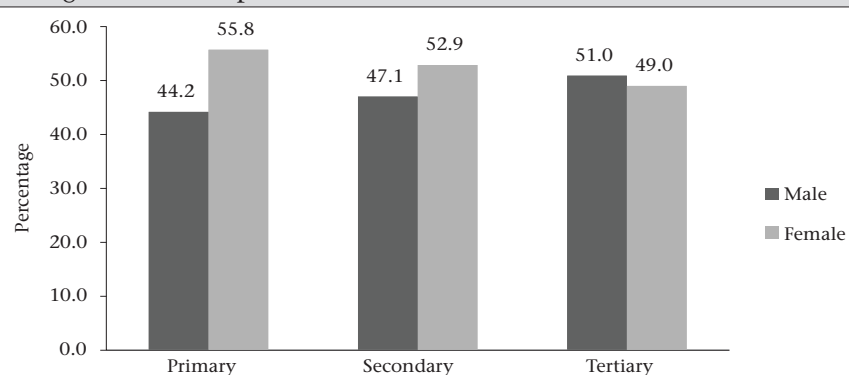


Source: DHIS2

Table 4.15. Data on admissions and inpatients with age and sex distribution in all types of hospitals in 2016

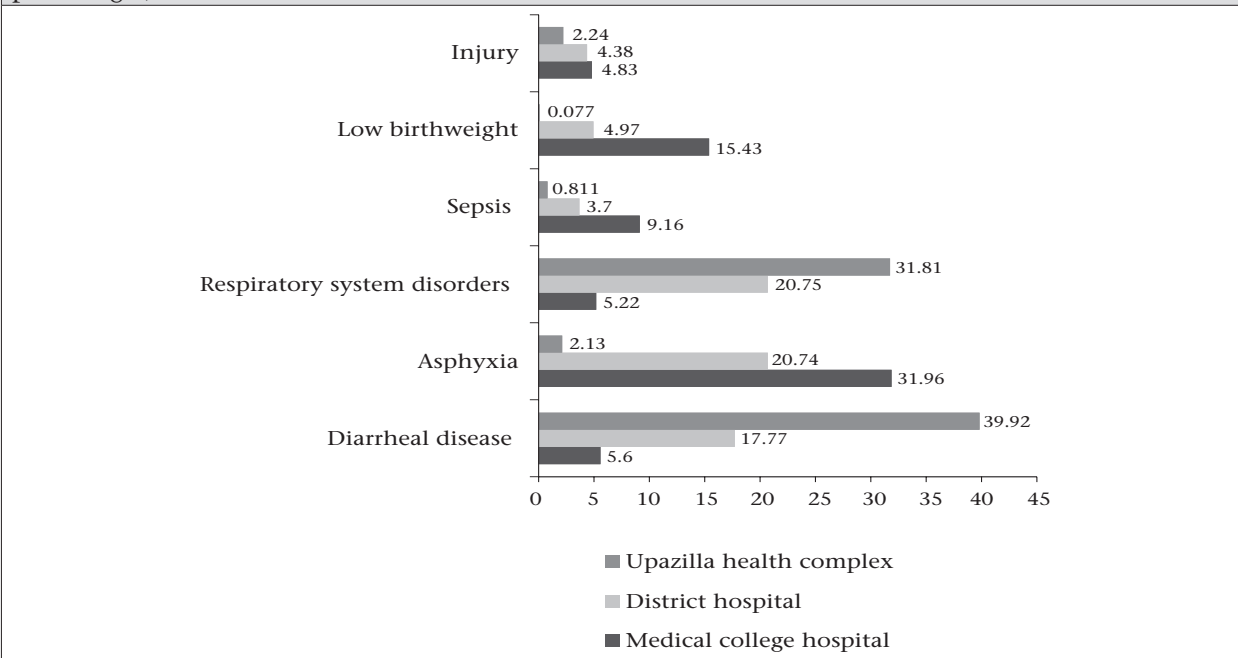
Level of care	Type of facility	Number of facilities	Total IPD visits	Male		Female	
				< 5 yr	>5 yr	<5 yr	>5yr
Primary	10-bed hospital	1	27	2	17	1	7
	20-bed hospital	2	8,148	578	3,516	715	3,339
	31-bed hospital	2	4,625	138	2,545	81	1,861
	50-bed hospital*	1	5,642	285	2,689	222	2,446
	Upazila health complex	400	1,943,074	168,028	689,763	127,427	957,856
Secondary	District hospital/ General hospital	62	1,467,706	155,629	535,278	120,449	656,350
Tertiary	500-bed hospital	2	29,356	2,123	11,921	1,442	13,870
	Bangladesh Institute of Tropical and Infectious Diseases, Fouljadarhat	1	2,825	25	1,443	32	1,325
	Medical college hospital	13	1,317,950	81,769	576,206	73,534	586,441
	Other tertiary hospitals (National Institutes, Pabna Mental hospital)	7	77,480	1,127	52,948	697	22,708
Total		491	4,856,833	409,704	1,876,326	324,600	2,246,203

Source: DHIS2
* Renamed Shaheed Ahsanullah Master 250-bedded General Hospital, Tongi

Figure 4.25. Percentage of admitted patients at different levels of health facilities according gender, 2016

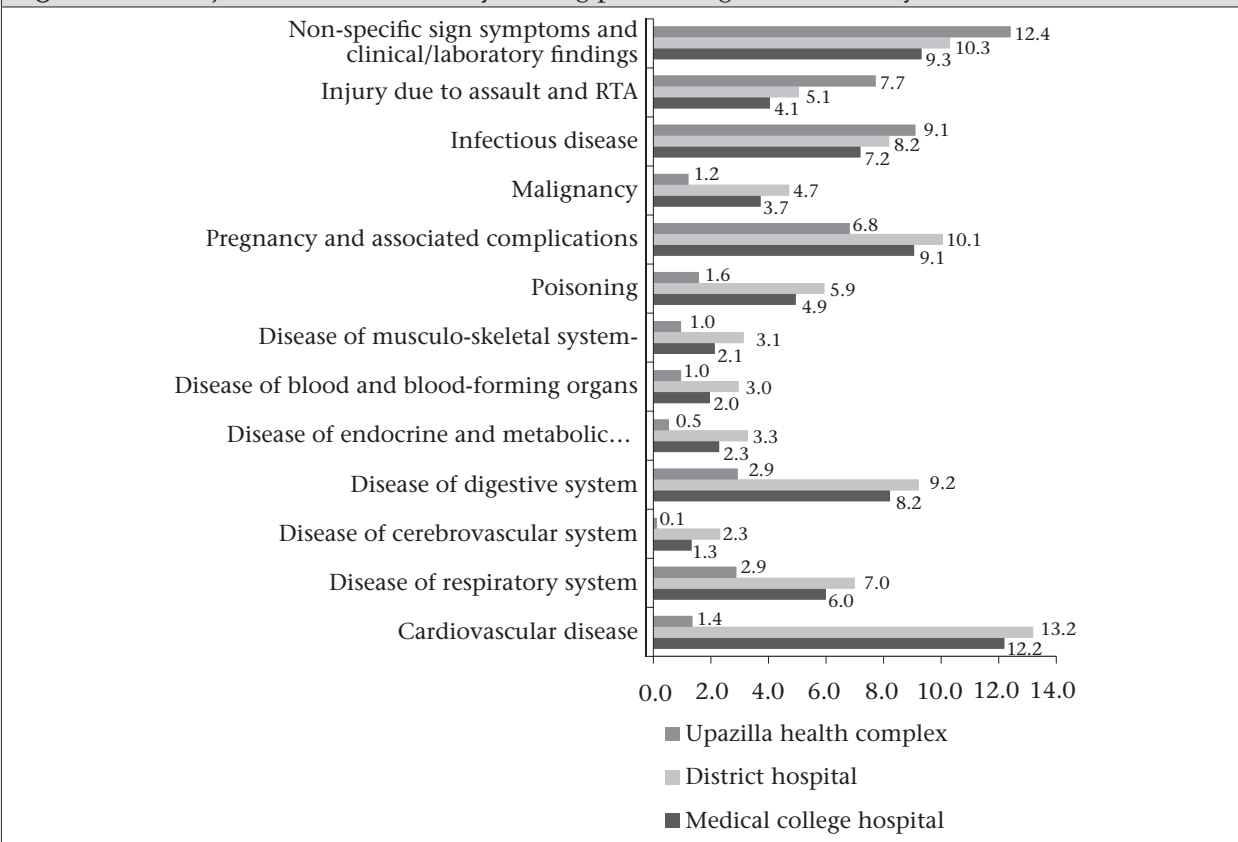
Source: DHIS2

Figure 4.26. Major causes of hospital admission at different levels among under-five children showing percentages, 2016

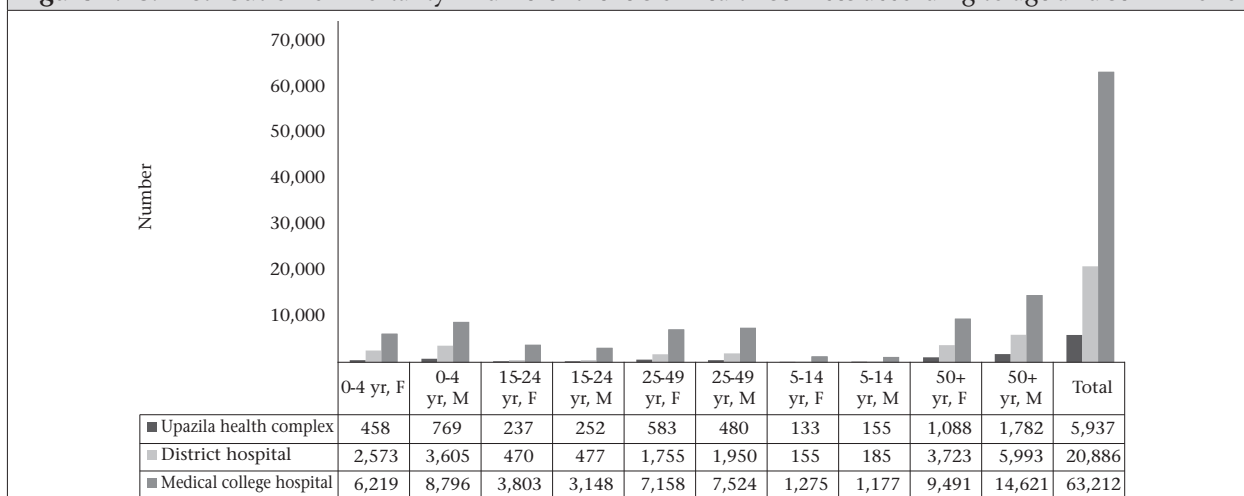


Source: DHIS2

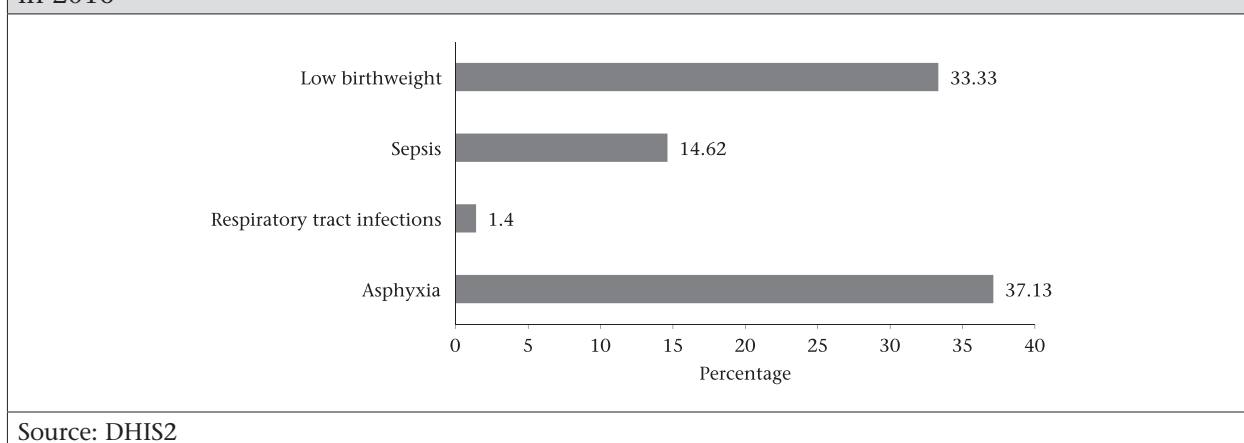
Figure 4.27. Major causes of morbidity among patients aged above five years in 2017



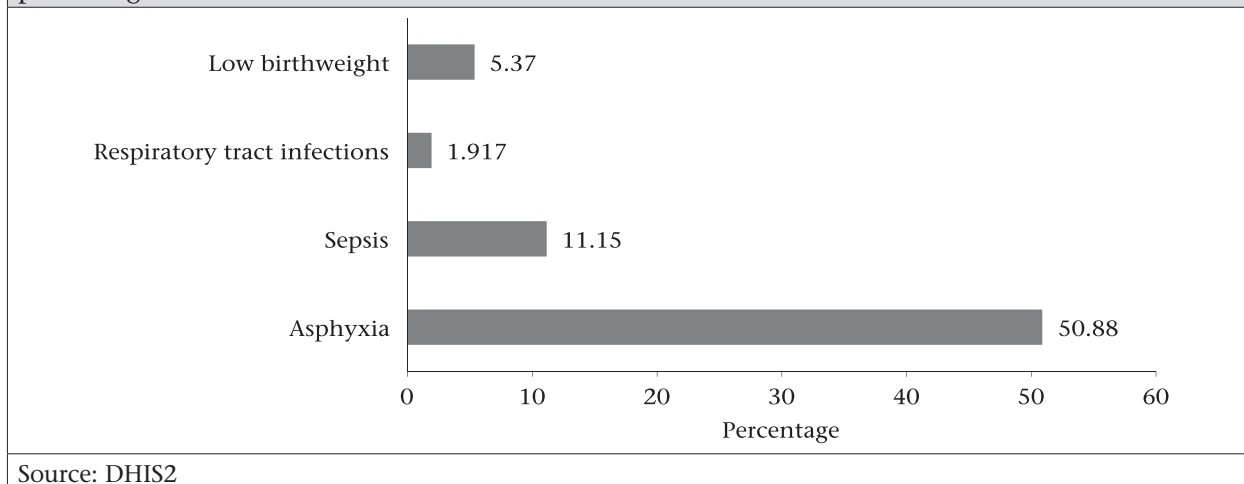
Source: DHIS2

Figure 4.28. Distribution of mortality in different levels of health services according to age and sex in 2016

Source: DHIS2

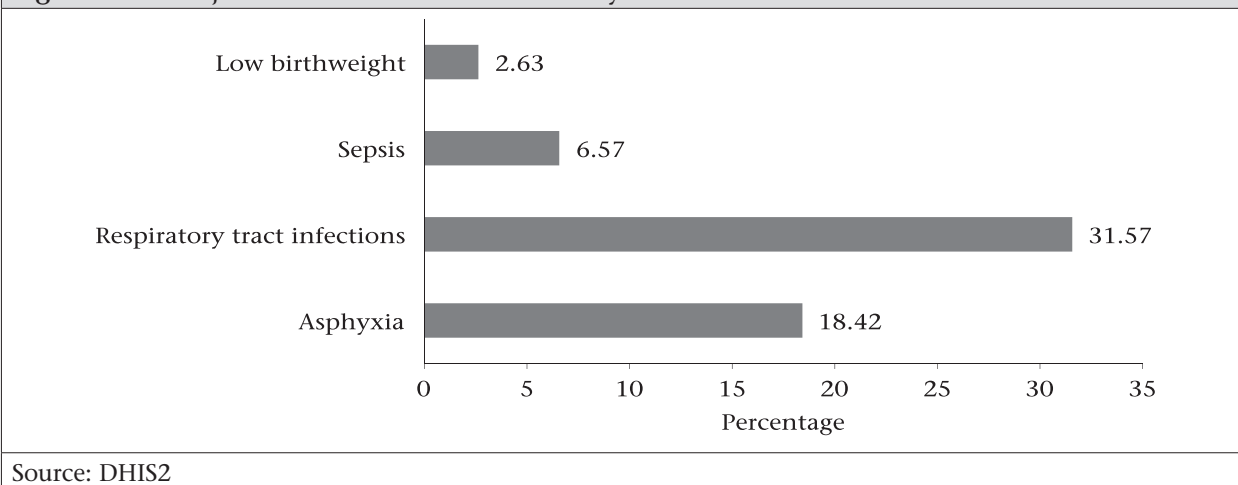
Figure 4.29. Major causes of mortality among under-five children in medical college hospitals in 2016

Source: DHIS2

Figure 4.30. Major causes of under-five mortality in district-level hospitals in 2016 in percentages

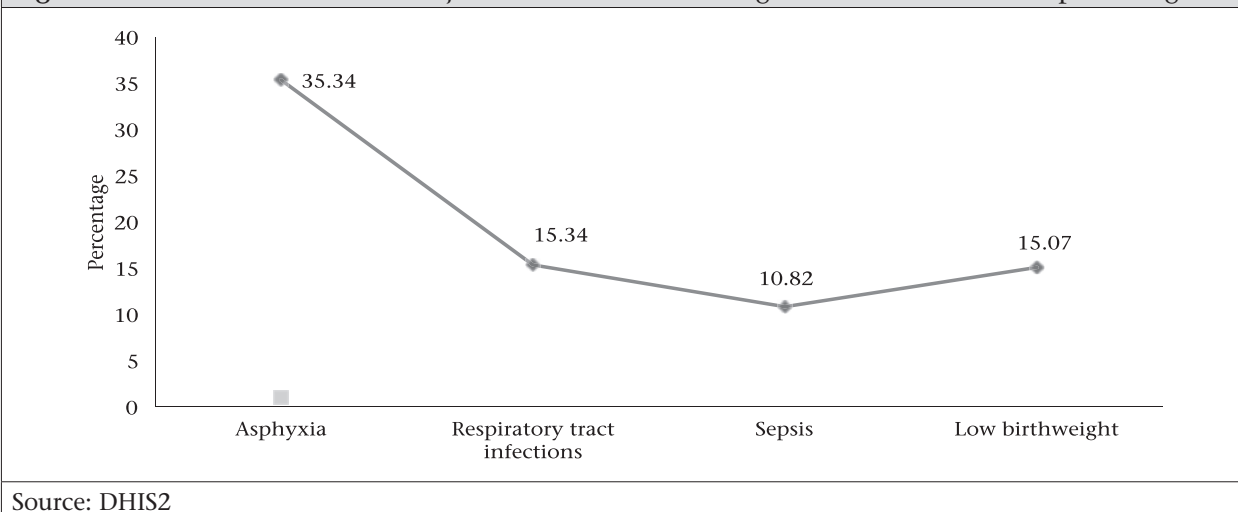
Source: DHIS2

Figure 4.31. Major causes of under-five mortality in UHCs in 2016



Source: DHIS2

Figure 4.32. National trends in major causes of death among under-five children in percentages



Source: DHIS2

Asphyxia caused higher percentage of mortality in 2016, followed by respiratory tract infections, low birthweight, and sepsis.

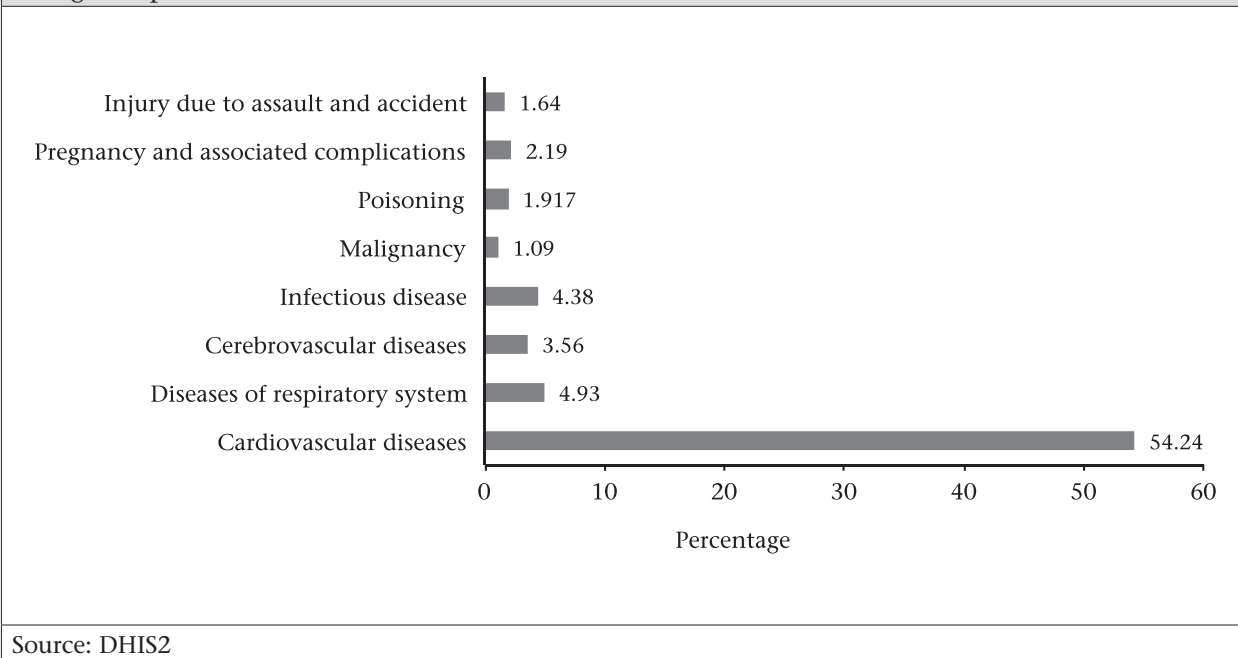
Mortality among patients aged above 5 years

Figure 4.33 shows the major causes of mortality in MCH in 2016 among patients aged over 5 years.

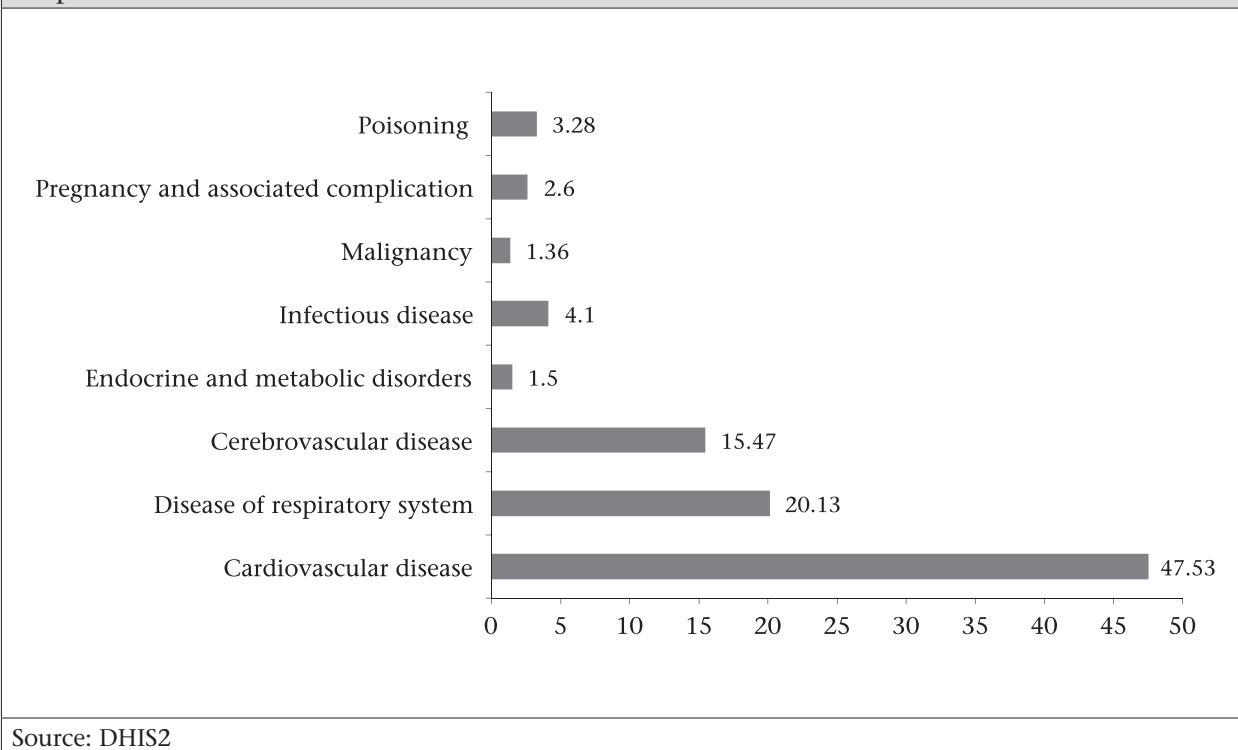
Malignancy was the least and cardiovascular disease was the highest cause of mortality in MCHs. Other causes were diseases of respiratory system, cerebrovascular diseases, infectious diseases, poisoning, pregnancy and associated complications, injury due to assaults and accidents, etc.

Figure 4.34 shows the top causes of mortality (%) among patients aged above five years in district-level hospitals.

Malignancy was the least and cardiovascular disease was the highest cause of mortality in district-level hospitals. Other major causes were diseases of respiratory system, cerebrovascular diseases, infectious diseases, poisoning, pregnancy and associated complications, injury due to assaults and accidents, etc. This implies that a common scenario in mortality profile among patients aged above 5 years was reflected from both medical college hospitals and district-level hospitals.

Figure 4.33. Major causes of mortality among patients aged above five years in different medical college hospitals in 2016

Source: DHIS2

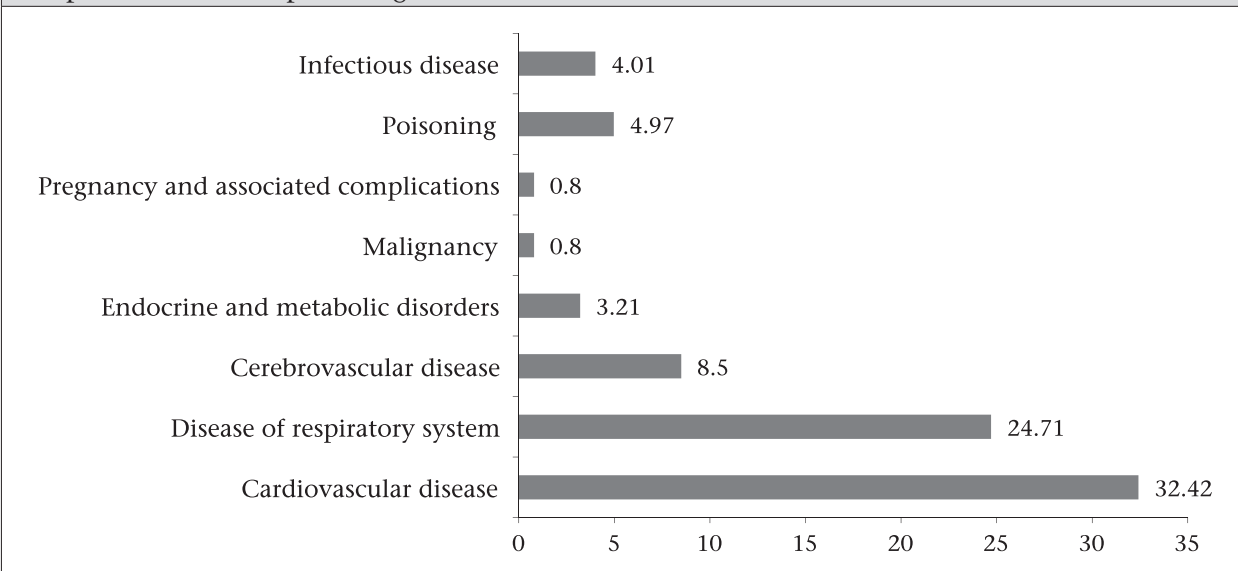
Figure 4.34. Top causes of mortality (%) among patients aged above five years in district-level hospitals in 2016

Source: DHIS2

Figure 4.35 shows the major causes of mortality among patients aged above five years in upazila health complexes in 2016 in percentages.

Pregnancy and associated complication was the least and cardiovascular disease was the highest cause of mortality.

Figure 4.35. Major causes of mortality among patients aged above five years in upazila health complexes in 2016 in percentages



Source: DHIS2

Figure 4.36 shows the major causes of mortality among patients aged above five years in 2016.

Number of deaths in different health facilities according to sex (up to September 2017)

The total number of deaths up to September 2017 according to sex in different health facilities is illustrated in Figure 4.37 and related text.

Number of deaths was the highest in district hospitals for males and females. In all health facilities, the males had a higher count of deaths than the females, and transgender had the least count.

Deaths that occur in residents and private health facilities largely remain unreported. Recently, measures are being taken jointly by the newly-formed Civil Vital Registration (CRVS) Secretariat of the Cabinet Division and the DGHS to ensure death notifications from the community and all health facilities.

Efficiency in utilization of hospital resources

Conventionally, the utilization efficiency

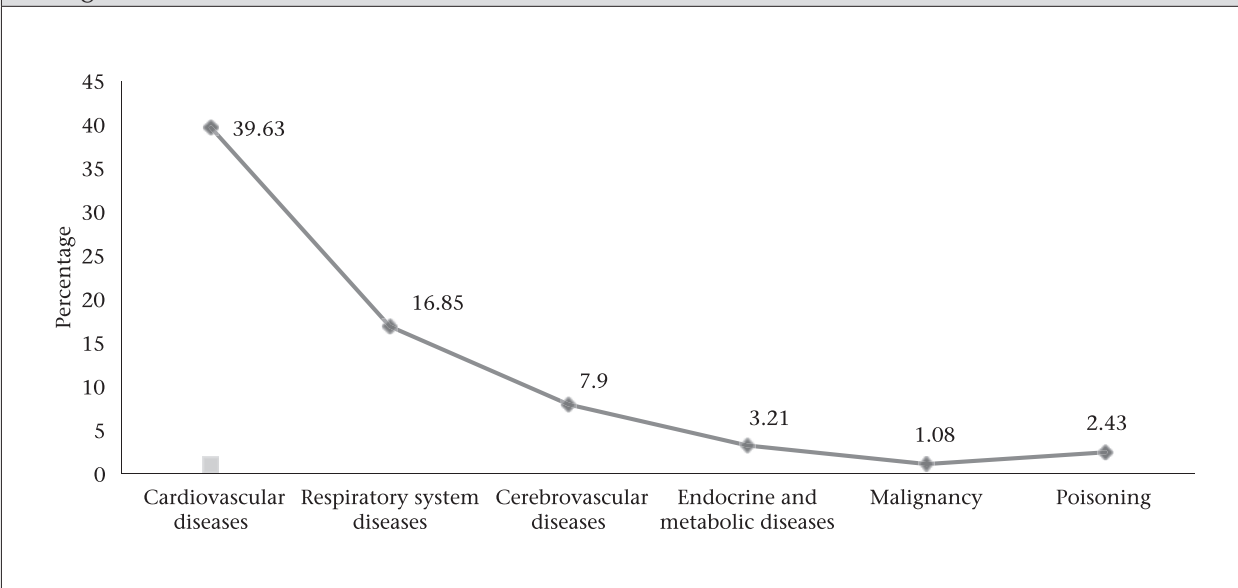
of hospitals is assessed in terms of average length of stay (ALOS) and bed-occupancy rate (BOR). We analyzed the utilization efficiencies of hospitals by grouping them into 3 categories, viz. upazila health complexes (UHC), district and general hospitals (DH/GH), and medical college hospitals (MCHs). The analyses are based on hospital statistics available from the DHIS2 of 2016 data.

Average length of stay

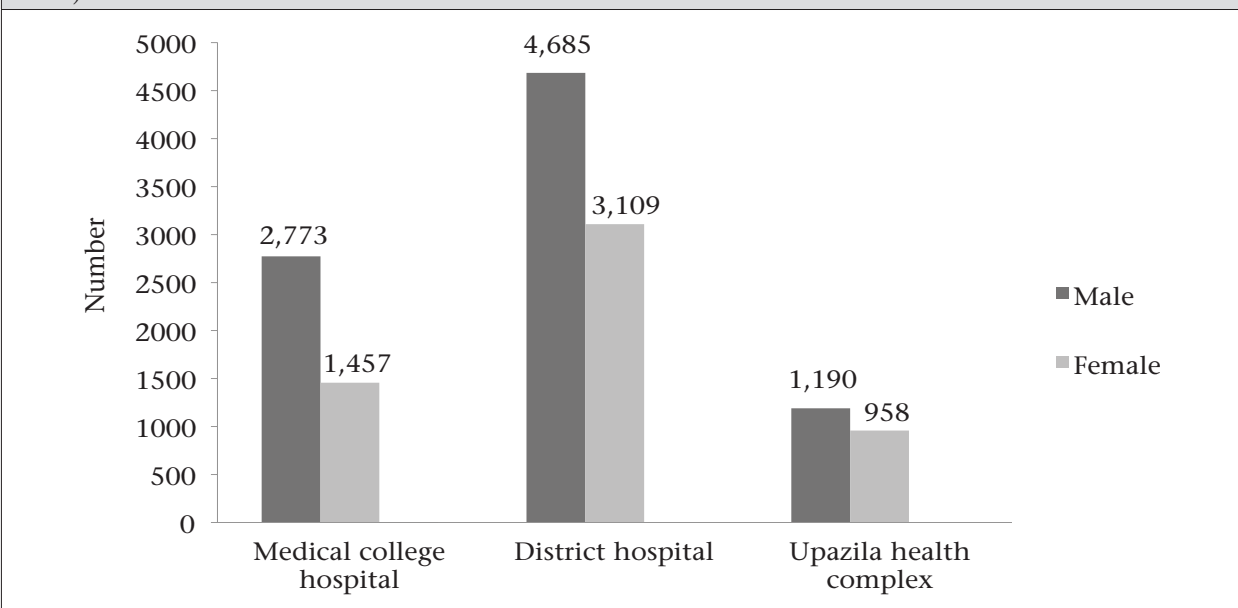
Average length of stay (ALOS) in a hospital is calculated by the following formula:

$$\text{ALOS} = \frac{\text{Cumulative inpatient days}}{\text{no. of admissions}}$$

The average length of stay, as the name suggests, represents the time a patient stays in the hospital. A longer average length of stay is to be expected in the case of hospitals having better facilities, such as in the medical college hospitals or specialty institutes. In the case of primary healthcare centers where the level of treatment in general is lower, the average length of stay is likely to be less.

Figure 4.36. National trends in major causes of mortality among patients aged above five years during 2016

Source: DHIS2

Figure 4.37. Number of deaths in different health facilities according to sex (up to September 2017)

Source: DHIS2

Figure 4.38 shows the ALOS of different types of hospitals in 2015 and 2016. Expectedly, the longest ALOS was observed at the medical college hospital and the lowest at the primary-level upazila hospitals in both the years.

Bed-occupancy ratio

Bed-occupancy ratio (BOR) is calculated by the following formula:

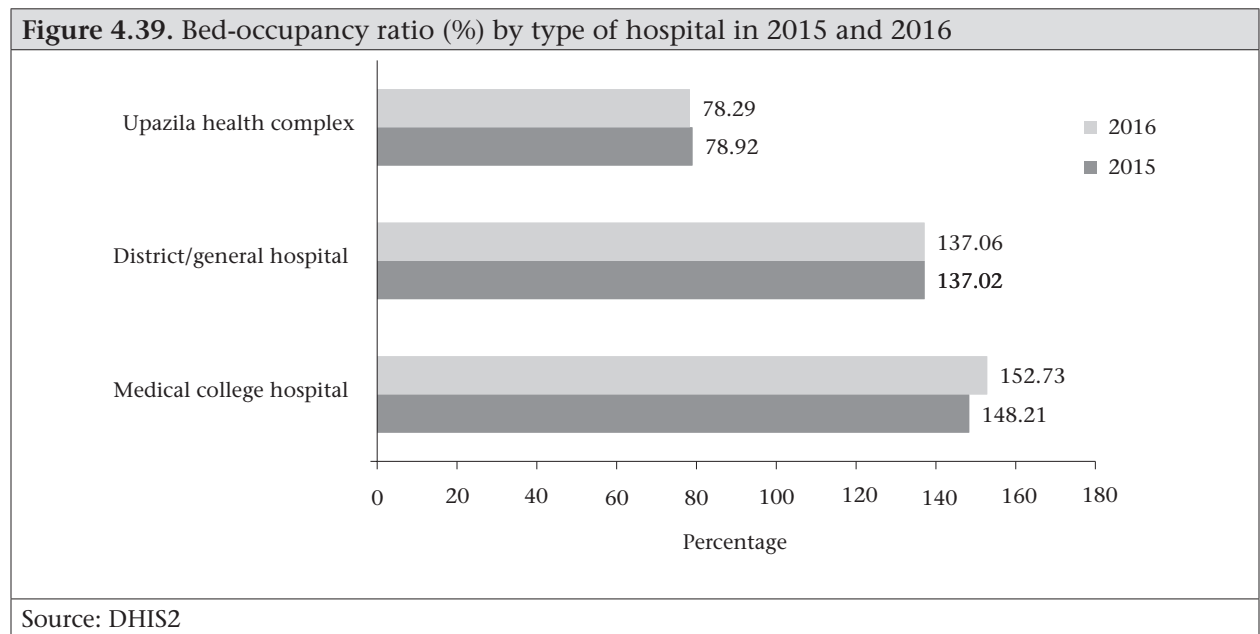
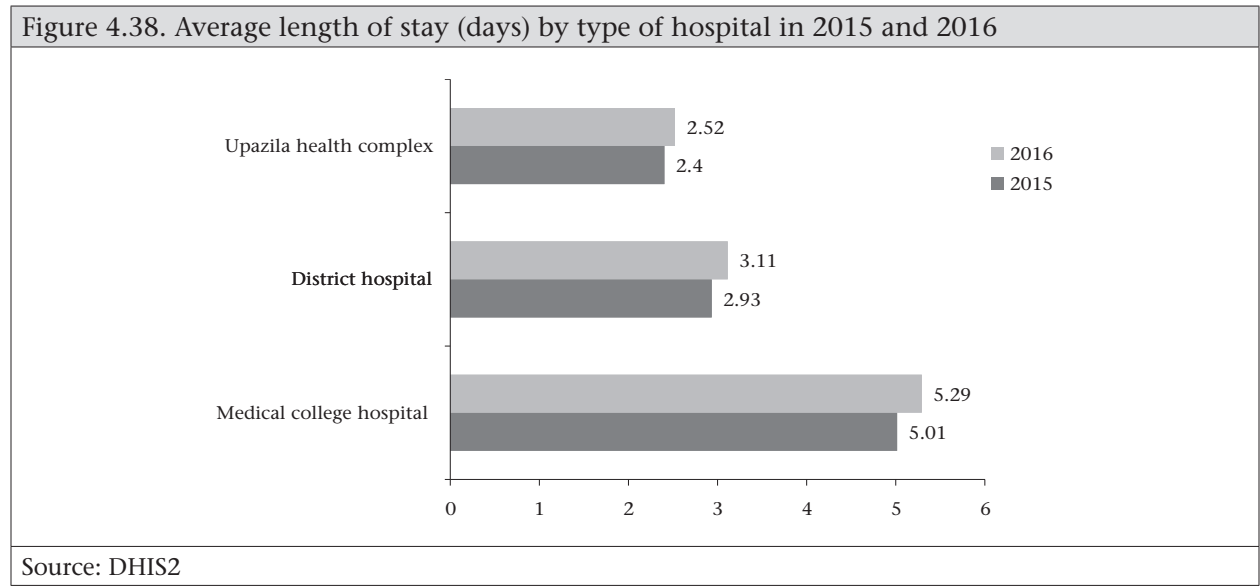
$$\text{BOR (\%)} = \frac{\text{Cumulative inpatient days} \times 100}{\text{Number of beds} \times \text{days}}$$

BOR is a measure of the utilization of available bed-capacity. It reflects the popularity of the hospitals among the admitted patients. The level of bed-occupancy varies with the type of facilities available in the hospital. It is normally expected that the bed-occupancy ratio in higher-level hospitals will be higher than that in the primary-level hospitals.

Figure 4.39 shows the BOR in different types of hospitals. The medical college hospitals, in this regard, are placed at the top, followed by district-level secondary hospitals, both

having BOR of more than 100%. This means that these hospitals are handling patients in excess in terms of their bed-capacities. In both medical college hospitals and district hospitals, BOR had increased in 2016. Upazila health complexes had comparatively lower bed-occupancy ratio, indicating underutilization of hospital resources. As these hospitals lack adequate facilities, patients prefer the higher-level hospitals whenever possible.

While the indicators described above (BOR and ALOS) are the most acceptable parameters



for judging hospital efficiencies, evaluating a hospital by considering only one of these may be inadequate or even deceptive. So, for capturing a more accurate scenario, Hipólito Pabón Lasso, a Colombian scholar, developed a graphical model by combining all of these indicators back in 1986. This model, named after its inventor, is now widely used for evaluation of hospital performance. Hospitals under evaluation will occupy one of the four zones constructed by two perpendicular lines in the graphical model. One line is drawn from average BOR point on horizontal (X) axis and the other from average TOR on the vertical (Y) axis. Either standard values of the parameters or the average values of the parameters from all hospitals under evaluation can be used for making the subdivisions. The graphical model is shown in Figure 4.40.

In general, district-level hospitals as well as the medical college hospitals both fall in the efficient zone of the model from the group-wise comparison done. However, the comparisons should be ideally done among hospitals of similar categories. Interested readers can compare the efficiencies of selected hospitals using this model and taking data presented in the Annex.

Civil Registration and Vital Statistics (CRVS) System in Bangladesh

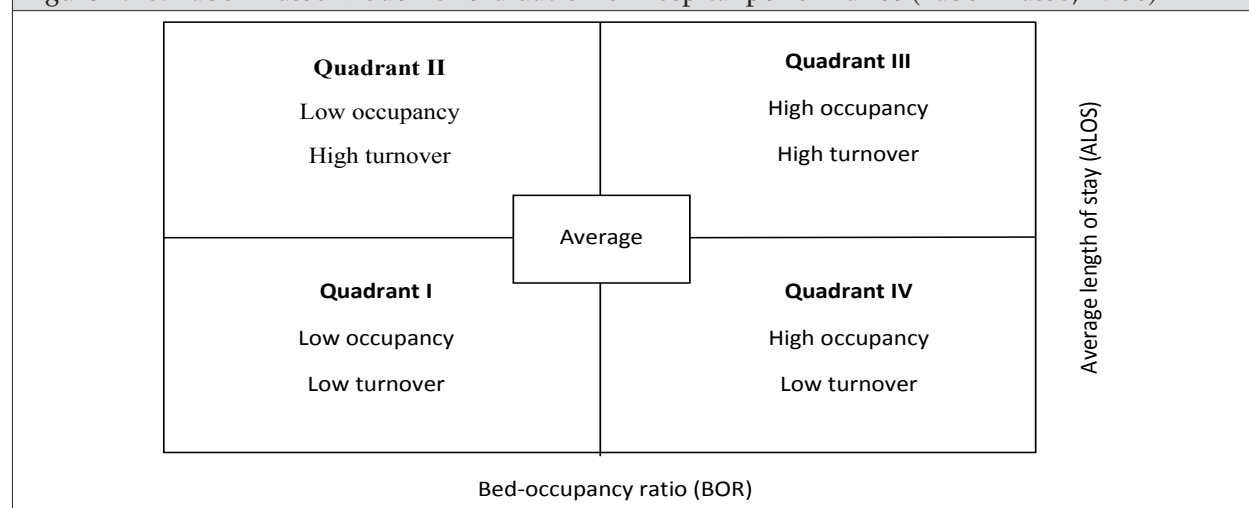
Implementing Civil Registration and Vital

Statistics (CRVS) system has been given a special importance in Bangladesh. It is an opportunity for us to streamline and synchronize the civil registration processes being administered by different government agencies. This is done in collaboration with the Bangladesh Bureau of Statistics (the national vital statistics producer) to develop a common service platform for the people. To realize this opportunity, the Government of Bangladesh adopted a ‘whole-of-government’ approach, and the Cabinet Division is given the responsibility to lead the effort. It established a ‘CRVS Secretariat’ and formed a national-level interministerial coordination and supervision committee, i.e. CRVS-related Steering Committee led by the Cabinet Secretary.

The CRVS system in Bangladesh (Figure 4.41) is the shared functional responsibility of four principal government agencies, i.e. (1) Office of the Registrar General (ORG), Birth and Death Registration, Local Government Division; (2) Bangladesh Bureau of Statistics (BBS), Statistics and Informatics Division, (3) Directorate General of Health Services (DGHS), Health Services Division; and (4) Office of the Inspector General of Registration, Law and Justice Division.

Bangladesh introduced online Birth Registration Information System (BRIS) in 2010 to replace manual birth registration. It is also used for death

Figure 4.40. Pabon-Lasso Model for evaluation of hospital performance (Pabón Lasso, 1986)



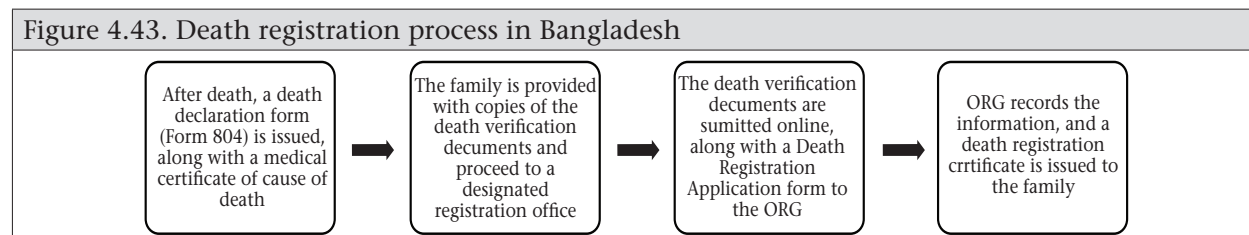
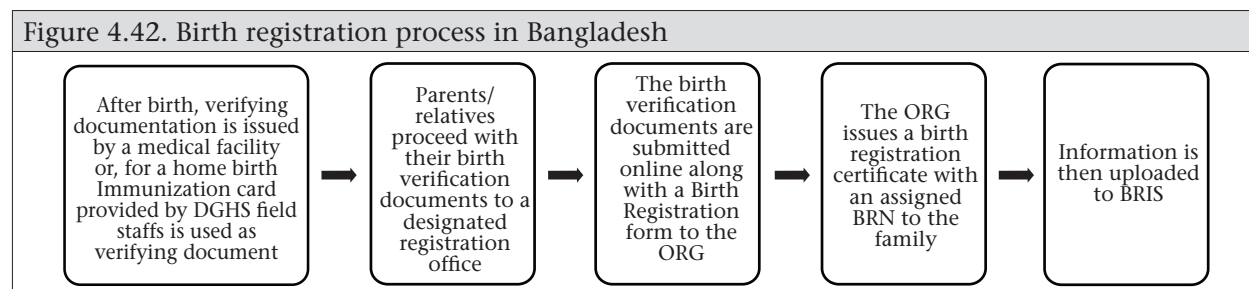
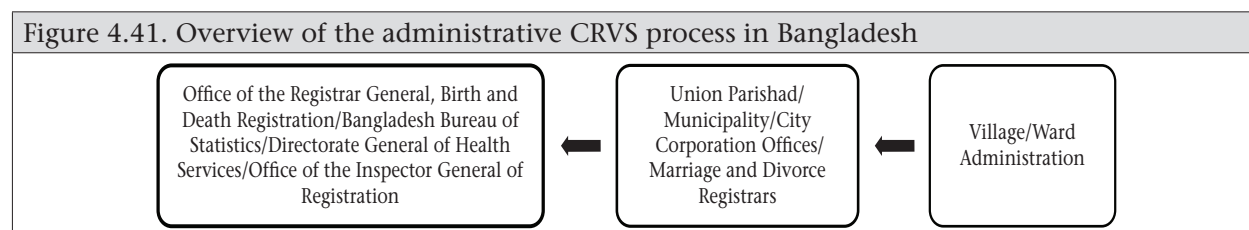
registration. However, along with the online registration process, paper-based application process is also available for the time being. So far, over 157.48 million (as of 15 October 2017) births have been digitally registered in BRIS at 5,085 local and foreign-based registration offices (Figure 4.42). Each birth that has been registered is assigned a 17-digit Birth Registration Number (BRN). Pursuant to the Birth and Death Registration Act of 2004, both registration and the issuance of certificates are free of charge for birth and death. Registration is compulsory within 45 days following the birth and death, a late-fee is charged for any registration occurring after 45 days.

Death registration process is similar to that for births. Hospitals use Form 804 for death declarations as well as their perceived cause of death. Birth registration is mandatory to do the death registration. Bangladesh has recently started practising the international standard medical certificate of cause of death in 4 hospitals and introduced MCCoD in another 19 hospitals on piloting basis. At selected large

hospitals where many deaths occur, physicians have been trained to use the ICD certificate for cause of death, and statistical coding is done according to the Startup Mortality List (ICD-10-SMoL). Verbal Autopsy (VA) also has been introduced in selected areas of the country for community-level deaths for which there is no medical certificate on cause of death. Death registration is mandatory for conducting VA. Since there are no electronic linkages between the ORG's BRIS and DGHS database yet, these deaths, along with causes of deaths, are not being notified directly.

National CRVS coordination mechanism

In late 2014, Bangladesh established a National Coordination Mechanism, namely the CRVS-related Steering Committee. The Steering Committee is convened by the Cabinet Secretary and comprises 22 members from various agencies and two special invitees. The agencies include the: Finance Division (FD), Ministry of Home Affairs (MOHA), Economic Relations Division (ERD), Ministry of Primary



and Mass Education (MOPME), Ministry of Health and Family Welfare (MOHFW), Prime Minister's Office (PMO), Ministry of Education (MOE), Post and Telecommunications Division (P&TD), Election Commission of Bangladesh (ECB), Planning Division (PD), Cabinet Division (CD), ICT Division (ICTD), Implementation, Monitoring & Evaluation Division (IMED), Local Government Division (LGD), Statistics and Informatics Division (SID), Law and Justice Division (L&JD), BBS, DGHS, and the ORG. The two special invitees are: Additional Director General (Planning and Development) from the DGHS and the Policy Advisor for the Access to Information (a2i) Program. The roles and responsibilities of the inter-agency Steering Committee include the coordination of activities relating to CRVS development, providing direction for ministries responsible for implementation of CRVS-related activities and revising/reviewing/disseminating national plans and documents. To realize the proper implementation of CRVS, the Steering Committee established the CRVS Secretariat at the Cabinet Division.

Integrated and 'Whole-of-government' approach

Implementation of CRVS has been given a special importance since it is an opportunity to streamline and synchronize the CR process being administered by different government agencies with the BBS to develop an integrated service development platform. The 'whole-of-government' approach has been adopted. The CRVS Secretariat plays the pivotal role in this regard. It provides supervisory and coordinating support to the four principal organizations mentioned above. With technical support from the a2i program, the interoperability of databases as an Integrated Service Delivery Platform (ISDP) is being developed to connect all relevant public agencies in order both to modernize service delivery and support. Along with the CR agencies, the education system has a very crucial role to play in developing the baseline for CRVS. The NID Wing of the Election Commission provides

basis for the unique ID system developed by the CRVS Secretariat. All IDs will be converged eventually to form the UID for each and every person of the country. That is why we call CRVS as the CRVS++ in our country.

Comprehensive multisectoral national CRVS strategy

In 2014, with the assistance from WHO, the MOHFW conducted a comprehensive assessment of the CRVS system, using the standard assessment tool developed by WHO and the University of Queensland. Following that, Bangladesh developed a CRVS Strategic Action Plan (SAP), including key recommendations, identification of responsible agencies as well as estimated budgets and timelines. Recently, Enterprise Architecture (EA) of the CRVS has been developed, and review of the legal framework has been done. Therefore, the SAP is now under the process of being revised.

Key achievements during 2016-2017

In 2016, Bangladesh established the ORG whose primary responsibility is: facilitating birth and death registration as well as maintaining BRIS.

As part of the a2i initiative, Bangladesh inaugurated the "age verification and marriage registration through mobile apps", to use registration as a means of supporting local leaders to prevent child marriage.

The MOHFW, with coordinating support from the CRVS Secretariat, also made progress on improving the links between the health sector and registration services, including piloting programs for training in the use of MCCoD, VA and ICD-10 (including SMoL) as well as improving the quality and collection of VS data by incorporating key variables into the DHIS2 to enable real-time data-tracking.

Key priorities for improvement

- Stronger enforcement of existing legislation requiring birth and death registration

- Creating legislation requiring cause of death registration
- Streamlining coordination and monitoring of the country's various registration points to complete the transition to digital registration
- Effective linkage between civil registration data and the ORG to notify the CRVS system
- Developing a comprehensive public awareness campaign to raise awareness of the necessity of birth registration
- Significantly increasing the availability of high-quality, timely and reliable disaggregated data

Partner-supported activities (2016–2017)

Nationally-focused activities

- Under the leadership and management of the CRVS Secretariat, WHO and D4H are working with the MOHFW to increase the use of medical certification of cause of death, using ICD coding and verbal autopsies. So far, 2,200 VAs are done, 2,600 MCCoDs are issued and have been transmitted to SMOl module in DHIS2 of the DGHS
- D4H is working with the DGHS to improve the data quality and collection for vital statistics reporting
- UNHCR is working to end statelessness for migrants
- Recently, the MOHFW has decided to incorporate detailed cause of death in the undergraduate medical curriculum and create permanent post of coders
- UNICEF is helping the DGHS in streamlining service delivery by tracking health information
- UNFPA is working to strengthen the national statistical system for data collection and analysis so that data for development policies can be identified and made available
- Under the leadership and management of the CRVS Secretariat, the D4H is working

with the MOHFW and ORG to pilot at the Kaliganj, Gazipur, to facilitate birth and death registration by using frontline health and family planning workers to assist families with the registration process

- Birth and death registration within 45 days has been enhanced remarkably in Kaliganj. The Government has decided to scale up the Kaliganj Model of birth and death notification and registration using Verbal Autopsy in 11 subdistricts and MCCoD in 8 tertiary-level hospitals, including the Dhaka Medical College Hospital.

Emergency preparedness

Bangladesh is a country vulnerable to a number of natural and man-made disasters. Bangladesh ranks 5th in the World Risk Index 2012, which means that the country bears the combination of extreme exposure and high vulnerability.

Bangladesh's Emergency Response Preparedness Plan 2014

The Bangladesh's Emergency Response Preparedness Plan 2014 is developed on the basis of the IASC Inter-agency Emergency Response Preparedness (ERP) guidance issued in August 2012. The primary aim of the ERP approach is to optimize the speed and volume of critical assistance delivered immediately after the onset of a humanitarian emergency. It provides practical guidance to assist IASC members, other UN agencies, and NGOs in preparing to respond to potential emergencies with appropriate humanitarian assistance and protection. It focuses on practical and concrete preparedness and response actions and responsibilities and seeks to harmonize the overall coordination regarding emergency preparedness and response at inter-agency level. The ERP approach has three inter-related levels of action as follows:

- (a) Inter-agency Response Preparedness Planning and Standard Operating Procedures

- (b) Cluster/Sector Response Preparedness Planning and Standard Operating Procedures
- (c) Organization Specific Response Preparedness Planning

The three levels of preparedness are linked with one another and follow the same structural approach, with the Cluster/Sector Response Planning linked to the Inter-agency Response Planning. In this way, the new ERP methodology strengthens coordination not only at the inter-agency level but also among clusters/sectors avoiding fragmentation and ensuring coherence.

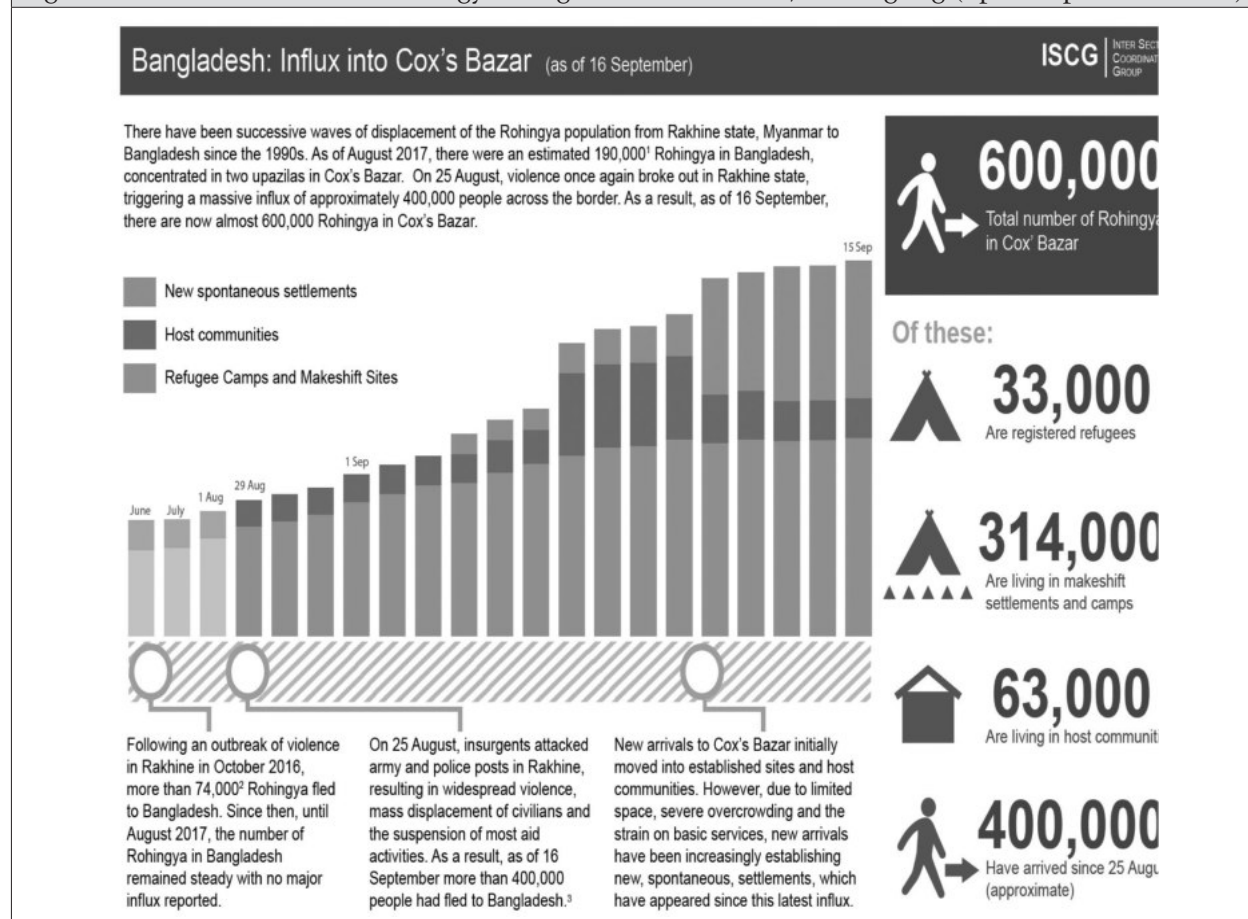
Health Intervention 2017 for Forcibly-displaced Myanmar Nationals (FDMNs)

There has been a huge influx of forcibly-displaced Myanmar nationals since 25 August

2017 with 620,000 new comers totaling 819,812 FDMNs to Bangladesh as of 12 November 2017. The sudden and massive influx of new arrivals has created an urgent need for massive scale-up of health services and support for an already vulnerable population. For those that have fled, significant health effects are being seen in terms of their physical, mental and social wellbeing.

Lack of services and extremely poor living conditions in camps and settlements are contributing to the overwhelming health needs for these populations. Crowded living conditions with a lack of adequate food, water, and sanitation are presenting serious public health risks, compounded by poor accessibility to new settlements and recent rains. Contributing factors of the overwhelming health needs of these populations are that many have experienced

Figure 4.44. Recent influx of Rohingya refugees in Cox's Bazar, Chittagong (up to September 2017)



devastation, lost family/relatives and properties, sustained physical injuries (such as burn, bullet and cut injuries) and made exhaustive travel (mostly on foot) often for several days without food, water, and rest. Most of the new arrivals included women and children; of the total caseload, an estimated 120,000 pregnant and lactating women required urgent assistance.

The sheer number of new arrivals has overwhelmed the existing health services. Overall, there is a scarcity of human, logistical and financial resources, which is causing significant gaps in the overall provision of essential lifesaving health services to affected populations and surrounding communities. There is an urgent



Health interventions for Rohingya refugees

need for massive scale-up of health service provision across all subsectors with a focus on emergency primary healthcare provision, reproductive, maternal and child healthcare as well as planning for outbreak preparedness and active response .

Demographic characteristics

- Female: 53%
- Male: 47%
- 0-5 years of age: 29%
- 6-17 years of age: 28%

- 18-59 years of age: 38%
- Above 60 years of age: 5%

Figure 4.44 highlights the recent influx of Rohingya refugees in Cox's Bazar.

In this huge population group, a large number of them are vulnerable; they include pregnant and lactating mothers, disabled persons, the elderly people, and separated children (Table 4.16).



Table 4.16. Vulnerable population groups among FDMNs

Vulnerable group	No.	%
Pregnant mothers	18,232	3.0
Lactating mothers	42,541	7.0
Disabled persons	2,431	0.4
Unaccompanied and separated children	1,215	0.2
Elderly people	27,185	4.0
Total	64,420	10.6

The DGHS under the guidance of the MOHFW is working with Armed Forces Division, UN Bodies, and international and national NGOs to deliver health services in a coordinated and comprehensive manner.

Type of health intervention: Preventive, promotive, and curative

Government healthcare providers

- Tertiary care: Two medical college

- hospitals and two Sadar hospitals
- **Secondary care:** Three upazila health complexes
- **Primary care:** Four union subcenters, four community clinics, and 20 camps

Non-government healthcare providers

International NGOs 14; local NGOs 19, UN organizations 7

Type of healthcare providers

- ◇ **Static health centers:** 147
 - Government: 25
 - Army: 10
 - Non-government: 112
- ◇ **Number of doctors:** 107
- ◇ **Mobile teams for vaccination:** 231
- ◇ **Ambulance service:** 21
- ◇ **Treatment provided**

Unexplained fever: 173,184; Cough and Cold: 133,861; Gastro-enteric problems: 113,376; Acute watery diarrhea: 100,589; Bloody diarrhea: 45,194; Skin infection: 92,707

◇ Immunization and supplementation

Cholera vaccine: First dose: 700,487; 2nd dose: 199,472; MR vaccine: First round 135,519; 2nd round 58,863; bOPV: First round 72,334; 2nd Round 236,696; Vitamin A: First round 131,590; 2nd round 59,526

◇ Supervision and monitoring

- High-level officials are in the field from Dhaka and Chittagong
- Hon'ble Minister for Health and Family Welfare visited twice, Honorable State Minister for Health and Family Welfare visited once; Secretary, Medical Education and Family Welfare is in the field, and Director General of the DGHS visited thrice.

	Name	Age (years)	Sex	Address
1	Hazera Begum	45	Female	Ashambosti, Rangamati
2	Nahid Sultana	14	Female	Muslimpara, VedVedi, Sodo, Rangamati
3	Moriom Begum	55	Female	Ward No-2©, Zeti No-6, Municipality, Cox's Bazar
4	Sayema Begum	45	Female	Purbo Boro Vewa, Chokoria, Cox's Bazar
5	Rahmatullah	47	Male	Purbo Domkhali, Chakaria, Cox's Bazar
6	Abdul Hakim	65	Male	Pecua, Cox's Bazar



A rescue team at work after a massive landslide in Chittagong

It has become one of the largest humanitarian crises in Bangladesh straining its health services and imposing threat of epidemic of a number of diseases among the FDMNs and also the host community of Cox's Bazar. The health service of Bangladesh has taken the challenge of dealing with the health interventions for the FDMNs from the very early stage of the crisis with stewardship and collaboration among the UN agencies, national and international NGOs, professional organizations, civil societies, and individual efforts. The health service could succeed in providing a world-class preventive,

across Chittagong, Cox's Bazar, and Rangamati, with at least 20,000 houses damaged in refugee camps for Rohingya Muslims displaced by conflict in neighboring Myanmar. As of 31 May, six people were reported to be killed in Bangladesh border, mostly due to falling trees and another nine by drowning (Table 4.17).

National response

- Thousands of families were left homeless when Cyclone Mora hit the coast of Bangladesh; they were helped in the

Serial	Name of district	Number of medical teams	Injured	Dead	Missing
1.	Chittagong	284	7	42	4
2.	Bandarban	41	7	6	2
3.	Rangamati	60	167	107	0
4.	Cox's Bazar	88	0	2	0
5.	Khagrachhari	-	6	3	0
Total		473	187	160	6

promotive and curative services. Although recent outbreak of diphtheria has created some concerns, it has been possible, in general, to prevent epidemics due to other potential agents, especially cholera, measles, malaria, etc. After the initial and short-term interventions, the health service has now concentrated on mid- and long-term plans taking into account the possibility of return of the FDMNs.

Cyclone Mora: A devastating situation

In May 2017, Bangladesh had to battle with a disaster—Cyclone Mora. With a relatively rapid intensification of Mora, Bangladesh authorities were hard-pressed to carry out evacuations and prepare for the storm. Maritime weather alerts were issued to the Bangladeshi ports of Chittagong, Cox's Bazar, Mongla, and Payra. A total of 500,000 people managed to move out of the coastal areas before the storm on 31 May 2017. Strong winds and storm had battered several buildings and destroyed farmlands

first crisis response by a new country emergency fund

- The fund was utilized to provide urgent help for more than 50,000 of the most vulnerable people who were affected
- The activities to assist the vulnerable families in the Cox's Bazar district included: distribution of hygiene kits—water containers, soap, other sanitary equipment—to prevent the spread of diseases; cash grants to the most vulnerable affected households to enable them repair their makeshift homes and for other basic needs, including food, repairing latrines, washrooms, and water points in the makeshift camps; repairing of schools damaged by the Cyclone to enable children to return to their education as quickly as possible

Landslides disaster on 12 June 2017

On 12 June 2017, heavy monsoon rain

triggered a series of landslides and floods in Rangamati, Chittagong, and Bandarban—the three hill districts of Bangladesh.

The worst-hit district was Rangamati where landslides buried hillside houses where people were sleeping; 20 separate landslides hit the district. Many roads in the district were washed away, leaving craters up to 15 meters (50 feet) deep, or heaped with debris. The power grid in the district was also destroyed.

The weather also caused power cuts and telecommunication disruptions, making it difficult for rescuers to reach the affected communities. Table 4.18 shows the number of medical teams, along with the number of injured, dead and missing people during the landslides.

Response and the aftermath

- The Bangladesh Government attempted to warn people ahead of the storm, using loudspeakers but were not able to reach all areas
- More than 10,000 people did get evacuated to emergency shelters
- In the two days immediately after the landslides, rescue workers were having trouble reaching victims as roads were choked with mud and continued rain. Heavy digging equipment could not reach remote areas
- As of 14 June, power and cell service were still off in the affected area
- Doctors worked by candlelight to help the injured
- Thousands of Bangladesh Army soldiers were already stationed in the area because of a long-standing insurgency; they were directed to help in the rescue efforts. The Bangladesh Navy also helped reach people cut off by flooding
- The Government of Bangladesh also offered cash and building materials to the affected families. Local authorities offered temporary food and shelter.

HEALTH WORKFORCE SITUATION IN BANGLADESH

Yearly output of trained manpower on the rise

Information on the human resource (HR) is now being kept up-to-date in the online HR management system developed by the Management Information System (MIS) of the DGHS.

The health workforce situation in the DGHS and allied departments, viz. Directorate General of Family Planning and Directorate General of Nursing and Midwifery is highlighted in tabular forms, showing the numbers of sanctioned, filled-up and vacant posts, along with medical teaching/training institutions, educational programs, and training courses. Deployment and redeployment of the workforce are ongoing processes; attrition due to death, retirement, resignation, termination, migration, transfer, replacement, and filling-in is constantly occurring. Therefore, the status of the workforce as reported here may not remain the same by the time this bulletin is published.

Information on the human resource (HR) is now being kept up-to-date in the online HR management system developed by the Management Information System (MIS) of the DGHS. Any changes in the HR situation, either by new recruitments or by transfers, postings, retirements, etc. are incorporated in the system in

real-time. The DGHS web site www.dghs.gov.bd provides updated information on the workforce.

Health workforce situation at the DGHS

The health workforce situation at the DGHS is summarized in Table 5.1. The Annex to this chapter shows the division-wise distribution of health workforce.

Out of 131,158 sanctioned posts under the DGHS, more than one-third (39.88%) are of Class III category; physicians (Class I) comprise 19.05%, Class II 21.44%, and Class IV employees comprise the rest 19.27% (Table 5.1). Of the available 95,877 health personnel, 39.66% are of Class III, 21.49% are doctors (Class I), 20.82% are of Class II, and 17.82% are of Class IV. The Class I non-doctors comprise 0.36% of the sanctioned posts and 0.21% of the available staff. Table 5.1 also shows that 35,281 sanctioned posts remained vacant as of August 2017, which constituted 26.9% of the total

sanctioned posts. Vacancy rate was 17.56% (4,387 posts) for doctors, 56.87% (265 posts) for Class I non-doctors, 29.02% (8,162 posts) for Class II staff, 27.29% (14,275 posts) for Class III staff, and 32.41% (8,192 posts) for Class IV staff.

The total number of sanctioned posts for the DGHS in 2014, 2015, 2016 and 2017 (up to August) are shown in Figure 5.1. Between 2016

and 2017, there was an increase of 3,317 posts comprising Class I posts for doctors and Class II posts.

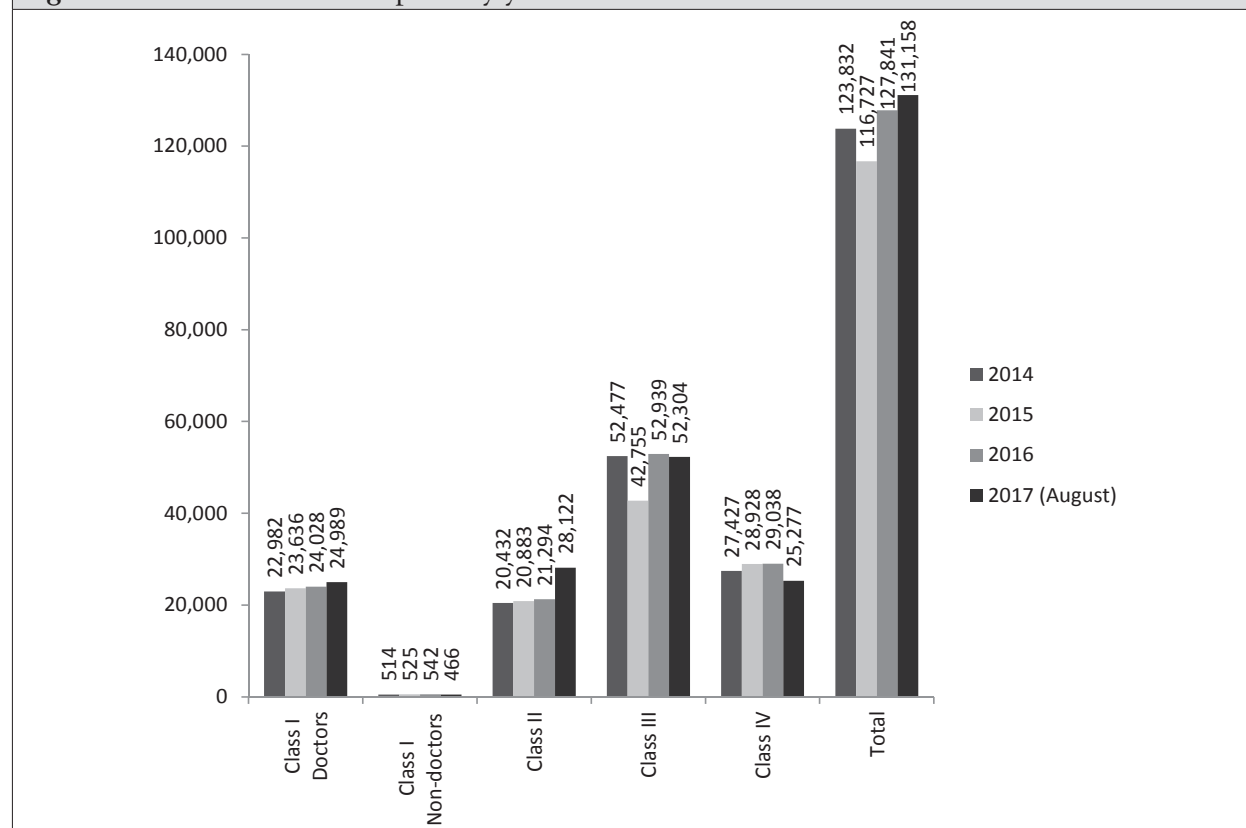
Workforce for administrative, managerial, academic and clinical functions

Table 5.2 shows the numbers of sanctioned, filled-up and vacant posts (as of August 2017)

Table 5.1. No. of sanctioned, filled-up and vacant posts (Rev. & Dev.) under the DGHS (August 2017)

Category of post		Sanctioned post		Filled-up post			Vacant	
		No.	% of all sanctioned posts	No.	% of all filled-up posts	% of sanctioned posts in respective categories	No.	% of sanctioned posts in respective categories
Class I	Doctors	24,989	19.05	20,602	21.49	82.44	4,387	17.56
	Non-doctors	466	0.36	201	0.21	43.13	265	56.87
Class II		28,122	21.44	19,960	20.82	70.98	8,162	29.02
Class III		52,304	39.88	38,029	39.66	72.71	14,275	27.29
Class IV		25,277	19.27	17,085	17.82	67.59	8,192	32.41
Total		131,158	100.00	95,877	100.00	73.1	35,281	26.9

Figure 5.1. No. of sanctioned posts by year



of personnel responsible for administrative, managerial, academic and clinical functions under the DGHS.

Medical technologists

The numbers of sanctioned, filled-up and vacant posts of medical technologists in 2013, 2014, 2015, and 2017 are shown in Table 5.3.

Sub-assistant community medical officers

The numbers of sanctioned, filled-up and vacant posts of sub-assistant community medical officer (SACMO) in 2013, 2014, 2015 and 2017 under the DGHS are shown in Table 5.4. Percentages of vacant positions have been increased in 2017 to 27.61% from 15% in 2015.

Domiciliary staff (health inspectors, assistant health inspectors, and health assistants)

The numbers of sanctioned, filled-up and vacant posts of domiciliary staff (health

inspectors, assistant health inspectors, and health assistants) under the DGHS in 2013, 2014, 2015, and 2017 are shown in Table 5.5. The rate of vacancy dropped to 15% in 2015 from 16.75% in 2013, although it has been increased in 2017 to 21.46%.

Officers and staff in alternative medicines

Table 5.6 shows the numbers of sanctioned, filled-up and vacant posts of various officers and staff in alternative medicines under the DGHS (as of December 2016).

Workforce at the Directorate General of Family Planning

Table 5.7 shows the numbers of sanctioned, filled-up and vacant posts under the Directorate General of Family Planning (DGFP) in 2012, 2013, 2014, and 2017 (October).

Directorate General of Nursing and Midwifery

Table 5.8 shows the numbers of sanctioned, filled-up and vacant posts under the Directorate General of Nursing and Midwifery (DGNM) in 2014, 2015, and 2017 (July)

Table 5.2. No of sanctioned, filled-up and vacant posts (Rev. & Dev) of personnel responsible for administrative, managerial, academic and clinical functions under the DGHS (August 2017)					
Name of post	Total no. of sanctioned posts	Filled-up		Vacant	
		No.	(%)	No.	(%)
Director general	1	1	100	0	0
Additional director general/equivalent	5	5	100	0	0
Director/principal/vice-principal/equivalent	121	160*	132.23	0	0
Deputy director/equivalent	118	611*	517.80	0	0
Assistant director/civil surgeon/equivalent	240	757*	315.42	0	0
Deputy civil surgeon/UHFPO/equivalent	956	1,399*	146.34	0	0
Professor	621	302	48.63	319	51.37
Associate professor	1,005	554	55.12	451	44.88
Assistant professor	1,554	774	49.81	780	50.19
Senior consultant	566	330	58.30	236	41.70
Senior lecturer	8	7	87.5	1	12.5
Junior lecturer	32	27	81.82	6	18.18
Junior consultant/equivalent	3,819	1,565	40.98	2,254	59.02
Assistant surgeon/equivalent	15,514	13,636	87.89	1,878	12.11
Other posts	429	474	110.49	0	0
Total	24,989	20,602	82.44	4,387**	17.56
*including OSD posts					
**excluding OSD posts					

Table 5.3. Numbers of sanctioned, filled-up and vacant posts of medical technologists by discipline in 2013, 2014, 2015 and 2017

Year (Month)	Post	Pharmacy	Lab	Radiography	Radiotherapy	Physiotherapy	Dental	Sanitary inspection	MT (EPI)	Total
	Filled-up	2,126	1,498	629	41	144	501	436		5,375
	Vacant	808	424	108	25	72	34	55	-	1,526
2014 (May)	Sanctioned	2,944	2,170	784	66	264	539	496	499	7,762
	Filled-up	2,113	1,642	644	40	177	501	439	473	6,029
	Vacant	813	528	140	26	87	38	57	26	1,733
2015 (Dec)	Sanctioned	2,944	2,172	785	66	286	540	497	500	7,790
	Filled-up	2,106	1,629	623	38	171	484	432	462	5,945
	Vacant	438	543	162	28	115	56	65	38	1,445
2017 (August)	Sanctioned	2895	2167	777	80	296	541	498	496	7817
	Filled-up	1609	1427	585	38	108	473	479	473	5254
	Vacant	1286	740	192	42	188	68	19	23	2563

Table 5.4. Numbers of sanctioned, filled-up and vacant posts of sub-assistant community medical officer (SACMO) in 2013, 2014, 2015, and 2017 under the DGHS

Year (Month)	No. of posts		Vacant	
	Sanctioned	Filled-up	No.	(%)
2013 (Dec)	5,411	4,917	494	9.13
2014 (Dec)	5,411	4,684	727	13
2015 (Dec)	5,411	4,578	833	15
2017 (Aug)	5,368	3,886	1482	27.61

Institutions offering postgraduate medical degrees

Type of institutions providing postgraduate medical degrees both in the government and private sectors is listed in Table 5.9, with the numbers of available seats. Thirty-nine institutions—22 in the public sector, 7 autonomous (including BSMMU), and 10 in private sector—offer postgraduate degrees.

Bangladesh College of Physicians and Surgeons (BCPS) offers FCPS (Fellow of the College of Physicians and Surgeons) and MCPS (Member of the College of Physicians and Surgeons) degrees. Any eligible candidate can sit for the examinations, and results depend on the candidate's competence shown in the examinations. The number of seats is, therefore, variable.

Figure 5.2 shows the number of doctors who obtained FCPS and MCPS degrees from the Bangladesh College of Physicians and Surgeons (BCPS) from 2009 to 2016. Detailed data are given in the Annex to the Chapter.

Institutions offering MBBS degree

Table 5.10 shows the number of institutions, along with the total number of seats—both in the public and private sectors—which offer MBBS degree.

Table 5.5. Numbers of sanctioned, filled-up and vacant posts of domiciliary staff (health inspectors, assistant health inspectors, and health assistants) under the DGHS in 2013, 2014, 2015, and 2017

Year (Month)	Post	Health inspector	Assistant health inspector	Health assistant	Total field staff	Vacancy (%)
2013 (Dec)	Sanctioned	1,399	4,202	20,881	26,482	16.75
	Filled-up	1,313	4,042	16,690	22,045	
	Vacant	86	160	4,191	4,437	
2014 (Dec)	Sanctioned	1,399	4,205	20,877	26,481	14
	Filled-up	1,282	4,006	17,532	22,820	
	Vacant	117	199	33,45	3,661	
2015 (Dec)	Sanctioned	1,399	4,205	20,877	26,455	15
	Filled-up	1,232	3,891	17,332	22,455	
	Vacant	167	314	3,545	4,026	
2017 (Aug)	Sanctioned	1,410	4,220	20,908	26,538	21.46
	Filled-up	996	3,684	16,162	20,842	
	Vacant	414	536	4,746	5,696	

Table 5.6. Numbers of sanctioned, filled-up and vacant posts (revenue and development) of various officers and staff in alternative medicines under DGHS (December 2016)

Name of post	Sanctioned post		Filled-up post		Vacant post	
	Revenue	Develop-ment	Revenue	Develop-ment	Revenue	Develop-ment
Director	1	0	1	0	0	0
Principal-cum-Superintendent	2	0	2	0	0	0
Professor	2	0	0	0	2	0
Deputy director	1	0	1	0	0	0
Assistant director	1	2	1	0	0	2
Assistant professor	16	4	13	2	3	2
RP (U/A/H)	0	2	0	2	0	0
Registrar (U/A/H)	0	2	0	2	0	0
RMO	0	1	0	1	0	0
Lecturer	21	35	15	31	6	4
Medical officer (U/A/H) DGHS	0	3	0	3	0	0
Medical officer (Unani Medicine)	61	95	10	68	51	27
Medical officer (Homeopathic Medicine)	51	90	0	74	51	16
Medical officer (Ayurvedic)	61	90	10	63	51	27
IMO (U/A/H)	6	18	0	15	6	3
Other posts equivalent to medical officer	14	2	14	2	0	0
Research officer (U/A/H)	0	3	0	3	0	0

Table 5.6. Contd.

Table Continued...						
Name of post	Sanctioned post		Fill-up post		Vacant post	
	Revenue	Develop-ment	Revenue	Develop-ment	Revenue	Develop-ment
Deputy superintendant	1	0	1	0	0	0
Nurse/Staff nurse	12	0	12	0	0	0
Secretary	1	0	1	0	0	0
Accountant	0	1	0	0	0	1
Support personnel (Compounders for alternative medicine)	157	277	2	63	155	214
Herbal assistant for herbal gardens	0	474	0	433	0	41
Other Class III personnel	100	2	82	0	18	2
Other Class IV personnel	184	2	124	2	60	0
Total	692	1,103	289	764	403	339

Table 5.7. Categories and numbers of sanctioned, filled-up and vacant posts in 2012, 2013, 2014, and 2017 (Oct) at the Directorate General of Family Planning

Year (Month)	Class	Sanctioned	Filled-up	Vacant	Vacancy rate (%)
2012 (Dec)	Class I	1,954	1,049	905	46.3
	Class II	1,022	401	621	60.8
	Class III	16,937	14,646	2,291	13.5
	Class IV	32,507	29,845	2,662	8.2
2013 (Apr)	Class I	1,954	1,021	933	47.7
	Class II	1,074	401	673	62.7
	Class III	16,886	14,760	2,126	12.6
	Class IV	32,516	29,103	3,413	10.5
2014 (Dec)	Class I	1,953	1,039	914	46.8
	Class II	1,089	525	564	51.79
	Class III	16,881	14,665	2,216	13.13
	Class IV	32,512	29,116	3,396	10.45
2017 (Oct)	Class I	1,953	1,214	739	37.84
	Class II	1,089	471	618	56.75
	Class III	16,881	15,044	1,837	10.88
	Class IV	32,512	27,706	4,806	14.78

Institutions offering undergraduate dental degrees

The number of institutions, along with the total number of seats both in the public and private sectors, which offer BDS degree, is shown in Table 5.11.

Medical Assistant Training Schools

Medical assistants (now to be designated as sub-assistant community medical officer) assist the medical officers posted at health facilities at the upazila health complex level and below. Medical assistants are produced by Medical Assistants

Table 5.8. Numbers of sanctioned, filled-up and vacant posts under the DGNM in 2014, 2015, and 2017 (July)

Year (Month)	Class	Category	Sanctioned	Filled-up	Vacant	Vacancy (%)
2014 (June)	I	Nursing	311	166	145	46.62
		Non-nursing	1	-	1	100
	II	Nursing	22,357	12,928	5,429	24.28
		Non-nursing	20	9	11	55
	III	Nursing	611	611	0	0
		Non-nursing	368	289	79	21.47
IV	Non-nursing	704	664	40	5.68	
2015 (Jun)	I	Nursing	313	148	165	52.71
		Non-nursing	1	0	1	100
	II	Nursing	21,234	16,082	5,152	24.26
		Non-nursing	20	9	11	55
	III	Nursing	610	610	0	0
		Non-nursing	368	299	69	18.75
IV	Non-nursing	704	623	81	11.5	
2017 (July)	I	Nursing	365	183	182	49.86
		Non-nursing	1	0	1	100
	II	Nursing	32,874	26761	7113	21.64
		Non-nursing	12	7	5	41.67
	III	Nursing	0	488*	0	0
		Non-nursing	401	293	108	26.93
IV	Non-nursing	730	564	166	22.74	

* Comprises personnel on special duty and/or deputation

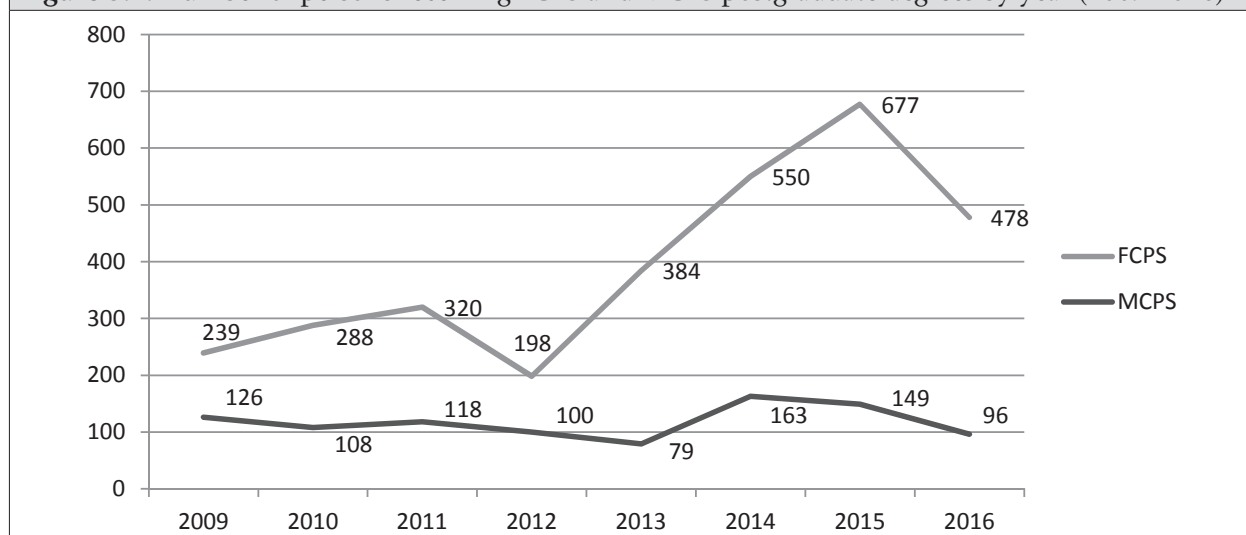
Table 5.9. Type of institutions offering postgraduate medical courses, with numbers of seats (2017)

Type of organization	No. of organizations	Total no. of seats
Autonomous (Including BSMMU)	7	722
Government	22	1541
Private	10	583
Total	39	2846

Training Schools (MATS) through a three-year academic course comprising theoretical and practical classes. As shown in Table 5.12, currently, there are 8 MATS in the government sector and 200 MATS in the private sector (total 208). Total annual production-capacity is 13,540, of whom 716 are produced by the government and 12,824 by the private training schools.

Institutes of Health Technology (IHT) for production of medical technologists

Medical technologists are laboratory personnel

Figure 5.2. Number of persons receiving FCPS and MCPS postgraduate degrees by year (2009-2016)**Table 5.10.** Public and private institutions offering MBBS degree, with the number of seats (2017)

Type of organization	No. of institutions	No. of seats
Government	30	3,212
AFMC/Army	6	375
Private	69	6,186
Total	105	9,773

Detailed list of institutions, with number of seats in each, is provided in the Annex to the Chapter

Table 5.11. Government and private institutions offering BDS degree, with number of seats (2017)

Type of organization	No. of institutions	No. of seats
Government	9	532
Private	26	1,400
Total	35	1,932

responsible for technical jobs under the supervision of medical experts. A few years

Table 5.12. Medical assistant training schools (MATS), with the number of seats (2017)

Type of MATS	No. of MATS	No. of seats
Government	8	716
Private	200	12,824
Total	208	13,540

Annex to the Chapter shows the detailed list of institutions, with number of seats in each institution

back, there was an acute shortage of medical technologists in the country. However, for a steady growth of private institutions, by now there are 106 institutions to produce medical technologists. In total, 9 government IHTs and 97 private institutions offer diploma and/ or BSc courses. Another 2 government IHTs will start soon. The detailed list of institutions, with number of seats in each institution is provided in the Annex to the Chapter.

Institutions offering degrees and diplomas in alternative medicines

The list of academic institutions, along with numbers of seats both in the government and the private sectors, offering degrees and diplomas in alternative medicines is provided in Table 5.13.

Table 5.13. Institutions for teaching and training on alternative medicines in Bangladesh (December 2016)

Name of institution	Total	Govt.	Private	Duration of course	Duration of internship	Degree offered	No. of seats
Govt. Unani and Ayurvedic Medical College	1	1	0	5 years	1 year	BUMS (Bachelor of Unani Medicine and Surgery); BAMS (Bachelor of Ayurvedic Medicine and Surgery)	50
Homeopathic Medical College	2	1	1	5 years	1 year	BHMS (Bachelor of Homeopathic Medicine and Surgery)	150 (50* +100)
Unani Diploma College	16	1	15	4 years	6 months	DUMS (Diploma in Unani Medicine and Surgery)	1,100 (50* +1,050)
Ayurvedic Diploma College	9	0	9	4 years	6 months	DAMS (Diploma in Ayurvedic Medicine and Surgery)	650
Homeopathic Diploma College	53	0	53	4 years	6 months	DHMS (Diploma in Homeopathic Medicine and Surgery)	5,700
Total	91	3	88				

*Only in government institutions

Table 5.14. Number of nursing institutions, along with numbers of seats, offering different types of nursing degrees (June 2017)

Course	Ownership	No.	No. of seats
Basic BSc	Government	15	1,135
	Private	45	2,185
	Sub-total	60	3,320
Post-BSc/Public Health Nursing	Government	4	400
	Private	37	1,475
	Sub-total	41	1,875
Specialized Diploma	Government	1	20
	Private	3	60
	Sub-total	4	80
Diploma in Nursing & Midwifery	Government	43	2,580
	Private	140	50
	Sub-Total	183	2,630
	Total	288	7,905

Division	Name of private junior midwifery institutions		No. of seats
Chittagong	1.	Junior Midwifery Institute, Red Crescent Matrisadan Hospital, Chandpur	20
	2.	Jemison Red Crescent Midwifery Institute, Agrabad, Chittagong	50
	3.	Christian Hospital, Chandraghona, Rangamati	20
	4.	Junior Midwifery Institute, Memon Hospital, City Corporation, Chittagong	30
Dhaka	5.	Junior Midwifery Institute, Holy Family Red Crescent Hospital, Dhaka	60
	6.	Junior Midwifery Institute, Shaheed Moyez Uddin Memorial Red Crescent Matrisadan Hospital, Banglabazar, Dhaka	20
	7.	Junior Midwifery Institute, Kumudini Hospital, Mirzapur, Tangail	20
	8.	Central Hospital Nursing Institute, Green Road, Dhanmondi, Dhaka	20
Khulna	9.	Junior Midwifery Institute Ad-Din Matrisadan Hospital, Jessore	20
	10.	Junior Midwifery Institute, Fatema Hospital, Jessore	20
Rajshahi	11.	Junior Midwifery Institute, Christian Hospital, Bogra	20
Rangpur	12.	Prime Nursing College, Rangpur	20
Mymensingh	13.	Scabo Nursing College, Mymensingh	40
Total seats			360

S.I	Trainee	Duration	Government		Private		Total	
			No. of institutes	No. of seats	No. of institutes	No. of seats	No. of institutes	No. of seats
1	Family welfare visitor (FWV)	18 months	12	1000	0	0	12	1000
2	Community paramedic	2 years	0	0	23	1270	27	1270
3	Community-based skill birth attendants (CSBAs)	6 months	48	960	4	80	23	1040

Institutions offering nursing degrees

The number of institutions, along with the number of seats in both government and private sectors, offering different types of nursing degrees is shown in Table 5.14. Detailed list of institutions and number of seats in each institution is provided in the Annex.

Institutions producing midwives

There are 54 institutes for diploma in midwifery and 13 institutes for producing junior midwives in the private sector (Table 5.15). The total number of seats for diploma in midwifery (3 years) is 1,545 and for junior midwifery course (18 months) is 360. Detailed list of institutes providing diploma in

Table 5.17. Number of seats available in the government medical and dental colleges in 2017

Serial no.	Type and name of colleges	Year of establishment	No. of seats as of 2017
Medical colleges			
1	Dhaka Medical College, Dhaka	1948	197
2	Mymensingh Medical College, Mymensingh	1962	197
3	Chittagong Medical College, Chittagong	1962	197
4	Rajshahi Medical College, Rajshahi	1962	197
5	MAG Osmani Medical College, Sylhet	1966	197
6	Sher-e-Bangla Medical College, Barisal	1968	197
7	Rangpur Medical College, Rangpur	1972	197
8	Sir Salimullah Medical College, Mitford, Dhaka	1972	197
9	Comilla Medical College, Comilla	1992	141
10	Khulna Medical College, Khulna	1992	141
11	Shaheed Ziaur Rahman Medical College, Bogra	1992	141
12	Faridpur Medical College, Faridpur	1992	141
13	M Abdur Rahim Medical College, Dinajpur	1992	142
14	Shaheed Suhrawardy Medical College, Sher-e-Bangla Nagar, Dhaka	2005	142
15	Pabna Medical College, Pabna	2008	57
16	Abdul Malek Ukil Medical College, Noakhali	2008	57
17	Cox's Bazar Medical College, Cox's Bazar	2008	57
18	Jessore Medical College, Jessore	2010	57
19	Satkhira Medical College, Satkhira	2011	52
20	Shaheed Syed Nazrul Islam Medical College, Kishoreganj	2011	52
21	Kushtia Medical College, Kushtia	2011	52
22	Sheikh Shahera Khatun Medical College, Gopalganj	2011	52
23	Shaheed Taj Uddin Ahmed Medical College, Gazipur	2013	52
24	Tangail Medical College, Tangail	2014	51
25	Shaheed M Monsur Ali Medical College, Sirajganj	2014	51
26	Manikganj Medical College, Manikganj	2014	51
27	Jamalpur Medical College, Jamalpur	2014	51
28	Patuakhali Medical College, Patuakhali	2014	51
29	Rangamati Medical College, Rangamati	2014	51
30	Mugda Medical College, Dhaka	2015	50
31	Habiganj Medical College, Habiganj	2017	52
	Total		3320
Dental colleges			
1	Dhaka Dental College, Mirpur 14, Dhaka	1960	97
2	Chittagong Medical College Dental Unit, Chittagong	1990	60
3	Rajshahi Medical College Dental Unit, Rajshahi	1989	59
5	Shahid Suhrawardy Medical College Dental Unit, Dhaka	2012	56
4	Sir Salimullah Medical College Dental Unit, Dhaka	2012	52
6	Mymensingh Medical College Dental Unit, Mymensingh	2012	52
7	MAG Osmani Medical College Dental Unit, Sylhet	2012	52
8	Sher-e-Bangla Medical College Dental Unit, Barisal	2012	52
9	Rangpur Medical College Dental Unit, Rangpur	2012	52
	Total		532
Annex to the Chapter provides lists of all public and private colleges with available seats.			

midwifery course is provided in the Annex to the Chapter.

Training facilities for production of family welfare visitors, community paramedics, and community-based skilled birth attendants

The Ministry of Health and Family Welfare has programs to produce family welfare visitors (FWVs) and community paramedics. There is a separate program for community-based skilled birth attendants (CSBA) to facilitate

attendance of skilled health personnel at childbirths. Table 5.16 shows the number of facilities and seats available in each. Detailed list of institutes are provided in the Annex to the Chapter.

Output from medical and dental colleges of Bangladesh in 2017

Table 5.17 shows number of seats available in the government medical and dental colleges in 2017.

HEALTH INFORMATION SYSTEM AND eHEALTH

Data for Decision (D4D) in Health

Bangladesh has become a shining example of the value of global collaboration in strengthening health information systems.

In the past few years, Bangladesh earned international recognitions for digitalization of the health systems, and the national leaders have recognized the Management Information System of the Directorate General of Health Services (MIS-Health) for generating innovative ideas that helped in achieving these global recognitions. MIS-Health has made remarkable progress in developing and deploying a country-wide health information system (HIS) which includes a robust routine health information system (RHIS).

Inter-country Conference on Data for Decision (D4D)

"Alone we can do so little but together we can do so much", Professor Dr. Abul Kalam Azad, Director General of Health Services rightly quoted in his inauguration speech during the International Conference on Data for Decision (D4D) in Health. Bangladesh has become a shining example of the value of

global collaboration in strengthening health information systems.

In June 2015, the World Bank Headquarters hosted a summit titled "Measurement and Accountability for Results in Health". It was the first step in developing collaborative partnerships between members of the global health community in the field of health data. South Africa and Bangladesh were co-sponsors of the summit convened by USAID, WHO, and the World Bank Group. Participants articulated the importance of creating a unified framework for measurement and accountability in the health sector. In October 2015, the Conference on Measurement and Accountability for Health in the Asia Pacific and the 4th General Meeting of Asian eHealth Information Network (AeHIN) were held in Jakarta, which focused on investment planning, implementation of scalable monitoring & evaluation (M&E) systems, health information systems, and eHealth solutions.

Figure 6.1. Inauguration of International Conference on D4D in Health

Within just one year after this meeting, the Directorate General of Health Services (DGHS) organized the D4D Health Conference in Dhaka. The conference was conducted from 1 to 3 April 2017, with support from the European Union, the SHARE Project of icddr,b, UNICEF, UNFPA, WHO, Vital Strategies of Bloomberg Philanthropies, Measure Evaluation, the USAID-funded SIAPS Program, Access to Information Program, and HISP Bangladesh.

With GIZ support, the Ministry of Health and Family Welfare (MOHFW) developed a central electronic repository for national health-related data, using DHIS2 with the aim of bringing together data from various systems into a unified framework.

With support from different development partners, like the European Union, icddr,b, GIZ, UNICEF, and DFID, the DGHS is conducting capacity-building training on the use of DHIS2 for health managers, IT professionals, and statisticians in all administrative divisions of Bangladesh.

Data management for family planning programs was also addressed in the conference, showcasing how the Family Planning Department uses logistics data to manage

procurement and demand forecasting to optimize distribution of contraceptives at the service delivery points.

With USAID support, the Ministry has improved decentralized decision-making in reducing stock-out, inventory management for all family planning methods, and increased the availability of modern contraceptives, which are contributing in reducing unintended pregnancies and maternal death.

The D4D Conference also showcased how investments by the MOHFW have developed systems, such as the Human Resource Information, *Shasthaya Batayan*, and an integrated media monitoring tool which organizes all health news published in the national media.

The technical session of the D4D Conference focused on the importance of routine (standardized) health information systems and allowed participants to share global experiences on combining routine and non-routine data for the management of health services. The Quality Improvement Secretariat and health managers are directly involved in the efforts to improve service quality based on this SMS-driven system.

The technical session of the conference also showcased how the DGHS is promoting best practices in healthcare management, using DHIS2 data as reported by on-site monitoring, physical assessment of facilities, and patient satisfaction surveys. This is expected to improve accountability among health managers, enhance responsiveness, increase transparency, and create a culture of good performance. International participants from 15 countries, including USA, UK, France, India, Sri Lanka, Congo, Lao PDR, the Netherlands, Germany, Myanmar, Haiti, and Norway, attended the conference and visited the Management Information System of the DGHS, its local health bulletins, and national data centre and participated in interactions with district and upazila-level health managers through video-conferencing as part of their regular monitoring system with the DGHS. International participants also visited the Government Employee Hospital in Dhaka and the Kaliganj Upazila Health Complex in Gazipur district to inspect individual patient-records through OpenMRS software as well as inspecting the process of birth and death registration through CRVS system.

The conference successfully brought together government officials, development partners, leaders from the private sector, academicians, researchers, civil society, media, and other national and international stakeholders.

Bangladesh has already made remarkable progress in achieving the Millennium Development Goals, especially in reducing maternal and child mortality. This success was achieved through a combination of global cooperation and unwavering commitment to the principles of evidence-based health policy. By highlighting the urgency of improved health information systems for designing and implementing public health, the D4D Conference carried the spirit of this progress forward. (Source: <http://blog.icddrb.org/index.php/2017/04/30/data-decision-health-d4d-conference-healthdata-icddrb/>)

a2i (Access to Information)

a2i is the world's first Innovation Lab+ established by the Prime Minister's Office with support from UNDP in 2007. Its primary goal is to ensure easy, affordable and reliable access to quality public services for all citizens of Bangladesh. The strategy includes the following:

- Empower civil servants with the tools, expertise, knowledge, and resources
- Establish both physical and online one-stop access points that scale innovative services
- Encourage and support non-government actors, including small entrepreneurs, teachers, and the youths

a2i drives the creation of a public service innovation ecosystem and delivery infrastructure from the Prime Minister's Office working closely with the Cabinet Division, which aims at the following:

- Cultivating empathy
- Reducing 'TCV' (time, cost, and number of visits)
- Simplifying through 'SPS' (Service Process Simplification)
- Supporting innovation through 'Service Innovation Fund'
- Celebrating innovators with 'Innovation Summits'
- Establishing delivery platforms enabling 'Services for All'

At the field level, a2i has set tremendous innovative examples. For people who were previously deprived of advanced health facilities, a2i has made an easier access, with the following objectives:

- i. Making the ultrasonogram process easier
- ii. Reducing maternal and infant mortality rates through advancement of service delivery in the community
- iii. Easing inter-departmental services
- iv. Making health services easier by introducing health card

eMIS: digitizing health services through innovative approaches

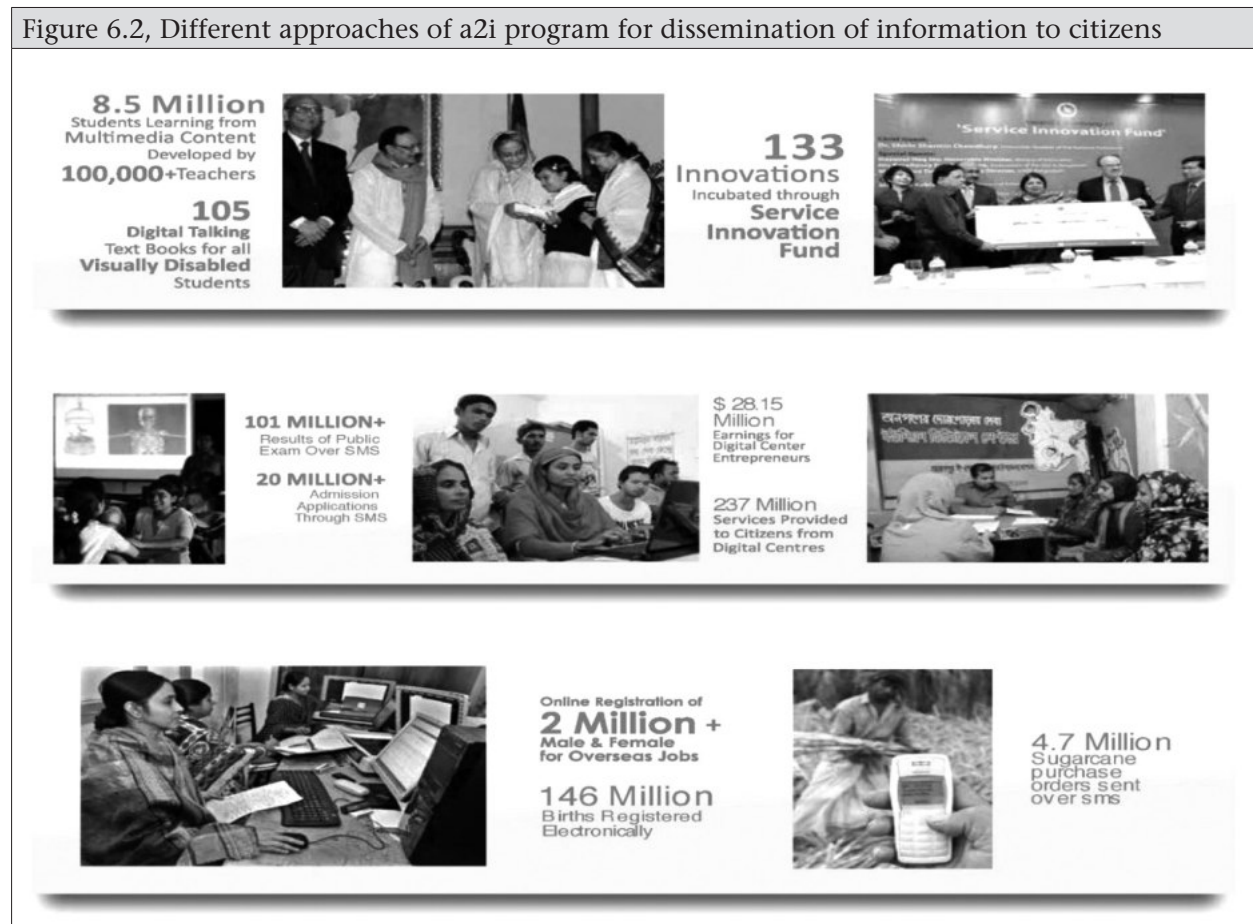
Digital strategies are entrenched in the work of MIS-DGHS as it vigorously pursues the goal of Digital Bangladesh. It also provided a great springboard for launching eMIS solutions. Four implementing partners of the USAID (MEASURE Evaluation, icddr, MaMoni HSS, and SIAPS) joined together to develop and implement comprehensive electronic software solutions for use in the rural communities by health workers of the public sector. These organizations had worked previously with the DGHS and the DGFP to improve paper-based registers and MIS-forms to generate reliable information on time, streamline MIS tools to minimize information gaps and duplication, and reduce the burden of data collection and compilation. In due course, it was intended to improve the use of information at the local level and promote evidence-based decision-making in HPN sector. Such experiences were

elaborated in comprehensive digitization efforts initially at the community and facility level through Routine Health Information Systems (RHIS)—now known as eMIS or electronic Management Information System.

Organizations under the MOHFW have increased investment in hardware and are continuously improving the use of software. The eMIS demonstration phase that started in January 2015 addresses institution-wide digitization, the scope of which is very comprehensive. It started with digitizing the work of field-level workers in rural areas. The eMIS tools are being used in two districts: Tangail and Habiganj. The eMIS tools are arranged in several layers as follows:

- Population Registration System (PRS) effectively performs census of the catchment area of the CHWs. Population registration using PRS App on Tablet PC was introduced since March 2015. It is

Figure 6.2, Different approaches of a2i program for dissemination of information to citizens



based on geographical reconnaissance (GR) yearly conducted by the DGHS till 2010 to collect demographic information for health service delivery and planning. Registration work is performed by the health assistants (HAs) and family welfare assistants (FWAs) belonging to the DGFP. All 12 upazilas of Tangail and 2 upazilas of Habiganj district have been covered. As on 31 October 2016, the community health workers have successfully registered 3.4 million individuals. The population-based data are used in identifying the individuals and building their service history

- Community and facility modules are intended for covering all job functions of HAs. It includes immunization and other services provided by HAs, such as maternal and newborn care, under-five childcare, limited preventive care, etc. on household visits or at EPI sessions, and in community clinics. Figure 6.3 shows a health assistant registering a woman, using Tablet PC, for maternal and child health
- Administrative modules address the need for inspection and supervisory work of AHIs and HIs who act as supervisors to the community-level workers (HAs). These modules allow approval of workplan and communication with supervisors. The supervisors can plan for inspection of areas and individuals and monitor work of the HAs as recorded in their job descriptions

All service-related data could be saved instantly and updated later in a central database. It is also possible to work offline and sync data later if Internet connection is problematic. The fieldworkers need not spend any time for filling up the forms. Thus, their work becomes entirely paperless. This improves the quality of work. It would be possible to measure performance and increase accountability. Figure 6.4 shows the App mimics existing EPI Card.

The community health workers were given training to perform their jobs. The required skills are easy to acquire. There are close

interactions with the DGHS and the DGFP on development of modules; the district and upazila officials are providing leadership in the efforts. On the basis of experience from the demonstration phase, a national roll-out plan and a training plan would be prepared.

The MOHFW is currently in the process of finalizing the 4th sector-wide program. It is happening in the era of SDGs, with the requirements of tracking the services provided to the individuals, and there is an emphasis on measurement and accountability at all levels. National scale-up of eMIS solutions would make the MOHFW well-prepared for these tasks as it would make it possible to count all with any level of disaggregation.

Health systems strengthening

The Management Information System (MIS) unit of the Directorate General of Health Services has launched a revamped performance management platform. WHO provided technical assistance in the conceptualization and development of this revamping process as part of its efforts to support health systems strengthening in Bangladesh. Other partners, such as icddr,b and UNICEF, have also been involved since inception of the initiative. The Health Systems Strengthening (HSS) Project, as it is more commonly known, aims to promote best practices, transparency, and accountability in health services management through incentivizing better use of the existing resources and generation of better results. Through this initiative, health facilities at different tiers of the system will self-report; be assessed; and finally ranked on their performance. Best-performing ones in each tier will receive the Health Minister's National Award.

To guide the performance measurement approach, the building blocks of the WHO health system and the results chain analytical frameworks were adopted in line with the local context. Performance indicators were defined at input, output and outcome levels

Figure 6.3. A health assistant registering a woman, using Tablet PC, for maternal and child health



Figure 6.4. App mimics existing EPI Card

Health ID 96544816710					
ইপিআই টিকা দান কার্ড (শিশু)					
শিশুকে সবগুলো টিকা দেয়ার জন্য কমপক্ষে ৬ বার টিকা কেন্দ্রে নিয়ে আসতে হবে					
টিকা প্রদানের তারিখ					
টিকার নাম	১ম বার	২য় বার	৩য় বার	৪র্থ বার	৫ম
	06/03/2016				08/
বিসিজি	.....			
পেটাভ্যাকোট	.....	.....	.....
ওপিডি	.....	.....	.....
পিসিডি	.....	.....		.....
আইপিডি			.....	
এমআর					
এমআর (২য় ডোজ)					
টিকা দেয়ার পর যে যে কোন সমস্যা/অসুবিধা হলে সাথে সাথে স্বাস্থ্যকর্মী কে খবর দিন। প্রয়োজ কেন্দ্রে নিয়ে আসুন।					
Close					

and, to some extent, at the impact level for facilities and community health services. In total, four different tools will be employed to assess performance. The first is the online measurement tool where facilities report on selected indicators through the existing systems used in MIS. The second tool is the onsite monitoring which is based on a form completed by line managers responsible for oversight of the different facilities. Figure 6.5 shows the screenshot of a live dashboard; which was created (using a score board) for performance evaluation, which will automatically measure the performance of health facilities by pulling the routine data inputted into the District Health Information System (DHIS2), Human Resource Management (HRM), biometric attendance system, SMS complaint/suggestion system, and results of the onsite monitoring. The third tool is used for physical verification by an independent team of assessors of the short-listed facilities following the results of the score board. Finally, the fourth tool involves a patient satisfaction survey to measure the extent to which the demand side is receiving the care they expect.

Figure 6.6 shows physical assessment of a short-listed health facility by central monitoring team.

As part of the revamping process of the platform, orientation workshops for health managers and statisticians on the measurement process took place between March and April 2017 in all divisions of the country (Source: <http://www.searo.who.int/bangladesh/healthservice/en>).

Considering a one-year online data on health facilities from September 2016 to August 2017, a calculation was done for short-listing the health facilities to verify the performances by an independent assessment team consisting of 25 assessors from different programs of the DGHS, divisional health offices, Save the Children, and WHO.

A comprehensive physical assessment and patient satisfaction survey tools were used for the assessment in 68 short-listed health facilities (6 medical college hospitals, 1 specialty postgraduate institute and hospital, 17 district hospitals, and 44 upazila health complexes); the assessment was completed on 31 October 2017 to nominate best-performing health facilities for the year 2017, which will be awarded by Hon'ble Health Minister.

Through the initiative, a model of systematic mechanism was developed for measuring performance and evaluation of the management of health services at facilities. The endeavor of independent assessment has created an opportunity for the assessor team to understand and observe the various local-level positive initiatives by the healthcare providers and identify the gaps for better health outcome in the public health sector.

New photo album added to the social media portals of the DGHS

The DGHS web portal is progressively better serving as a popular platform for information dissemination. The major social media portals, viz. Facebook, Twitter, Google+, YouTube, etc. are also used as channels for information dissemination. It is estimated that over half a million visitors come every month to see one or more component(s) of the integrated web portal. In 2014, an electronic photo album has been added, which has now become the living archive of pictures on health programs being run throughout the country. Figure 6.7 show snapshot of Facebook 'likes' in MIS-DGHS page.

Publications and dissemination of information

The successes and various elements of digital

Figure 6.5. Online performance measurement dashboard



Figure 6.6. Physical assessment in a short-listed facility



Figure 6.7. Snapshot of Facebook showing 'likes' in the MIS-DGHS page



progress of the MIS-DGHS have been discussed in well over 20 international events between 2014 and 2015. Nationally, there were also many more similar events where the current progress, lessons learnt, challenges, and future potentials have been discussed. The generated information and statistics were also disseminated through the web and social media portals, online national and local health bulletins, printed health bulletins, newsletters, manuals, modules, and other publications. Annual MIS conferences, seminars, training courses, workshops, and meetings have also served as channels of information dissemination.

Local Health Bulletins

Online Local Health Bulletins are published by different health organizations since the fiscal year 2011-2012. In 2016, automation

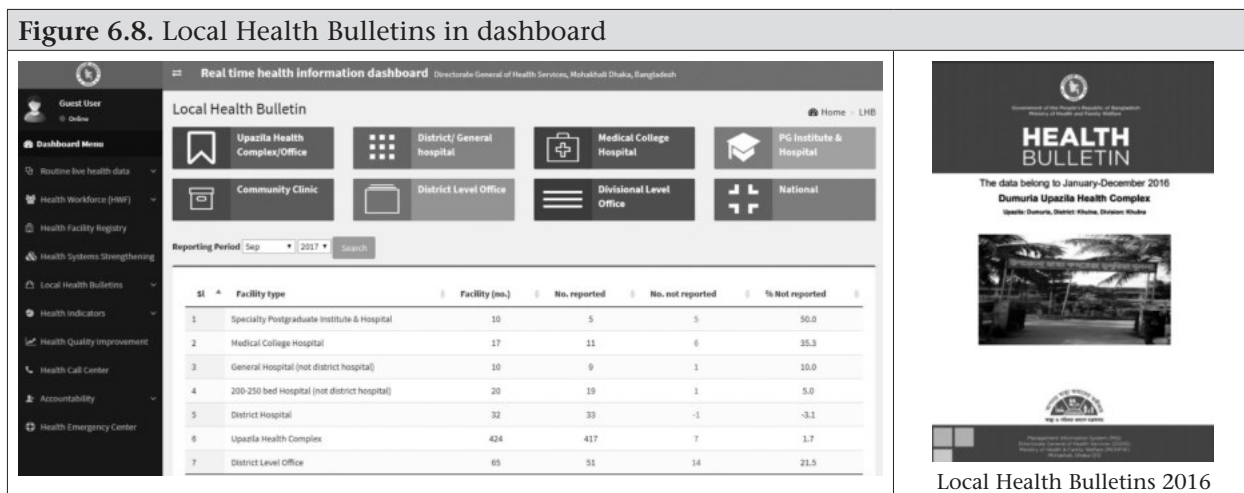
of LHB project carried out by MIS-DGHS involved re-engineering and automation of the Online Local Health Bulletin project that began in 2012. The goal of the project is to develop a culture of evidence-based decision-making in the health sector of Bangladesh by improving access to and openness of data across government health facilities. By virtue of the original initiative, all the health facilities, spanning from national through community level (CC), publish their respective health bulletins online every year. Figure 6.8 shows the screenshot of a Local Health Bulletin in DGHS dashboard. The bulletins contain detailed service information, including number of patient-visits in outpatient and emergency departments, number of hospital admissions, bed-occupancy and turnover ratios, average length of stay, causes of admission, number of deaths in hospitals, causes of deaths, and also major public-health indicators. The bulletins are available for downloading and can also be printed and distributed locally (visit <http://www.dghs.gov.bd>>>Dashboard >> Local Health Bulletin).

DHIS2

District Health Information System version 2 (DHIS2) was introduced as a software which was flexible, easy to learn, explicitly designed for the decentralized collection of health data in developing countries. DHIS2 is an internationally-recognized, free, and open-source software which has been successfully adopted in the health systems of over 55 developing countries. The global DHIS2 community is supported by various development partners and philanthropy organizations, making it highly sustainable with new improved versions of the products released constantly. DHIS2 is the best and the largest deployment in Bangladesh.

Data from community clinics and programs, like MNCAH, IMCI, EPI, TB, NCDs, communicable diseases, HIV/STD, nutrition, cervical cancer and breast cancer screening, obstetric fistula screening and care program, are

Figure 6.8. Local Health Bulletins in dashboard



being flown to the national HMIS. Data from the DGFP, NGOs, DPs, and urban health dataset managed by DMIS as well as financial data for annual development program are also being received by the national HMIS.

Using DHIS2, the MOHFW developed an electronic central repository for national health data called the National Data Warehouse. It aims to bridge the gap between the fragmented systems by bringing together information from various databases. In addition, the Data Warehouse provides rich data-mining functions to generate reliable and accurate data. These are such data that decision-makers need for planning and monitoring health interventions across all levels of the health system.

Dashboard: Real-time online dashboard on health information

Under the Ministry of Health and Family Welfare, the Management Information System (MIS) of the DGHS has introduced an innovative system called Health Dashboard to connect modern digital technology to health services. Through this dashboard, information from various government-owned specialized hospitals, district hospitals, upazila health complexes, healthcare centers, and community clinics can be viewed. The information is related to routine health data, such as healthcare service delivery, various important health indicators, human resource,

and activities in biometric mode, etc. Figure 6.9 shows the screenshot of the DGHS dashboard.

Basically, a dashboard engine works in the background, which automatically collects data from various sources in the national health-related data. The Warehouse, through the Extract-Transform-Load (ETL) process, stores various business intelligent tools, such as Tableau, Clicdata, Google API, etc. in an easy and nice way.

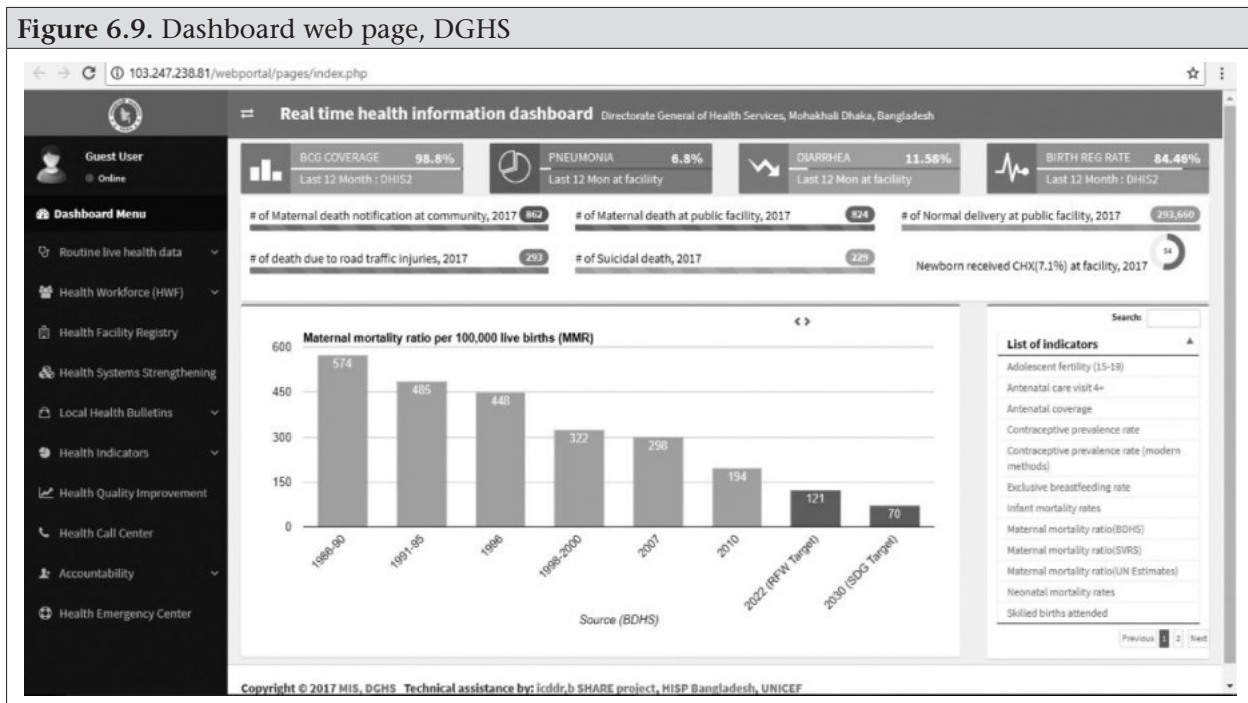
Features

- Routine live health information
- Health workforce (HWF)
- DGHS logistic status
- Health facility registry
- Health systems strengthening
- Local health bulletins
- Health indicators
- Health quality improvement
- Health Call Center (16263)
- Accountability
- Health Emergency Center

Human Resource Information System (HRIS)

The Ministry of Health and Family Welfare was in need for a single central solution where all agencies will be managing their staff members. Stakeholders wanted to know

Figure 6.9. Dashboard web page, DGHS



how human resources are distributed across locations, with different parameters, for planning and projection for the next year about how many staff members from which discipline are required. That was not an easy task; all data need to be using the same terminology and should be prepared using the same master dataset, e.g. name of facility, location, and designation should be identical everywhere. So, the Ministry introduced central human resource information system (HRIS) designed in way so that it can capture and maintain human resource information for the entire health sector. It is based on 4 registries; Geo-location Registry, Facility Registry, Sanctioned Post Registry, and Provider Registry. All human resource-related activities, including transfer, promotion, leave, ACR, and others, are automated through this system. The DGHS is the main stakeholder of this system. Initially, the HRIS system, formerly named Human Resource Management System (HRM), was developed by MIS-DGHS. Currently, the MIS-DGHS plays a vital role in updating the HRIS system. Figure 6.10 shows the screenshot of home page of the human resource information system of the DGHS.

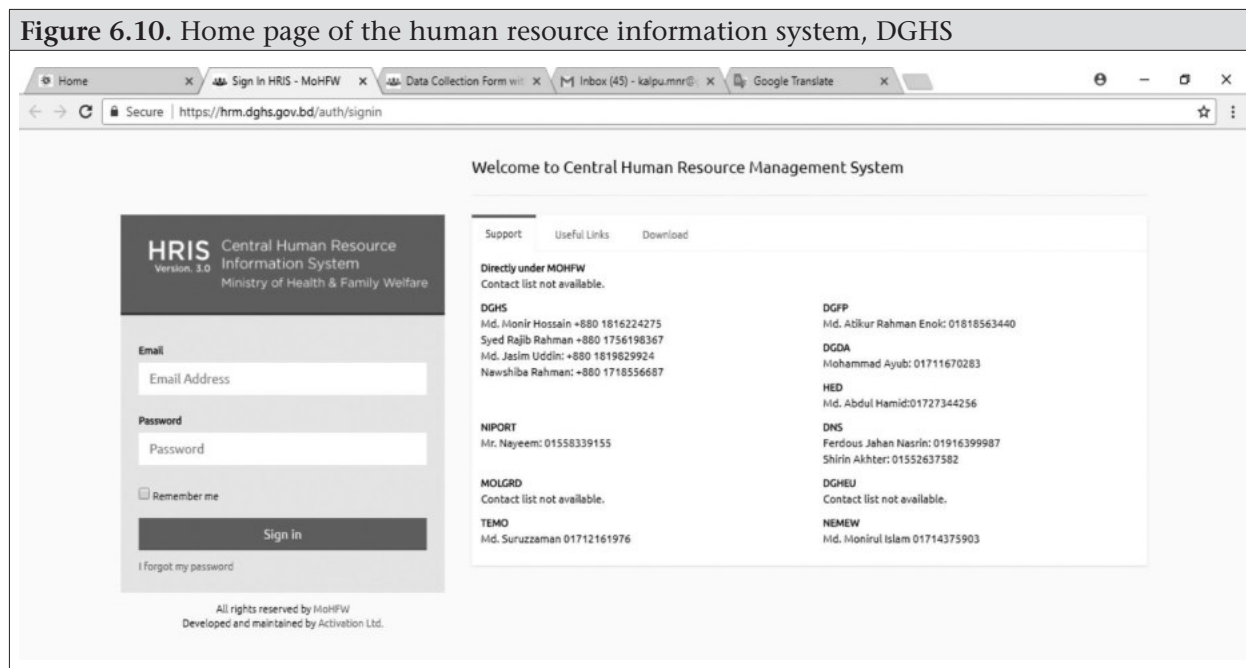
Shared Health Record (SHR)

Shared Health Record (SHR) is a system that stores the lifetime medical history of citizens in electronic format, and Open Health Information Exchange is a gateway to the data. The electronic medical records (EMR) stored in SHR are shared through OpenHIE across many different medical or health facility management systems (like OpenMRS, OpenSRP, etc.), with proper access credentials and privileges where sensitive information is protected with special security. Patients do not need to carry their medical files when they visit any medical facility or a physician.

The primary goal of this system is to ensure healthcare service for every citizen at every level. This is very important to meet up the World Health Organization's latest health mandate to ensure universal health coverage (UHC) defined under 100 Core Health Indicators. For health, the Sustainable Development Goals (SDGs) are to achieve the success based on these 100 Core Health Indicators.

Shared Health Record facilitates capturing patients' medical data from hospitals, community clinics (CC), or even from patients'

Figure 6.10. Home page of the human resource information system, DGHS



homes visited by the community healthcare providers (CHCPs, HAs, and other personnel). The patients are registered to the system once but they can get health services from any health facility or a physician as many times as required. The patient's disease profile, treatment details, laboratory diagnoses, etc. are available as historic data through the system to the physician for better diagnoses and treatment.

SHR provides necessary data for various reports and dashboards for decision-making. Once the system is rolled out to the national level, it will be very easy for the decision-makers to understand the current health situation in the country from the national level, division level, district level, upazila level, or even at the ward level. These reports and dashboards also provide detailed information on the performance of the health facilities, like hospitals and health service providers, like doctors.

SHR was built on an open-source technology, which means it is free to use and customize. The recognized health standards had been followed for various medical data, such as on disease, drugs, procedures, etc. SHR has a collection of rich Application Programming

Interfaces (APIs) that facilitate integration with any standard health information system (HIS). Exchanging health-related data through these APIs is secure, robust, and reliable. The database of SHR is a non-sequel database built on distributed system, which supports self-replication in multiple nodes, securing the data to be available if any node fails.

Currently, SHR has been implemented in Kaliganj Upazila Health Complex, Gazipur, and Gazipur General Hospital. Apart from SHR, the hospital automation system in Dhaka Medical College Hospital (DMCH) and the National Institute of Neurosciences & Hospital (NINS) has been almost done in 2016-2017. LAN and infrastructure were set up and will run fully by the end of 2017. These are in addition to the earlier hospitals that started automation system, viz. National Institute of Kidney Diseases & Urology (NIKDU), Government Employees' Hospital, Azimpur Maternity Hospital, Bangladesh Secretariat Clinic, National Institute of Traumatology, Orthopedics and Rehabilitation (NITOR), and National Institute of Cardiovascular Diseases (NICVD). However, the real expansion of automation for a reasonable number of hospitals will be seen through scaling-up of the

Shared Health Record. Figure 6.11 shows the architecture of SHR and OpenHIE.

Telemedicine Services

In Bangladesh, there is shortage of skilled healthcare personnel in remote areas; by recognizing this bitter fact, the GOB has started Telemedicine Services under the leadership of the DGHS and monitoring by its MIS unit centrally. It has started from 8 telemedicine centers in the fiscal year 2009-2010. Hon’ble Prime Minister Sheikh Hasina formally inaugurated the Telemedicine Services on 6 July 2011 at the National Digital Innovation Fair held in Bangabandhu Novo Theater. Following that, more or less 10 centers each year have been added; till now, there are 84 telemedicine centers, including Telemedicine Monitoring Unit at the MIS-DGHS. Additional 10 centers are in the process of establishment by the end of 2017.

Among 84 telemedicine centers, 8 at the specialized hospitals, 7 at MCHs, 11 at DHs, 57 at UHCs, 1 at MIS monitoring cell, sometimes, provide consultation service also. Telemedicine

Monitoring Unit of the MIS-DGHS especially received complaints and problems faced by other telemedicine centers regarding hardware, software, unavailability of physicians at the sites, etc. Telemedicine centers are equipped with telegadgets, like telestethoscope, teleECG, telemicroscope, teleglucometer, etc, and also high-quality camera, big-screen monitor, and computer. Figure 6.12 shows all telemedicine centers by type of institution, except one at the MIS monitoring cell.

There are still challenges that we are facing, like complex human and cultural factors. Some patients and healthcare workers resist the adoption of service models that differ from traditional approaches or indigenous practices while others lack ICT literacy to use telemedicine approaches effectively.

Figure 6.13 shows the monthly visits of patients at the telemedicine centers in 2016-2017 (September 2017). The graph shows that the number of patients increased in 2017; it may be due to increase in awareness of the Telemedicine Services and also hard work of staff in the health facilities to motivate patients.

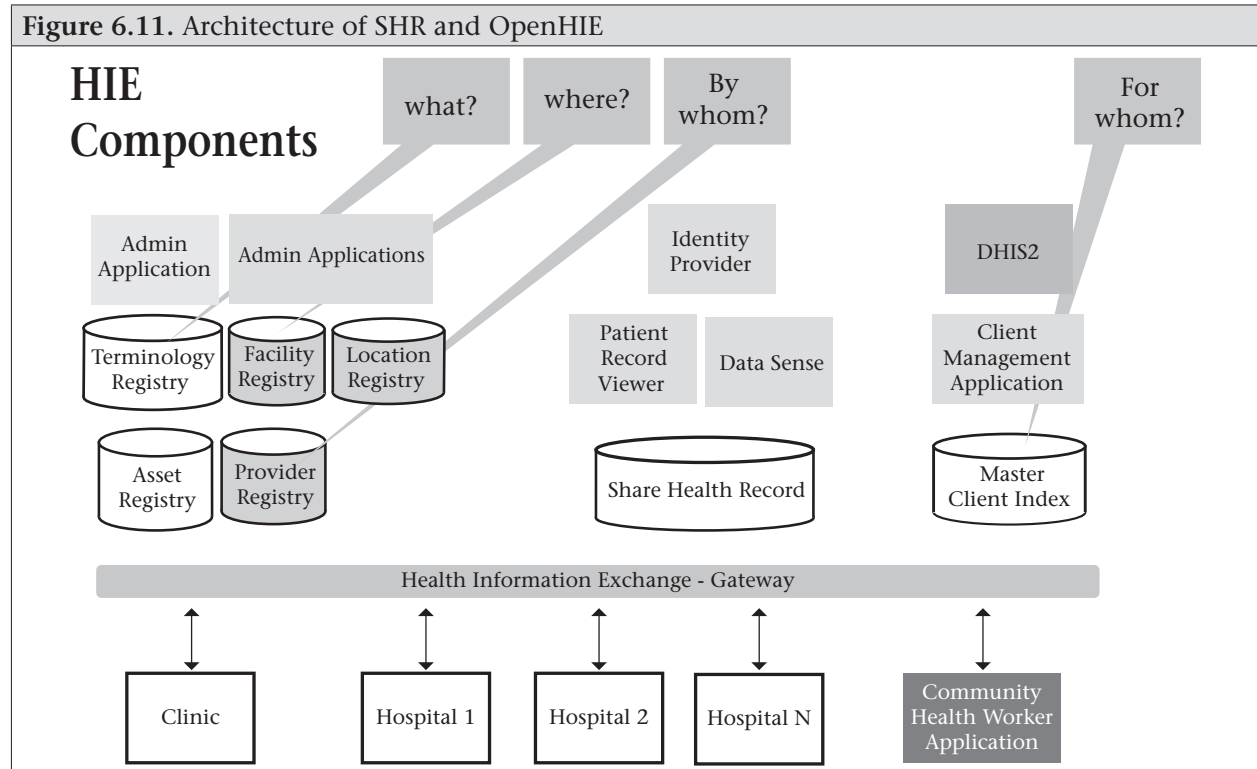


Figure 6.12. Number of telemedicine centers by type of institution

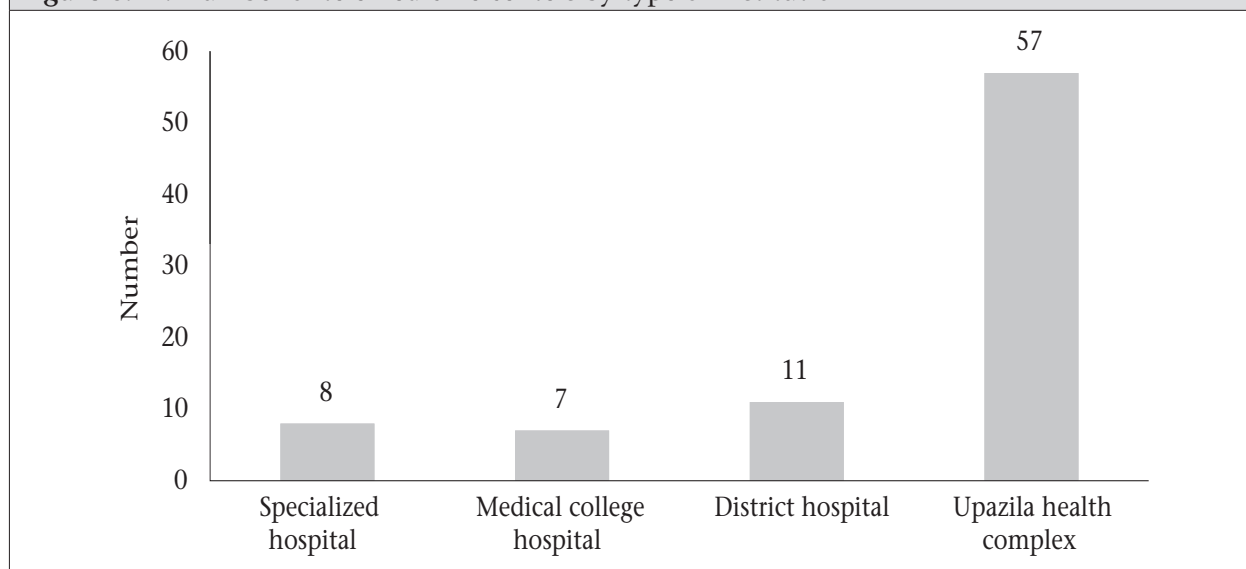
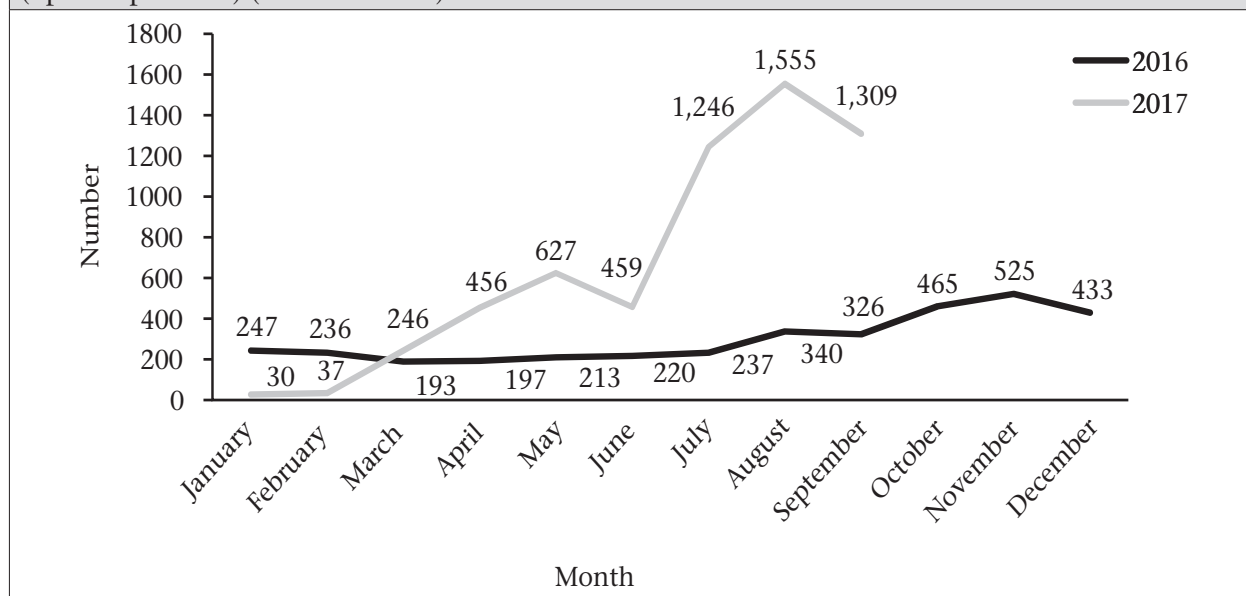


Figure 6.13. Month-wise distribution of patients served by Telemedicine Services in 2016- 2017 (up to September) (Source: DHIS2)



In addition to mobile phone-based health service and advanced telemedicine, Skype-based tele-consultation is also pursued. All functional community clinics (~13,000) and all union health centers (~1,275) have been brought under the coverage of Internet connectivity through provision of one laptop and one broadband wireless modem in each facility. In community clinics or most of the union health centers, no qualified doctor is posted. Yet, there may

be occasions when some patients need to consult a more qualified medical practitioner. In such cases, a Skype video-conferencing can be set up to hook the community clinic or union health center to a doctor sitting in the nearby upazila hospital to have a direct conversation between the patient and the doctor. The laptop computers in the community clinics and union health centers are being used for multiple purposes, viz. providing Telemedicine Services, updating

community health data, health education to people, training of health staff, monitoring of clinic operation time, email communication, and Internet-browsing. The National ICT4 Development Award in 2011 was won for the telemedicine project of MIS-Health.

Video-conferencing

Video-conferencing was started for ease of administration and can convey direct message from the Ministry and DG's office to all divisional and civil surgeon's offices on virtual setting. The system is providing an opportunity for arranging remote meetings, conferences, training, and emergency order (during natural disasters, like flood, landslide, Rohingya influx, etc.), thus minimizing communication gaps among the Ministry, DG's office, and peripheral health offices. This technology has made significant improvement in administration. The system has been installed in 77 strategic locations (MOHFW, DGHS, DGFP, offices of 7 division directors, and 64 civil surgeons); 57 UHCs having telemedicine centers are using video-conferencing.

The MIS-DGHS also took initiative to extend this video-conferencing system in all tertiary-level hospitals/institutes, medical colleges, medical college hospitals as well as all district hospitals to be completed by fiscal 2017-2018. Figure 6.14. shows video-conferencing with DHO, CSO from DG's office.

Additional monitoring tool based on citizen's complaints: The Third Eye

Since 2012, an exciting and effective innovation—complaint-suggestion box—has been added to the existing service line of the MIS-DGHS. Citizens are now taking part in ensuring accountability of the service providers in health service delivery system. The SMS-based complaint-suggestion box continues to remain as the innovative and effective mechanism to know citizens' feedback on the quality of service in the public hospitals. This system is frequently recommended for further promotion to improve accountability and transparency of public hospitals. It is one of the components to measure DLI (Disbursement Link Indicator). This system is working in 739 public hospitals and health organizations. In each of these facilities, a display board is mounted on the wall. The display board describes how to send complaints about quality of services or suggestions for improvement of services. Clients of the hospitals or health organization make complaints or suggestions in the form of SMS to a particular mobile number. Senders' mobile numbers are kept confidential, which is only seen by the Admin. Presently, on an average, the system receives 30 SMS per day. In 2016, the system received 954 complaints/suggestions via SMS from public but, in 2017, the number goes up to 3,327 only in 9 months (Figure 6.15); from this, it is clear that this system is being accepted by the citizens and is

Figure 6.14. Video-conferencing with DHO, CSO from DG's office



user-friendly. Citizens can also place complaints and suggestions on public/private hospital service management through *Shasthaya Batayan* number (16263). A web-server located at the MIS-DGHS receives the complaints and suggestions instantly displayed on the web portal; some details also go for public viewing. Responsible staff members at the MIS-DGHS check the complaints and suggestions, and then talk to the SMS senders to know more about the message. After confirmation with SMS senders, assigned staff members talk to the local or other responsible authorities to solve the problem or work on the suggestions. The public view of the complaint-suggestion box is available at www.dghs.gov.bd>>Database Login >>Complaint & Suggestion Box.

Figure 6.15 shows the month-wise complaints and suggestions received so far during 2017.

Monitoring staff attendance through fingerprint machines in remote public hospitals

Particularly in the hospitals and health centers in remote areas, absenteeism of service providers from their workplaces is a common complaint in Bangladesh and many other

countries. To track the office attendance of government health staff in workplaces, the MIS-DGHS installed remote biometric time-attendance machines in all upazila and district hospitals and in some tertiary hospitals. These machines were installed 5 years back; by phases, all UHCs and DHs have been covered by now. These are low-cost fingerprint biometric machines, and the recorded touch-encounter scan can be tracked from central office of the MIS-DGHS. During installation, staff members' fingerprints were recorded in the database. Every day, the staff members need to touch the sensor of the machine during their check-in and check-out. The machine itself can keep in memory 30,000 encounters. At the MIS-DGHS, a web-server captures the attendance data whenever the server finds the local computers switched on and connected to the Internet for any purpose. Pre-defined web-based reports can be generated on the server-side, which can be accessed through web-browser from any place. Furthermore, the GIS map of office attendance also can be viewed from <http://www.dghs.gov.bd>>>Data>>Office Attendance Monitoring>>Office Attendance GIS Map.

Table 6.1 shows the attendance summary sent by biometric device.

Figure 6.15. Month-wise number of complaints and suggestions received in 2017 (Source: DGHS dashboard)

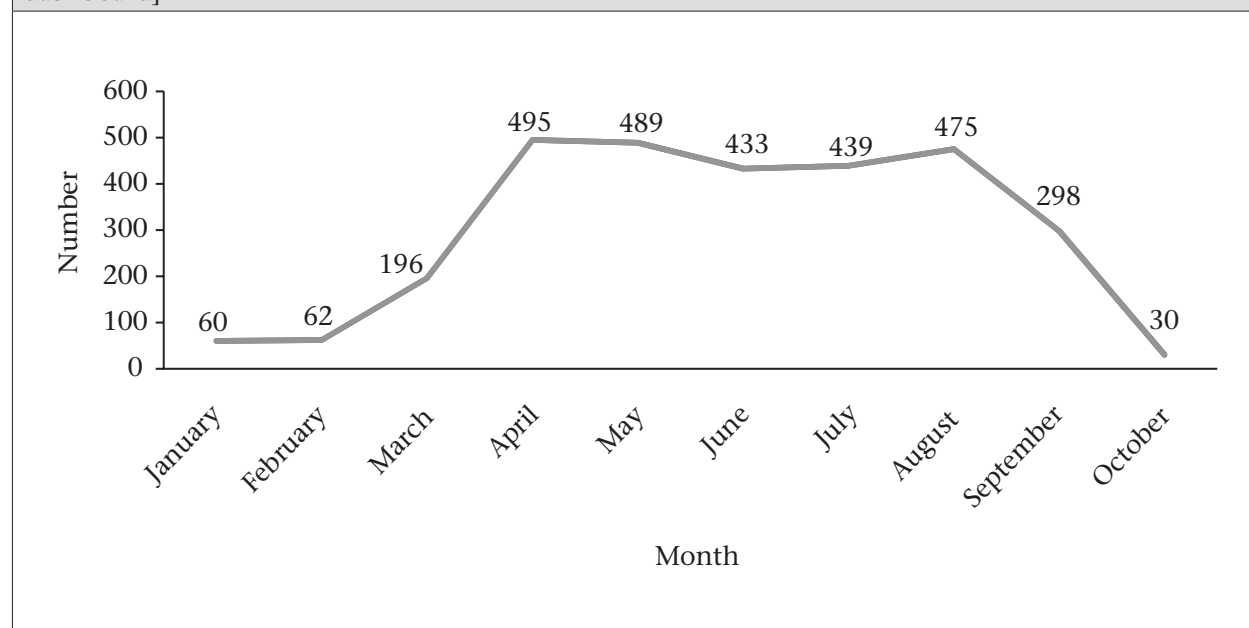


Table 6.1. Attendance summary sent by biometric device

Real time health information dashboard Directorate General of Health Services, Mohakhali Dhaka, Bangladesh													
Attendance Summary * Some staffs work in roster. They might be available later.												Home	Division
Reporting Period		10/04/2017	10/04/2017	Search		last updated at						October 4, 2017 10:10:10 am	
S1	Division	Orgs. with functioning attendance system	Orgs. sending data	No. of Posts				No. of staffs			Attendance* (%)	View	
				Sanctioned	Filled	Vacant	Vacancy(%)	Rgd. in attendance system	Present*	Absent			
1	Barisal	39	27	5,756	4,041	1,715	29.79	1,744	769	975	44.09	Trend	
2	Chittagong	95	46	14,128	9,627	4,501	31.86	2,482	1,128	1,354	45.45	Trend	
3	Dhaka	91	57	22,573	17,668	4,905	21.73	4,264	2,077	2,187	48.71	Trend	
4	Khulna	60	48	8,947	6,116	2,831	31.64	3,353	1,847	1,506	55.08	Trend	
5	Mymensingh	32	24	5,061	3,653	1,408	27.82	1,422	553	869	38.89	Trend	
6	Rajshahi	63	36	9,495	6,940	2,555	26.91	2,042	953	1,089	46.67	Trend	
7	Rangpur	58	19	7,675	5,532	2,143	27.92	1,132	468	664	41.34	Trend	
8	Sylhet	37	25	5,009	3,138	1,871	37.35	1,353	561	792	41.46	Trend	
Total		475	282	78,644	56,715	21,929	27.88	17,792	8,356	9,436	46.96		

Shasthaya Batayan: Health Call Center (16263)

The multipurpose Health Call Center, launched by the MIS-DGHS in September 2015, is a round-the-clock center (24 hours, all 7 days a week). A short calling code '16263' is being used for receiving calls and text messages from the clients. The call center is providing live health counseling, complaints management, and content delivery. Figure 6.16 shows 2016 and 2017 data on calls received by *Shasthaya Batayan*. Total numbers of calls received in 2016 and 2017 were 12,05,898 and 7,53,304 respectively (Figure 6.16).

Reasons for calls have been categorized as: doctor's consultation, health information, ambulance information, complaints, and call to know about services. Among the total calls, the number of those relating to doctor's consultation was more, and the number of calls on complaints was less. In 2017, data were collected up to September. More details on month-wise data can be viewed from public dashboard of the DGHS web portal: Eg. <http://www.dghs.gov.bd>>>Dashboard>>Health Call Center.

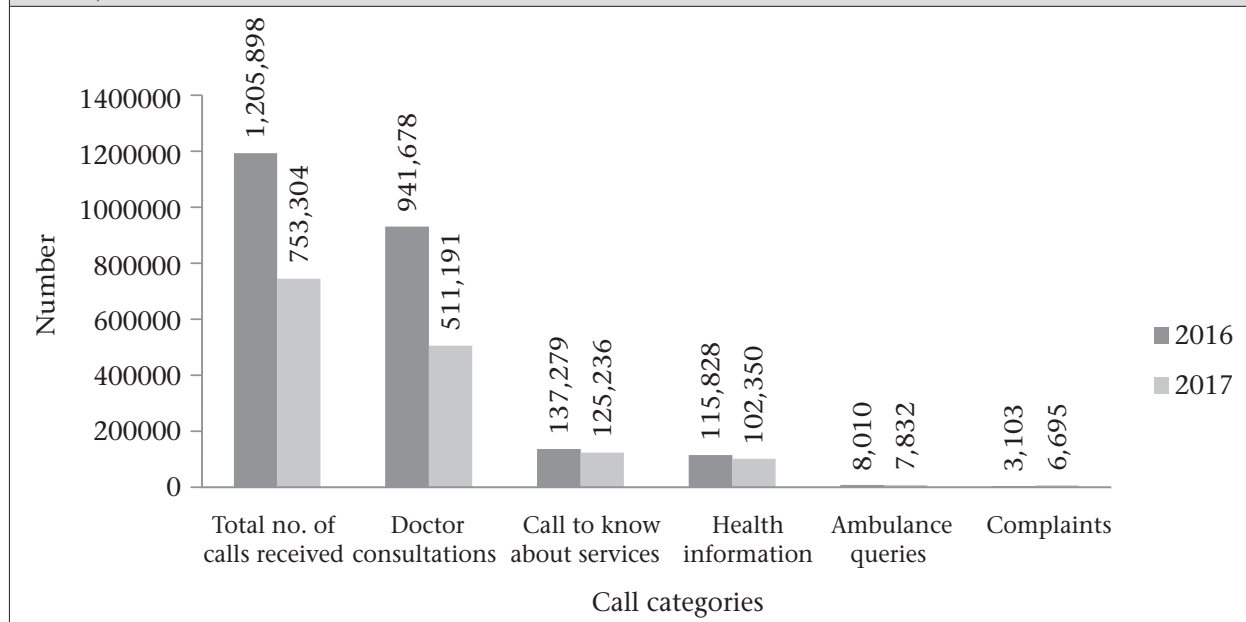
Bulk SMS

Introduced in 2009 by the MIS-Health, an innovative bulk SMS system remains an effective solution to disseminate quick and urgent messages to health managers. The use of bulk SMS was frequent and demand-driven. For the bulk SMS system, mobile phone numbers of all health managers and staff members down to the grassroots level were collected and grouped. One or multiple group(s) can receive customized text messages instantly.

Digitally-managed medical and dental admission tests for students

Digitally-managed medical and dental admission tests for students were started in 2001 for both public and private medical and dental colleges of Bangladesh; the system still continues. Admission-seekers submit applications online by using electronic forms. The system then checks and authenticates prerequisite educational qualifications from databases on secondary and higher secondary school certificate examinations. Students then submit test-fees by mobile phone top-up. On

Figure 6.16. Number of calls received through *Shasthaya Batayan* Service (Source: Dashboard, DGHS)



successful fee submission, a text alert informs the students for collecting the admit cards from a specified web site. Locations and seating plans for the admission tests are also managed and informed digitally. Sending questions to the examination halls and getting answer-sheets are monitored centrally by Global Positioning System (GPS). All answer-sheets are read by OMR machine, and results are prepared with intelligent software to inform the eligible candidates about which institutions they are qualified for admission. Results are sent to students' mobile phone numbers and also published through the DGHS web site.

Digital training facility and connectivity as other eHealth initiatives

Including an auditorium created by the MIS-Health in 2009, the digital training facility was efficiently used over the past years. Its attraction as one of the best meeting and seminar places continues to increase. Equipped with state-of-the-art gadgets, such as digital podium and sound system, interactive board, wireless presentation, wi-fi network, video-conferencing, etc., the facility attracts several organizations to hold their workshops,

meetings, and symposia. The MIS-DGHS is still in the forefront in spreading Internet connection all over the country, which now extends down to the grassroots-level health facilities and workers (all union health centers, community clinics, and community health workers). The union health centers and community clinics have laptop computers and wireless modems, and the community health workers have Android Tablets. To ensure appropriate support for the HIS and eHealth solutions, a robust, highly-secured, and never-sleep data center (DC), with plenty of storage space, has been put in place. This is a world-class state-of-the-art data center equipped with high-end servers, firewalls, VMware

The union health centers and community clinics have laptop computers and wireless modems, and the community health workers have Android Tablets.

virtualization, underground cable system, automatic fire protection system, and humidity control system. Also, four tiers of power supply, remote monitoring system, text alerts by mobile phone, etc. are maintained in the data center located at the MIS-DGHS. There exists a disaster-recovery (DR) center in Khulna, an area not prone to earthquake and located 300 km away from Dhaka. Figure 6. 17 portrays the picture of Data Center, MIS-DGHS

Figure 6.17. Picture of Data Center, MIS-DGHS



Technical partners

Along with the MOHFW, other technical partners assist the MIS-DGHS to make technology-related solutions, training, and capacity-building; these include a2i Project, World Bank, WHO, UNICEF, DFID, UNFPA, Rockefeller Foundation, JICA, USAID, icddr, MEASURE Evaluation, CIDA, UNESCAP, JPGSPH-BRAC University, BRAC, JHU, MSH (SIAP), Save the Children, D.Net, CIRPB, CIDA, etc.

Capacity improvement and maintenance

Human resource for HIS and eHealth

There are 787 sanctioned posts of statistical staff throughout the country. These staff members are already made skilled through training and engagement in practical work since 2009. These personnel are used as dedicated HIS and eHealth staff. Other staff members are also being trained to play their roles in real-time data-entry at the

Table 6.2. Distribution of sanctioned posts of HIS and eHealth staff by type of organization and the vacancy situation (2017)

Staffing situation	Sanctioned posts	Existing staff	Vacant
Upazila hospital and health office	482	326	156
District civil surgeon's office	121	57	64
MIS-DGHS	92	40	52
Divisional health office	19	18	1
Postgraduate teaching institute and hospital	8	4	4
DGHS	5	1	4
Medical college hospital	17	6	11
100- to 300-bed hospitals	31	12	19
TB clinic at Chankhar Pool of Dhaka city	1	1	0
Specialized hospital	5	3	2
IEDCR	1	1	0
IPHN	3	1	2
NIPSOM	1	1	0
Total	787	471	316

Table 6.3. Hardware and machinery procurement from fiscal 2012-2013 through 2016-2017

Hardware	FY 2012-2013	FY 2013-2014	FY 2014-2015	FY 2015-2016	FY 2016-2017	Distribution
Desktop computer	4,360	6,000	-	1,725 (All-in-one desktop)	-	Hospitals, health offices, academic and training institutions from upazila to the national level across the country
Laptop computer	12,471	2,000	-	-	-	<ul style="list-style-type: none"> • FY 2011-2012: To 3,465 community clinics • FY 2012-2013: To union health facilities and to the remaining functional community clinics • FY 2013-14: To newly-functional community clinics and other health facilities and organizations
UPS (offline - 600 VA)	4,000	6,000	-	1,500	-	<ul style="list-style-type: none"> • Accompanies one for each desktop computer
Tablet device	84,00	10,000	-	4,025	-	<ul style="list-style-type: none"> • To community healthcare providers (HA, HI, and AHI)
Equipment for tertiary-level hospital automation	NICVD and NITOR	DMCH and NINS	-	-	-	-
Equipment for telemedicine centers and peripherals	10	15	15	10	-	<ul style="list-style-type: none"> • FY 2009-2010: 8 telemedicine centers established in 8 hospitals and 1 coordination center at the MIS-DGHS • FY 2011-2012: 10 additional telemedicine centers in 10 hospitals • FY 2012-13: 10 additional centers in 10 hospitals • FY 2013-14: 15 more centers in 15 hospitals • FY 2014-15: 15 more centers in 15 hospitals • FY 2015-16: 10 additional centers in 10 hospitals

Table 6.3. Contd.

Table Continued...							
Hardware	FY 2012-2013	FY 2013-2014	FY 2014-2015	FY 2015-2016	FY 2016-2017	Distribution	
Data center equipment	Disaster-recovery service center at Khulna	Upgrading the existing data centers	Upgrading the existing data centers	-	-	<ul style="list-style-type: none"> FY 2011-12: Data center at the MIS-DGHS established FY 2012-2013: Disaster recovery-service (DRS) center in Khulna established FY 2013-2014: Data center and disaster-recovery service center upgraded FY 2014-2015: Data center and disaster-recovery service center upgraded 	
Medical biotechnology equipment			Equipment for research, development and innovation activities on molecular biology and genetic diagnosis	-	-	<ul style="list-style-type: none"> FY 2014-2015: Total:6, one each in 4 medical colleges, BSMMU, and CMBT-ideSHi Laboratory 	
Equipment for Local Area Networking (LAN)			Installation of LAN in health facilities	Installation of LAN in 32 civil surgeon's offices and 11 tertiary hospitals	-	<ul style="list-style-type: none"> FY 2014-2015: All UHCs and district-level hospitals 	
Printer	-	-	-	3,450	-	-	-

Table 6.4. Number of desktop and laptop computers, monitors, printers, UPSs, and PDAs repaired in FY 2016-2017 by the MIS-DGHS							
Institution	Desktop	Laptop	Monitor	Printer	UPS	PDA	Total
DGHS	75	35	20	45	5	10	190
Specialized institutes	20	12	6	10	0	5	53
Civil surgeon's offices	10	42	7	22	7	18	106
District hospitals	4	7	5	10	0	15	41
Upazila hospitals with CC	66	1,244	10	45	10	319	1,694
Total	175	1,340	48	132	22	367	2,084

source of data. The distribution of 787 statistical staff members by type of organization is shown in Table 6.2.

Training, workshops, and seminars

Several types of training courses, workshops, and seminars of different durations were held in 2016-2017 both at the MIS-DGHS office in Dhaka and at the local hospitals/health offices. A total of 15,228 officers and staff members participated in the training courses, workshops, and seminars in FY 2016-2017. In foreign training, 38 participants attended courses in three different countries; 1,464 officers and staff members participated in the UNICEF-supported training programs. It may be mentioned that some participants might

have attended more than one training course, workshop, or seminar.

Supply of ICT equipment and computer stationeries

Table 6.3 provides information on different types of hardware and machinery procured and distributed from FY 2012-2013 through 2016-2017. However, no procurement in FY 2016-2017 was done.

Repair and maintenance of computers, printers, and other accessories

The MIS-DGHS repaired desktop and laptop computers, monitors, printers, UPSs, and PDAs. Table 6.4 summarizes the information.

CHAPTER 7

ACCESS TO ESSENTIAL MEDICINES AND BIOTECHNOLOGY

Advancement in health sector

The selection of essential medicines is only one step toward the improvement of the quality of healthcare; selection needs to be followed by appropriate usage.

Essential medicines, as defined by the World Health Organization (WHO), are “those drugs that satisfy the healthcare needs of the majority of population; they should, therefore, be available at all times in adequate amounts and in appropriate dosage forms, at a price the community can afford.”

An essential drug may also be considered indispensable for treatment of a disease. All life-saving drugs are essential but the incorporation of a certain drug in the list of essential drugs of a country is determined by the existence of some specific diseases, or by the fact that those diseases pose a threat to the public health.

The selection of essential medicines is only one step toward the improvement of the quality of healthcare; selection needs to be followed by appropriate usage. Each individual should receive the right medicine in an adequate dose for an adequate duration, with appropriate information and follow-up treatment, and at an affordable cost.

Bangladesh perspective and national drug policy

Essential drugs are the foundation for public health program aimed at reducing morbidity and mortality in the developing world like Bangladesh, and expenditure incurred for pharmaceuticals can account for a high proportion of the total health expenditure of the country. Important health programs that rely upon essential drugs include child survival programs, antenatal care, treatment of enteric and respiratory pathogens, control of tuberculosis, and malaria.

Under the new list of essential drugs in Bangladesh, the number has been expanded to 285, reflecting advances in medical treatment during the last two decades.

Bangladesh formulated its National Drug Policy (NDP) and promulgated the Drugs Control Ordinance in 1982 to ensure that common people can get the essential and necessary drugs easily and to warrant the

quality and safety of these essential drugs; 150 drugs were identified as essential, with controlled price. Since 1993, the number of the price-controlled drugs has been reduced to 117 that represent the primary healthcare drugs. Since 1982, the growth of local drug production has been accelerated. According to the Directorate General of Drug Administration records, all essential drugs were produced locally in 2016. Currently, there are 28,010 brand names of the drugs in the market, which involve 1,455 generic and locally-produced drugs that meet 98% of the local demand. There are 269 licensed pharmaceutical factories in the country; three of these are owned by multinational companies; 95% of the raw materials used in the local production of drugs are imported. Being a drug-exporting least-developed country, Bangladesh has a unique position in the region, for not needing adherence to the TRIPS Agreement until 2016.

On 18 December 2016, the Cabinet approved the National Drug Policy 2016 to ensure that the manufacture of medicines is in compliance with international standards to increase export of pharmaceutical items.

The policy was approved in a regular Cabinet meeting held at the Secretariat, with Hon'ble Prime Minister Sheikh Hasina in the chair.

Some new clauses have been added to the new policy that will replace the previous Drug Policy formulated in 2005.

The concerned authorities will have to update the price of drugs every year and publish the updated prices online.

The concerned authority involved with the new policy also suggests the formation of a National Drug Regulatory Authority to stop adulteration of medicines and raw materials.

WHO support and programmatic initiative

WHO, through the country collaborative program in Bangladesh, has been supporting

the National Drug Regulatory Authority—the Directorate General of Drug Administration under the Ministry of Health and Family Welfare of the People's Republic of Bangladesh since it was established in 1974. This includes the technical and administrative capacity-building and implementing interventions for improving access, quality, and rational use of essential drugs.

While implementing EDM Work Plan 2016-2017, WHO had provided support to the relevant national authorities in the following areas:

- Capacity-building of the Essential Drugs Company Limited in monitoring and improving the quality of essential drugs produced. This included the supply of necessary equipment and local and external training of the manpower on quality improvement
- Capacity-building of the Directorate General of Drug Administration to perform its functions as the National Drug Regulatory Authority. This included the procurement of necessary supplies and equipment and training of manpower on legal and administrative aspects of drug registration and quality monitoring
- Capacity-building of Drug Testing Lab in the DGDA and Chittagong Drug Testing Lab. Both labs were supplied with quality control equipment and the necessary reagents in addition to training of the relevant manpower
- Implementing training on Good Manufacturing Practices for quality managers in the pharmaceutical sector.
- Post-marketing surveillance where 5,362 samples were collected during 2015, and the substandard rate was found to be 1.73%

Objective of the WHO program

The overall objective of the WHO program is to provide technical support to the Government

of Bangladesh in the formulation of national drug policies, strategies and plan of actions, and developing guidelines and tools for implementation, monitoring, and evaluation of interventions for improving access, quality, and rational use of traditional and essential medicines.

The specific objectives are to:

- ensure the quality of locally-produced and imported drugs
- promote the rational use of allopathic and traditional medicines

All essential medicines are listed in the Table 7.1

Table 7.1. List of drugs that are considered essential in Bangladesh		
Sl. no.	Drugs/Medicines	
	1. Anesthetics	
	1.1 General anesthetics and oxygen	
	1.1.1 Inhalational medicines	
1	Halothane	
2	Nitrous oxide-oxygen for anesthesia	
3	Oxygen	Inhalation
	1.1.2 Injectable medicines	
4	Thiopental Sodium	Injection
5	Ketamine	Injection
	1.2 Local anesthetics	
6	Lignocaine with or without Adrenaline	Injection 1% and 2%
7	Procaine Hydrochloride	Injection (Various strengths)
8	Bupivacaine Hydrochloride	Injection
	1.3 Pre-operative medication and sedation for short-term procedures	
9	Atropine Suphate	Injection
10	Morphine Suphate	Injection
	2. Analgesics, antipyretics, non-steroidal anti-inflammatory drugs (NSAIDs), medicines used in treating gout and disease modifying agents in rheumatoid disorders (DMARDs)	
	2.1 Non-opioids and non-steroidal anti inflammatory drugs (NSAIDs)	
11	Aspirin	Tablet 75-100 mg
12	Paracetamol	Tablet/Syrup/Suspension/Suppository
13	Pethidine Hydrochloride	Injection
14	Indomethacin	Capsule/Suppository/Sustained Release Tablet
15	Ibuprofen	Tablet
16	Naproxen	Tablet
	2.2 Opioid analgesics	
	SL No-10	
	2.3 Medicines used in treating gout	
17	Allopurinol	Tablet
18	Colchicine	Tablet
Table 7.1. Contd.		

Table Continued...		
Sl. no.	Drugs/Medicines	
	2.4 Disease modifying agents used in rheumatoid disorders (dmards)	
19	Penicillamine	Tablet
20	Sulphasalazine	Tablet
21	Sodium Aurothiomalate	Injection
22	Methotrexate	Tablet/Injection
23	Chloroquine	Oral liquid/Tablet
	3. Anti-allergics and medicines used in anaphylaxis	
24	Chlorpheniramine Maleate	Tablet/Syrup/Injection
25	Prednisolone	Tablet
26	Dexamethasone	Tablet/Cream/Injection
27	Hydrocortisone	Injection/Cream/Ointment
28	Promethazine Hydrochloride	Tablet/Injection
	4. Antidotes and other substances used in poisonings	
	4.1 Non-specific	
29	Activated Charcoal	Tablet
	4.2 Specific	
30	Naloxone Hydrochloride	Injection
31	Pralidoxime Mesylate	Injection
	SL No-09	Injection/Eye drop/ Ointment
	5. Anticonvulsants/antiepileptics	
32	Phenobarbitone	Tablet/Injection
33	Phenytoin	Tablet/Capsule/Elixir
34	Ethosuximide	Capsule
35	Magnesium Sulphate 50%	Injection
	6. Anti-infective medicines	
	6.1 Anthelmintics	
	6.1.1 Intestinal anthelmintics	
36	Mebendazole	Tablet
37	Albendazole	Chewable Tablet
38	Levamisole	Tablet/Syrup
39	Niclosamide	Tablet
	6.1.2 Antifilarials	
40	Diethylcarbamazine	Tablet/Suspension
	SL No-37	
	6.2 Antibacterials	
	6.2.1 Beta-Lactam medicines	
41	Amoxicillin	Capsule/Dry syrup/Injection
42	Ampicillin	Capsule/Dry syrup/Injection
Table 7.1. Contd.		

Table Continued...		
Sl. no.	Drugs/Medicines	
43	Phenoxymethyl Penicillin	Tablet/Syrup
44	Benzathine Penicillin	Injection
45	Flucloxacillin	Capsule/Syrup/Injection
46	Procaine Penicillin	Injection
47	Cephradine	Capsule/Syrup/Injection
48	Cephalexin	Capsule/Tablet/Syrup
49	Benzyl Penicillin	Injection
50	Cloxacillin	Capsule/Syrup/Injection
51	Amoxiclav	Tablet/Capsules/Dry syrup/ Injection
	6.2.2 Other antibacterials	
52	Erythromycin	Tablet/Oral suspension/ Injection
53	Chloramphenicol	Eye/Ear drops/Ointment
54	Doxycycline	Capsule
55	Co-trimoxazole	Tablet/Suspension
56	Metronidazole	Tablet/Oral liquid/Injection
57	Tetracycline/Oxytetracycline Hydrochloride	Capsule/Injection
58	Nalidixic Acid	Tablet/Syrup
59	Trimethoprim	Tablet/Suspension/Injection
	6.2.3 Antileprosy medicines	
60	Clofazimine	Capsule
61	Dapsone	Tablet
	6.2.4 Antituberculosis medicines	
62	Ethambutol	Tablet
63	Isoniazid with or without Ethambutol	Tablet
64	Pyrazinamide	Tablet
65	Rifampicin with or without Isoniazid	Tablet
66	Streptomycin Sulphate	Injection
67	Rifampicin+Isoniazid+Pyrazinamide with or without Ethambutol	Combination Tablet
68	Rifampicin+Isoniazid+Ethambutol	Tablet
	6.3 Antifungal medicines	
69	Griseofulvin	Tablet
70	Clotrimazole	Cream/Pessaries/Solution/ Dusting powder
71	Nystatin	Tablet/Suspension/Cream/ Gel
Table 7.1. Contd.		

Table Continued...		
Sl. no.	Drugs/Medicines	
72	Preparations of Imidazole or Nystatin for Vaginal and Vulval Candidiasis	
	6.4 Antiviral medicines	
73	Acyclovir	Tablet/Cream/Eye ointment Intravenous Infusion
74	Nelfinavir (NVP)	Oral powder/tablet
	6.4.1 Antiherpes medicines	
75	Idoxuridine	Eye drops
	6.4.2 Antiretrovirals	
	6.4.2.1 Nucleoside/Nucleotide reverse transcriptase inhibitors	
76	Abacavir (ABC)	Oral liquid/Tablet
77	Lamivudine(3TC)	Oral liquid/Tablet
78	Tenofovir disoproxil fumarate (TDF)	Tablet
79	Zidovudine (ZDV or AZT)	Capsul/Oral liquid/IV infusion/injection/Tablet
	6.4.2.2 Non-nucleoside reverse transcriptase inhibitors	
80	Efavirenz	Capsul/Oral liquid/Tablet
81	Nevirapine(NVP)	Oral liquid/Tablet
	6.4.3 Other antivirals	
82	Oseltamivir	Tablet
	6.5 Antiprotozoal medicines	
	6.5.1 Antiamoebic and anti giardiasis medicines	
83	Diloxanide	Tablet
	6.5.2 Antileishmaniasis medicines	
84	Sodium Stibogluconate	Injection
	6.5.3 Antimalarial medicines	
	6.5.3.1 For curative treatment	
85	Artemether with Lumefantrine	Tablet
86	Primaquine	Tablet
87	Sulfadoxin with Pyrimethamine	Tablet
88	Artesunate	Injection/Tablet
89	Mefioquine	Tablet
90	Quninie	Injection/Tablet
	6.5.4 Antipneumocystosis and antitoxoplasmosis medicines	
91	Pyrimethamine	Tablet
	7. Antimigraine medicines	
	7. 1 For treatment of acute attack	
92	Sumatriptan Succinate	Tablet/Injection/Nasal spray
Table 7.1. Contd.		

Table Continued...		
Sl. no.	Drugs/Medicines	
93	Acetylsalicylic acid	Suppository/Tablet
	SL No-11	
	SL No-12	
	7.2 For prophylaxis	
94	Propranolol	Tablet
	8. Antineoplastic, immunosuppressives and medicines used in palliative care	
	8.1 Immunosuppressive medicines	
95	Azathioprine	Tablet/Injection
96	Cyclosporin	Capsule/Oral solution/ IV infusion
	8.2 Cytotoxic and adjuvant medicines	
97	Actinomycin D/Dactinomycin	Injection
98	Bleomycin	Injection
99	Calcium Folate/Calcium Leucovorin	Tablet/Injection
100	Cyclophosphamide	Tablet
101	Busulphan	Tablet
102	Cisplatin	Injection
103	Chlorambucil	Tablet
104	Crisantaspase/L-asparaginase	Injection
105	Thioguanine	Tablet
106	Vinblastine Sulphate	Injection
107	Vincristine Sulphate	Injection
108	Doxorubicin	Injection
109	Mercaptopurine	Tablet
110	Lomustine	Capsule
111	Melphalan	Tablet/Injection
112	Mitomycin	Injection
113	Mustine Hydrochloride	Injection
	8.3 Hormones and antihormones	
114	Tamoxifen	Tablet/Capsule
115	Vasopressin	Injection
116	Liothyronine Sodium	Tablet/Injection
117	Stilboestrol/Diethylstilboestrol	Tablet
	SL No. 26	Injection
	SL No. 27	Injection
	8.4 Medicines used in palliative care	
118	Hyoscine butylbromide	Tablet/Injection
119	Amitriptyline	Tablet
120	Propanthelene Bromide	Tablet
Table 7.1. Contd.		

Table Continued...		
Sl. no.	Drugs/Medicines	
121	Lactulose	Powder/Solution
	SL No. 26	Tablet/Injection
	9. Antiparkinsonism medicines	
122	Levodopa with Carbidopa	Tablet
	10. Medicines affecting the blood	
	10.1 Antianaemia medicines	
123	Ferrous Sulphate/Fumarate, with or without Folic Acid	Tablet/Syrup
124	Folic Acid	Tablet
	10.2 Medicines affecting coagulation	
125	Heparin	Injection
126	Dipyridamole	Tablet/Oral suspension/ Injection
127	Protamine sulphate	Injection
	11. Blood products and plasma substitutes	
	11.1 Plasma substitutes	
128	ACD Blood Pack/Double Bag/Triple Bag	
129	Plasma Substitutes/Dextran-40/ Succinylated Gelatin Intravenous Infusions	
130	Dextran 70	Injection
	11.2 Plasma fractions for specific use	
131	Plasma Fractions/Human Albumin	Solution for IV infusion
	12. Cardiovascular medicines	
	12.1 Antianginal medicines	
132	Metoprolol Tartrate	Tablet
133	Glyceryl Trinitrate	Tablet/Spray
134	Isosorbide Dinitrate	Tablet/Injection
135	Isosorbide Mononitrate	Tablet
	12.2 Antiarrhythmic medicines	
136	Procainamide	Injection/Capsule
137	Digoxin	Tablet/Injection
138	Disopyramide	Tablet/Capsule
	12.3 Antihypertensive medicines	
139	Atenolo	Tablet
	SL No. 94	Tablet/Injection
140	Methyldopa	
141	Captopril	Tablet
142	Diazoxide	Injection
143	Sodium Nitroprusside	Injection
144	Prazocin Hydrochloride	Tablet
Table 7.1. Contd.		

Table Continued...		
Sl. no.	Drugs/Medicines	
145	Enalapril	Tablet
146	Spironolactone	Tablet
147	Hydrochlorothiazide	Tablet
	12.4 Medicines used in heart failure	
148	Dopamine	Injection
	SL No. 137	
	SL No. 144	
	12.5 Antithrombotic medicines	
149	Clopidogrel	Tablet
	12.6 Lipid-lowering agents	
150	Simvastatin	Tablet
	12.7 Anti-Hypotensive medicine	
151	Metarminol	Injection
	13. Dermatological medicines (topical)	
	13.1 Antifungal medicines	
152	Miconazole	Cream/Dusting Powder/ Spray/Oral gel
153	Sodium thiosulphate	Solution
	13.2 Anti-infective medicines	
154	Potassium Permanganate	Crystal/Solution (0.1%)
	Sl No. 57	Ointment
155	Silver sulfadiazine	Cream
	13.3 Anti-inflammatory and antipruritic medicines	
156	Calamine	Lotion
157	Betamethasone	Ointment/Cream
158	Betamethasone with Neomycin	Ointment
159	Noemycin sulphate with Bacitracin	Ointment/Powder
	SL No. 26	Cream
	SL No. 27	Cream/Ointment
	13.4 Medicines affecting skin differentiation and proliferation	
160	Salicylic Acid+Benzoic Acid	Ointment/Cream
161	Fluorouracil	Capsul/Injection/Cream
162	Salicylic acid	Solution
	13.5 Scabicides and pediculicides	
163	Benzyl Benzoate	Lotion
164	Permethrin	Cream/Lotion
	14. Diagnostic agents	
	14.1 Ophthalmic medicines	
165	Flurescein	Eye drops
Table 7.1. Contd.		

Table Continued...		
Sl. no.	Drugs/Medicines	
166	Tropicamide	Eye drops
	14.2 Radiocontrast media	
167	Barium Sulphate (X-Ray Grade)	
168	Lodipamide	Injection
169	Lothalmic Acid with Meglumine	Oral solution
	15. Disinfectants and antiseptics	
	15.1 Antiseptics	
170	Chlorhexidine with or without Cetrimide	Solution/Cream
171	Povidone-Iodine 10%	Alcoholic Solution
172	Bismuth, Iodoform and Paraffin Paste(BIPP)	For nasal pack
	15.2 Disinfectants	
173	Chloroxylenol	Solution/Cream
	16. Diuretics	
174	Frusemide	Tablet/Injection
175	Bendrofluazide	Tablet
	SL No. 146	Tablet/Capsule
176	Mannitol Infusion Solution	10% and 20%
	SL No. 147	
	17. Gastrointestinal medicines	
	17.1 Antiulcer medicines	
177	Aluminium Hydroxide Gel with or without Magnesium Trisilicate	Tablet/Suspension
178	Ranitidine	Tablet/Injection
179	Omeprazole	Capsul/Tablet/Injection
	17.2 Antiemetic medicines	
180	Cinnarizine	Tablet
181	Metoclopramide Hydrochloride	Tablet/Oral Solution/ Injection
182	Prochlorperazine	Tablet/Injection
	SL No. 28	
	17.3 Anti-inflammatory medicines	
	SL No. 20	Suppository
	17.4 Laxatives	
183	Glycerin/Glycerol	Suppository for adult/child/ infant
184	Senna/Sannosides	Tablet
	17.5 Medicines used in diarrhea	
	17.5.1 Oral rehydration	
185	Potassium Chloride	Tablet/Syrup
Table 7.1. Contd.		

Table Continued...		
Sl. no.	Drugs/Medicines	
186	Sodium Chloride 0.9%, without or with Dextrose	Intravenous infusion
187	Sodium Bicarbonate	Infusion (Various strengths)
	17.5.2 Medicines for diarrhea in children	
188	Zinc sulphate	Oral liquid/Tablet
	18. Hormones, other endocrine medicines, and contraceptives	
	18.1 Adrenal hormones and synthetic substitutes	
189	ACTH	Injection
	SL No. 26	Injection
	18.2 Androgens	
190	Danazol	Capsule
	18.3 Contraceptives	
	18.3.1 Oral hormonal contraceptives	
191	Ethinylestradiol + levonorgestrel	Tablet: 30 micrograms + 150 micrograms
192	Ethinylestradiol + Lynestrenol	Tablet 0.0375 mg+0.75 mg
193	Desogesterol + Ethinylestradiol	Tablet : 0.15 mg+0.03 mg
194	Levonorgestrel	Tablet 750 microgram
	18.3.2 Injectable hormonal contraceptives	
195	Depot Medroxyprogesterone	Injection
	18.3.3 Intrauterine devices	
196	Copper-T containing device	
	18.3.4 Barrier methods	
197	Condoms	
	18.3.5 Implantable contraceptives	
198	Levonorgestrel-releasing implant	
	18.4 Estrogens	
199	Oestrogens with or without Progestogens for HRT	
	18.5 Insulins and other medicines used for diabetes	
200	Glibenclamide	Tablet
201	Insulin	Various preparations
202	Chlorpropamide	Tablet
203	Metformin Hydrochloride	Tablet
	18.6 Ovulation inducers	
204	Clomiphene Citrate	Tablet
	18.7 Progestogens	
205	Medroxyprogesterone acetate	Tablet 5 mg
	18.8 Thyroid hormones and antithyroid medicines	
206	Carbimazole	Tablet
207	Aqueous Iodine	Oral solution (Lugol's Solution)
Table 7.1. Contd.		

Table Continued...		
Sl. no.	Drugs/Medicines	
208	Thyroxine sodium	Tablet
209	Levothyroxine	Tablet
	19. Immunologicals	
	19.1 Diagnostic agents	
210	Sodium Diatrizoate with Meglumine Sodium	Injection
211	Tuberculin, purified protein derivative	Injection
	19.2 Sera and immunoglobulins	
212	Diphtheria Antitoxin	
213	Polyvalent Antivenoms	
214	Tetanus Antitoxin	Injection (Minimum 10.000 IU dose)
215	Human Normal Immunoglobulin	Injection
	19.3 Vaccines	
216	BCG Vaccine	
217	DPT Vaccine	
218	Pentavalent vaccine (DPT, HepatitisB, Hib)	
219	Pneumococcal Vaccine (PCV)	
220	Poliomyelitis Vaccine(OPV & IPV)	
221	MR Vaccine (Measles-Rubella)	
222	Measles vaccine	Injection
223	Hepatitis-B Vaccine	Injection
	20. Muscle relaxants (peripherally-acting) and cholinesterase inhibitors	
224	Neostigmine	Tablet/Injection
225	Suxamethonium Chloride	Injection
226	Pancurium Bromide	Injection
227	Gallamine Trithiodide	Injection
	21. Ophthalmological preparations	
	21.1 Anti-infective agents	
228	Framycetin Sulphate	Eye drops/Ointment
229	Gentamycin	Injection/Eye drops/Ointment
230	Tetracaine/Amethocaine	Eye drops
	SL No. 53	Eye drops/Ointment
	21.2 Anti-inflammatory agents	
231	Corticosteroid	Eye drops/Ointment
	SL No. 158	Eye drops
	21.3 Local anaesthetics	
	SL No. 230	
	21.4 Miotics and antiglaucoma medicines	
	Table 7.1. Contd.	

Table Continued...		
Sl. no.	Drugs/Medicines	
232	Pilocarpine	Eye drops (Various strengths)
233	Acetazolamide	Tablet
234	Carbachol	Tablet/Eye drops
	SL No. 151	
	21.5 Mydriatics	
235	Phenylephrine Hydrochloride	Eye drops
236	Homatropine	Eye drops
	SL No. 09	
	Injection/eye drop/ointment	
	22. Oxytocics and antioxytocics	
	22.1 Oxytocics	
237	Trifluperazine	Tablet/Oral solution
238	Oxytocin	Injection
239	Ergometrine	Injection
	22.2 Antioxytocics (tocolytics)	
240	Nifedipine	Capsule
	23. Peritoneal dialysis solution	
241	Intraperitoneal dialysis solution (of appropriate composition)	Parenteral solution
	24. Medicines for mental and behavioural disorders	
	24.1 Medicines used in psychotic disorders	
242	Chlorpromazine Hydrochloride	Tablet/Syrup/Injection
243	Haloperidol	Tablet/Capsule/Oral liquid
	24.2 Medicines used in mood disorders	
	24.2.1 Medicines used depressive disorders	
244	Imipramine Hydrochloride	Tablet/Syrup
245	Nortriptyline	Tablet
246	Flupenthixol Dihydrochloride/Decanoate	Tablet/Injection
	SL No. 119	
	24.2.2 Medicines used in bipolar disorders	
247	Carbamazepine	Tablet/Oral liquid/ Suppository
248	Lithium Carbonate/Citrate	Tablet/Oral liquid
	24.3 Medicines for anxiety disorders	
249	Diazepam	Tablet/Injection
250	Clobazam	Tablet
	24.4 Medicines used for obsessive compulsive disorders	
251	Clomipramine Hydrochloride	Tablet/Syrup/Capsule/ Injection
	24.5 Medicines for disorders due to psychoactive substance use	
Table 7.1. Contd.		

Table Continued...		
Sl. no.	Drugs/Medicines	
252	Methadone Hydrochloride	Tablet/Injection
	25. Medicines acting on the respiratory tract	
	25.1 Antiasthmatic and medicines for chronic obstructive pulmonary disease	
253	Salbutamol	Tablet/Elixir
254	Adrenaline/Epinephrine	Injection
255	Aminophylline	Tablet/Injection
	26. Solutions correcting water, electrolyte and acid-base disturbances	
	26.1 Oral	
256	Oral Rehydration Salts (ORS)	Sachet for 500 mL
257	Cholera Fluid	Intravenous Infusion
258	Sodium hydrogen carbonate	Injection
	26.2 Parenteral	
259	Dextrose in water	Intravenous Infusion, 5%, 25% and 50%
260	Supplemental Parenteral Nutrients	For adding to infusion
261	Glucose	Injectable solution
262	Glucose with sodium chloride	Injectable solution
263	Sodium chloride	Injectable solution
264	Sodium chloride 3%	IV fluid
265	Sodium chloride quarter strength (0.225%)+Dextrose 5%	IV fluid
	SL No 259	Injectable solution
	26.3 Miscellaneous	
266	Water for Injection (sterile/pyrogen free)	
267	Dialysis Fluid	
	27. Vitamins and minerals	
268	Ascorbic Acid/Vitamin C	Tablet
269	Vitamin A	Capsule 50,000-2,00,000 IU (Injection 100,000 IU for SL and above)
270	Vitamin B1	Tablet/Injection
271	Vitamin K	Tablet/Injection
272	Vitamin E	Tablet
273	Vitamin B-Complex	Tablet/Drops
274	Calcium Gluconate	Tablet/Injection
275	Iodized Oil	Injection
276	Vitamin B12	Injection
277	Nicotinamide	Tablet
278	Pyridoxine	Tablet
Table 7.1. Contd.		

Table Continued...		
Sl. no.	Drugs/Medicines	
279	Retinol	Capsule/Tablet/Oral oily solution/Water-miscible injection
280	Riboflavin	Tablet
281	Thiamine	Tablet
	SL No- 124	
	28. Ear, nose and throat conditions in children [c]	
282	Ciprofloxacin	Eye drops for SL and above
283	Gentamicin + Hydrocortisone	Ear drops
284	Xylometazoline	Nasal drops
	SL No. 53	
	29. Specific medicines for neonatal care [c]	
	30. Mucolytics, expectorants and cough suppressants	
285	Dextromethorphan hydrobromide	Syrup

Lots of improvements have been made in health sector to ensure production and supply of essential medications over the years in Bangladesh. In addition to the achievements in essential medications, Bangladesh is now improving in biotechnology and using it for betterment of life.

Biotechnology: beginning of a new era of medical sciences

Two modern technologies that are currently reshaping the world have opened a window of opportunities for development. These are: Information Technology (IT) and Biotechnology (BT). IT had a head-start earlier and has flourished to become a part of our daily life; on the other hand, biotechnology is quite new but it is quickly expanding as a promising tool for developing a nation as well as the world. Experts predict the 21st century will be the century of biotechnology, and its effect will be enormous compared to that of IT.

Modern Biotechnology uses sophisticated and complex techniques that deal with applying technology at molecular level of living cell. More precisely, it can be said that modern biotechnology deals with the genetic

Experts predict the 21st century will be the century of biotechnology, and its effect will be enormous compared to that of IT.

mechanism of living organisms. Genes are the functional unit of DNA of a cell. Gene defines the traits in an organism. Any specific trait, such as whether the hair color would be black or brown, is defined by genes of an individual. Genes express a certain trait through producing specific proteins that carry specific information called genetic codes. Using genetic engineering and recombinant DNA technology, we can add an absent gene or remove/replace harmful or defective ones and achieve the desired effect. By doing so we can add an absent trait for which a disease may occur or we can get rid of a harmful trait that may cause a disease. The technology can be employed to alter genetic characteristics of living organisms, including plants and animals. The modified living organism is also known as genetically-modified organism (GMO).

Medical biotechnology (MBT) is a branch of much wider biotechnology that deals with the use of living cells and cell materials to research and produce pharmaceuticals and diagnostic products that help treat and prevent diseases.

Among the many branches of biotechnology, red biotechnology or medical biotechnology is the area of our interest as tremendous development in this sector around the globe has enabled scientists to understand more about disease processes and curing the patients in more accurate and effective ways. Current prospect of medical biotechnology depicts its economic growth larger than the combined economic growth of all other aspects of biotechnology. Important sectors of medical biotechnology are pharmaceutical products, vaccines, newer and more accurate diagnostic techniques, such as polymerase chain reaction (PCR), monoclonal antibodies, transgenic animals, microarray nano-medicines, bioinformatics, and many others.

Bangladesh has been successfully using biotechnology in agricultural sector and has solved its food crisis issues but, unfortunately, medical biotechnology is still ill-grown in the country and, for that, we are failing to provide modern clinical service to the patients; they have to go or send samples abroad, thus draining a lot of foreign currency every year. Although many countries of the world have

achieved success in this particular area of medical science, unfortunately, Bangladesh is still lagging behind due to lack of educated and skilled manpower and infrastructure.

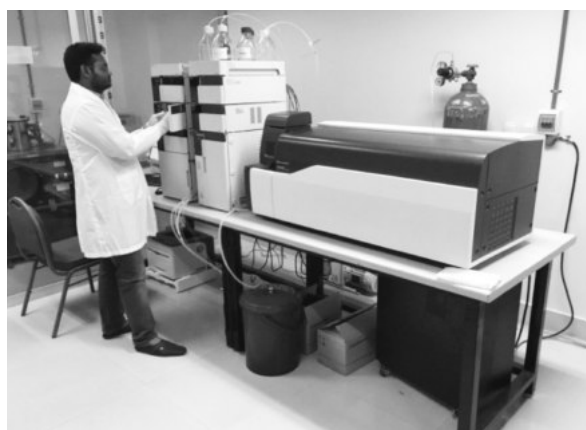
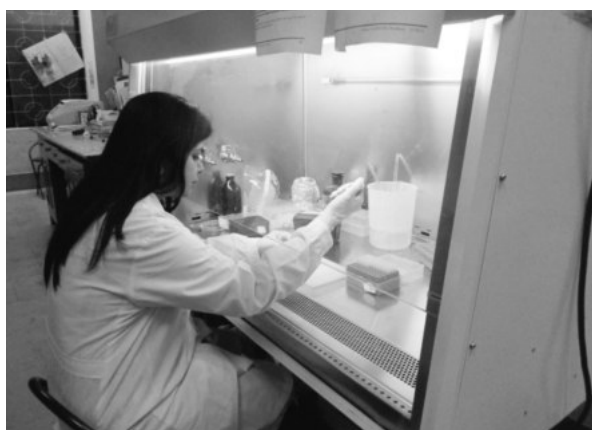
Medical biotechnology is the third component of HIS and eHealth Operational Plan.

Current scenario of medical biotechnology in Bangladesh

Compared to the advancements of our neighboring countries in medical biotechnology, the situation in Bangladesh is just in sprouting stage. A situation analysis on biotechnology funded by FAO and UNDP that ended in 2003 identified that most of the work done in this sector is related to agriculture. Tissue cultures of banana, orchid, jute, wheat, etc. are some examples of regular work. In 2013, complete genome sequence of a local variety of jute was decoded by a famous scientist Dr. Maqsoodul Alam.

Other activities that need special mention are: the use of microbes to produce citric acid, production of biogas from animal excreta, production of biofertilizers, embryo transfer technology, production of ethanol from agricultural wastes by fermentation, production of bakery yeast, preservation techniques for fruits and vegetables, artificial fish production by means of aquaculture, combined pest management, development of silk thread,

Figure 7.1. PhD students are working at Medical Biotechnology Laboratory at the Center for Medical Biotechnology at the Institute of Public Health



mass production of spirulina, biofertilizer from sugarcane, and production of alcohol.

Important activities in the field of medical biotechnology include: production of Shigella vaccine by icddr,b; the use of DNA probe for detection of disease by Bangladesh Atomic Energy Commission and Institute of Nuclear Medicine, Bangladesh; determination of genetic pattern of juvenile diabetes by BIRDEM; and the use of DNA technology in forensic medicine by DNA Laboratory of Dhaka Medical College. Moreover, icddr,b has been working on medical biotechnology for more than two decades; their main focus was to determine genetic pattern of microbes causing diarrheal diseases. Other institutions, like BIRDEM, BSMMU, have the capacity to work on medical biotechnology but they have not used that capacity as expected. If laboratory facilities of IPH and IEDCR are improved, both can be useful in initiating new activities in medical biotechnology. Biochemistry and Molecular Biology Department of the University of Dhaka has a vast experience on biotechnology-related activities but those were centered mainly towards animals and agriculture. Again, this experience can be useful in promoting medical biotechnology. Improvements of medical biotechnology-related diagnostic and research facilities in all medical colleges and related institutions are essentially needed. In these institutions, development of basic infrastructure should be emphasized.

With the recent scientific advancement, medical biotechnology is playing a vital role in patient management, starting from diagnosis and prognosis to treatment. Currently, there are private companies in Bangladesh that use medical biotechnology techniques for diagnostic tests and send samples to neighboring countries for around 1,700 tests costing more than 1.9 million US dollar per year (Source: CMBT Survey 2016). This amount is being transferred out to neighboring countries only because medical biotechnology is not developed in our country.

The Government of Bangladesh has shown interest in application of medical biotechnology for development of health and nutrition sectors and has developed the first National Guideline on Medical Biotechnology in 2006. Later, the guideline was revised and republished as gazette on 21 December 2010. Six successive meetings of the National Technical Committee on Medical Biotechnology (NTCMB) were held between 2004 and 2012 on direct recommendations of the National Executive Committee on Biotechnology (NECMB) and supervision of the National Taskforce on Biotechnology of Bangladesh (NTBB), with Honorable Prime Minister as Chair. These ended up with the establishment of the Center for Medical Biotechnology at the Institute of Public Health. National Guidelines on Medical Biotechnology 2010 includes guidance to implement provisions in the National Biotechnology Policy and describes deliverables for short-, medium- and long-term goals. To implement these goals, Medical Biotechnology Program was included in HIS and eHealth Operational Plan of the HPNSDP 2011-2016 and, now, it is being continued in the 4th sector-wide program (HPNSP 2017-2022) as a component of HIS and eHealth.

Center for Medical Biotechnology

To plan, implement, and monitor activities relating to medical biotechnology as per National Guideline through Operational Plan and other activities, the Center for Medical Biotechnology was established by the MOHFW at IPH building in 2012.

Center for Medical Biotechnology (CMBT) began an inclusive effort in cooperation with ideSHi (Institute for Developing Science and Health Initiatives) and relevant stakeholders for capacity-building in 2013. Till today, over 1,500 stakeholders, professors, physicians, journalists, entrepreneurs, scientists, and members of Medical Curriculum Committee were trained through various training sessions and workshops, including core committee

meetings, consultative workshop for updating medical curriculum, training workshop for journalists, sensitization workshop, and a 14-day hands-on training for teachers and scientists. MBT-related books were distributed among the medical university, medical colleges, and other health science institutions, and necessary equipment for biotechnology labs were distributed among different institutions.

According to the deliverables for short- and medium-term goals mentioned in National MBT Guideline, CMBT has conducted several training and workshops on MBT from 2011 to 2016 under HPNSDP 2011-2016 and started activities of new Operational Plan of HPNSP 2017-2022 from July 2017.

Activities conducted by CMBT in 2015-2016 sessions and 2016-2017 sessions were as follows:

1. Training/workshops on medical biotechnology supported by HPNSDP 2011-2016 fund.
2. An equipment set of 23 instruments relating to medical biotechnology has been supplied to 4 medical colleges: Sir Salimullah Medical College; Rajshahi Medical College; MAG Osmani Medical College, Sylhet; Chittagong Medical College; and two institutions: CMBT-ideSHi and National Institute of Preventive and Social Medicine (NIPSOM).
3. Local Medical Biotechnology Committee comprising 6 members has been formed in 12 medical colleges to build their capacities through hands-on training and motivation for running related activities properly and to provide diagnostic services to people.
4. Local Medical Biotechnology Unit has been formed with a separate laboratory, including necessary equipment in each of 12 medical colleges, which will serve both academic and clinical purposes.
5. Development Project Proforma has been completed and submitted for conversion of the Center for Medical Biotechnology to National Center for Medical Biotechnology as a center of excellence where academic and clinical services will be provided to develop our national capability in this sector and take it to the level of

Figure 7.2 Hands-on-training for teachers and scientists in CMBT-ideSHi Laboratory



- international competition.
6. Academic pursuits of PhD students doing their theses at CMBT in collaboration with ideSHi.
 7. Diagnostic services provided by CMBT in collaboration with ideSHi.
 8. Current research projects at CMBT in collaboration with ideSHi.

9. Scientific papers published in international journals from CMBT in collaboration with ideSHi.

In addition to the activities relating to medical biotechnology at the Center for Medical Biotechnology at the Institute of Public Health, other functions of the Institute, with a brief history, are appended below.

Training/workshop

Type of training/workshop	Venue	Duration (day)	Participants (No.)
Hands-on training for medical teachers and scientists	Dhaka	14	40
Training/workshop for medical teachers	Dhaka	2	60

Academic research

Name	Designation	Title of thesis
Dr. Nusrat Sultana	Assistant Professor, Department of Virology, Dhaka Medical College	Mechanistic basis of low blood pressure and association of red cell distribution width with beta-globin gene mutation patterns in Bangladeshi patients with E/beta-thalassemia major
Suprovath Kumar Sarker	PhD Student, ideSHi	Profiling of cut off values of amino acids and acylcarnitines for universal screening of inborn errors of metabolism
Mst. Noorjahan Begum	PhD Student, ideSHi	Hypothyroidism in pregnant women and children: genetic spectrum analysis of hypothyroidism in hospital-care settings in Bangladesh.
Dr. Rosy Sultana	PhD Student, ideSHi	Influence of hepatitis E viral load and genotypes on pregnant urban dwellers of Bangladesh

Services

Name of service	No. of services provided
Glucose-6-phosphate dehydrogenase deficiency diagnosis	121
Basic metabolic screening (inborn errors of metabolism diagnosis)	250

Other research works

Sl.	Title of research
1.	Services agreement for training and technical support to BITID
2.	Profiling of cut off values of amino acids, acylcarnitines and urine organic acids for universal screening of inborn errors of metabolism
3.	Collaborative management platform for detection and analysis of re-emerging and foodborne disease outbreaks in Europe (COMPARE)
4.	Innovative approaches for development of diagnostic methods for detecting IEM and genetic disorders, using high throughput metabolomics profiling as well as monoclonal antibody
5.	Strategic Typhoid Alliance across Africa and Asia (STRAATAA)
6.	Foodborne illness surveillance (FBIS)

Publications

Title of article	Name of journal
Examination of Huntington's disease with atypical clinical features in a Bangladeshi family tree-clinical case report	Wiley Publishing Group
Molecular Analysis of glucose-6-phosphate dehydrogenase gene mutations in Bangladeshi individuals	PLOS ONE
Bacterial and viral pathogen spectra of acute respiratory infections in under-5 children in hospital settings in Dhaka city	PLOS ONE

Institute of Public Health (IPH)

Institute of Public Health (IPH) is one of the oldest and largest institutions in the country. It is mandated to support preventive, promotive and curative healthcare services through laboratories, production of biochemicals, quality control, training, education, research, and publications in the field of public health. The Institute started its functions as Combined Public Health Laboratory in 1952, comprising Public Health and Water Laboratory, Microbiology Laboratory, Central Drug Laboratory, Nutrition Unit, and Vaccine Production Unit. For coping up with the national demand and proliferating spectra of activities, it was renamed the Institute of Public Health in 1953.

The Institute played a historic role in producing and supplying small pox vaccines to the National Immunization Program, which helped in eradication of the disease from the country. It also used to produce cholera, typhoid and anti-rabies vaccines, tetanus and diphtheria toxoid, and anti-snake venom. In 1961, Prof. KA Monsur, former Director of the Institute, invented the Taurocholate-tellurite-gelatin agar (TTGA)-also called Monsur's Medium, which is used for isolation and presumptive identification of *Vibrio* spp. recommended by the World Health Organization. The Institute is situated in Mohakhali of Dhaka city and housed on a land area of 47.80 acres. The broad spectra of activities of the Institute are rendered by a total manpower of 926 forming strong multidisciplinary teams having wide range of technical, academic and research expertise with postgraduate degrees, including PhD, MPhil, MPH, MD, MS, MSc and others.

The IPH is the National Focal Point or Focal Institute for the following:

- Production of biochemicals, including vaccines, intravenous fluid, ORS, diagnostic reagents and other chemicals, blood bags, etc.
- Quality control of raw materials, biological products, and others
- Food safety and quality control
- Preparedness and Response to Public Health Emergencies, including food safety emergencies
- Support for prevention and control of communicable and non-communicable diseases, including emerging and re-emerging ones
- Laboratory support for detection and surveillance of polio and non-polio cases, measles, rubella, and Japanese encephalitis

The IPH is on track for the digital health development goal. Under the umbrella of information desk, all departments are connected to the digital network, interlinking with one another as well as with the DGHS. The IPH has its own web site at: www.iph.gov.bd

The day-to-day activities of the IPH are being run by a number of committed professionals, researchers, scientists from different disciplines, with the support of well-trained and committed staff, to fulfill its vision to establish the Institute as a regional and international reference center to support the public health services.

Major activities during the reporting period are outlined in the latter sections.

Production of intravenous fluids

The IPH has been operating the only state-owned IV Fluid Plant that started its journey in 1973 and expanded in 1981-1982. The Unit produces some 1.5 million bags of intravenous fluids per year; these are distributed to the public hospitals across the country for the patients free of charge, which covers some 50% of the total requirement. Health facilities of the private sector are also receiving the fluids, particularly 3% sodium chloride solution. Table 7.2 shows a summary of the production of intravenous fluids over the last few years.

Production of blood bags and accessories

The Unit produces CPD blood-collection bags,

infusion and transfusion sets to meet demand in the public sector. Table 7.3 shows the quantity of blood-bags and related accessories produced by the IPH during 2012-2016.

Production of diagnostic reagents

This is the only diagnostic reagent production unit in the public sector. The Unit produces 23 different types of high-quality diagnostic reagents, kits and chemicals, and supplies to clinical laboratories in public hospitals at low price, which saves hard-earned foreign currencies of the country.

The quantities of different types of diagnostic reagents produced by the IPH from 2012 to 2016 are shown in Table 7.4

Table 7.2. Production of intravenous fluids by IPH over the last 5 years (2012 to 2016)

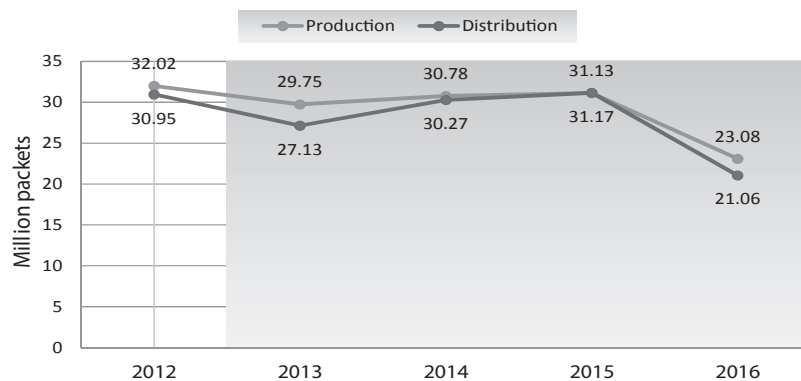
Item	Pack-size (mL)	Year				
		2012	2013	2014	2015	2016
Glucose Saline	1,000	81,590	111,008	88,015	94,035	89,414
	500	127,255	130,733	121,345	170,067	118,260
Glucose Aqua	1,000	82,810	88,499	80,660	79,697	64,320
	500	112,785	118,525	114,705	126,960	82,290
Normal Saline	1,000	61,471	93,860	79,030	100,741	93,025
	500	12,179	114,010	120,630	170,620	131,285
Cholera Saline	1,000	81,227	87,585	74,105	105,695	154,959
	500	124,120	118,030	112,950	191,225	222,361
PD Fluid	1,000	25,530	40,125	36,250	44,650	39,865
3% Normal Saline	500	10,479	10,149	16,131	15,423	17,047
Baby Saline	1,000	-	-	-	52,450	-
	500	36,355	33,864	42,065	-	39,890
Hemodialysis Fluid	1,000	10,700	5,868	1,670	4,080	2,120
Hartmann's Solution	1,000	-	-	-	3,500	69,030
	500	86,465	24,380	89,450	185,450	100,361

Table 7.3. Production of blood-bags and accessories by IPH over the last 5 years (2012 to 2016)

Item	Pack-type	Year				
		2012	2013	2014	2015	2016
CPD blood bag	Single	105,523	66,117	114,783	110,192	103,809
CPD blood bag	Double	-	-	600	-	-
Baby bag	150 mL	-	300	2,390	-	1,215
Transfusion set	-	58,000	127,830	38,000	21,223	37,440
Infusion set	-	75,600	32,200	110,000	52,095	42,240

Table 7.4. Production of diagnostic reagents by the IPH over the last 5 years (2012 to 2016)

Item	Year				
	2012	2013	2014	2015	2016
Benedict's Solution (L)	400	140	240	575	570
ESR Fluid (L)	160	180	99	280	300
20% Sulfuric Acid Solution (L)	-	-	-	50	60
N/10 Hydrochloric Acid Solution (L)	70	40	40	70	160
Acetone Alcohol (L)	60	2	-	40	20
5% Acetic Acid Solution (L)	60	30	50	175	190
WBC Fluid (L)	40	-	50	80	90
RBC Fluid (L)	30	-	-	47	70
30% Sulfosalicylic Acid (L)	10	-	-	30	-
20% Sodium Hydroxide Solution (L)	-	-	-	5	20
Semen Analysis Fluid (L)	-	-	-	40	20
Normal Saline (L)	20	40	10	120	70
Methylene Blue (L)	-	-	-	25	10
Crystal Violet (L)	-	-	-	20	05
Basic Fuchsin (L)	10	-	-	-	-
Carbol Fuchsin (L)	-	-	-	5	-
Gram Iodine (L)	5	-	5	25	-
Lugol's Iodine (L)	10	-	-	31	32
Leishman Stain (L)	72	26	17	70	59
Giemsa Stain (L)	40	34	14	50	40
Glucose Kits	99	-	-	-	-
Bilirubin Kits	149	-	100	198	200
Creatinine Kits	298	-	191	328	200
Uric Acid Kits	-	-	-	-	0
EDTA vials	-	-	-	500	1500
Urea Kits	50	-	-	-	-

Figure 7.3. Production and distribution of oral rehydration salts (ORS) by the IPH over the last 5 years (2012-2016)

Recently, the IPH commissioned a modern Continuous Ambulatory Peritoneal Dialysis (CAPD) Fluid Plant, with a capacity of the production of some 50,000 bags in a year. Currently, the IPH is conducting clinical trials of the products in close collaboration with general and specialized hospitals and institutes. It is aimed to supply the CAPD fluid bag to the patients free of charge or at a subsidized rate. Furthermore, it will save foreign currency being spent for importing CAPD Fluid bags. It will also save patients' time and hospital occupancy rate as it is a home-based self-service dialysis method.

Production of oral rehydration salts (ORS)

The IPH is playing a key role in the prevention and control of diarrheal diseases in the country. As part of the effort, the Institute is producing ORS through its five units located in Dhaka, Comilla, Jessore, Barisal and Rangpur; these are distributed to the government health facilities free of charge for the patients. It may be mentioned that the unit for the production of oral rehydration salts was established in 1980-1981. The quantities of oral rehydration salts (ORS) produced and distributed by the IPH during 2012-2016 are shown in Figure 7.3.

FINANCING HEALTHCARE

In FY 2016-2017, the total expenditure of Operational Plans was BDT 79,613.41 lakh for first six months, the utilization rate being 68.28% of the allocated amount

Till June 2016, the Health, Population and Nutrition Sector Development Program (HPNSDP) 2011-2016 provided development budget of the Ministry of Health and Family Welfare (MOHFW) and its agencies. The next sector-wide program was approved in ECNEC on 21 March 2017. The total budget for the 4th Health, Population, and Nutrition Sector Program (HPNSP) 2017-2022 is BDT 11,548,636.03 lakh, of which development budget is BDT 4,348,636.03 lakh and non-development budget is BDT 7,200,000 lakh. In fiscal 2016-2017, the total allocation under revised annual development program (RADP) for the Directorate General of Health Services (DGHS) was BDT 239,202.12 lakh (116,595.65 released for the first six months). This allocation is distributed among 17 Operational Plans and development projects of the DGHS as per respective workplans.

The allocation, release, expenditure, and utilization in FY 2016-2017 (revised ADP) of HPNSDP 2011-2016 and HPNSP 2017-2022 fund against different Operational Plans of the DGHS are shown in Table 8.1.

The reported allocation, release and expenditure (in lakh taka) against Operational Plans of the DGHS in fiscal 2016-2017 are shown in Figure 8.1 [Source: ADP fund monitoring system, MOHFW]. In FY 2016-2017, the total expenditure of Operational Plans was BDT 79,613.41 lakh for first six months, the utilization rate being 68.28% of the allocated amount.

Of the total allocation, the GOB fund was BDT 57,553.03 lakh. The utilization of the GOB fund was BDT 41,905.36 lakh, and that of PA fund was BDT 37,708.05 lakh. The total fund utilization rate in FY 2016-2017 was lower than in FY 2015-2016, which was 90.96% as shown in Figure 8.2.

Figure 8.3 shows the fund utilization rate of different Operational Plans of the DGHS in fiscal 2016-2017.

The allocation and expenses of 21 investment projects of the MOHFW in fiscal 2016-2017 are shown in Figure 8.4. Total allocation was BDT 122,858.16 lakh,

Table 8.1. Allocation, release, expenditure, and utilization in FY 2016-2017 (July-December, 2016) against different Operational Plans of the DGHS

Sl No	ProjectName	Allocation			Release			Expenditure			% Utilization by	
		GOB	PA	Total	GOB	Total	Total	GOB	PA	Total	Allocation	Release
1	Maternal, Neonatal, Child and Adolescent Health (MNCAH)	6161.99	38823.43	44985.42	4621.49	25702.15	30323.63	3686.39	25487.13	29173.52	64.85	96.21
2	Essential Services Delivery (ESD)	900.00	99.00	999.00	900.00	74.25	974.25	763.44	70.86	834.31	83.51	85.64
3	Community Based Health Care (CBHC)	29800.00	10504.42	40304.42	26974.04	5463.93	32437.97	21616.49	4395.43	26011.92	64.54	80.19
4	TB and Leprosy Control (TB-LC)	218.00	1318.62	1536.62	218.00	1312.20	1530.20	155.17	1312.20	1467.37	95.49	95.89
5	National AIDS/STD Program (NASP)	100.00	984.50	1084.50	304.50	972.88	1277.38	54.57	850.99	905.56	83.50	70.89
6	Communicable Diseases Control (CDC)	1871.00	262.33	2133.33	1871.00	3013.35	4884.35	1869.98	207.57	2077.55	97.39	42.53
7	Non-Communicable Diseases (NCD)	286.00	0.00	286.00	286.00	0.00	286.00	281.98	0.00	281.98	98.59	98.59
8	National Eye Care (NEC)	40.00	36.14	76.14	40.00	30.00	70.00	38.55	27.21	65.76	86.37	93.94
9	Hospital Services Management & Safe Blood Transfusion (HSM)	4812.00	2033.04	6845.04	4811.95	1976.77	6788.72	3607.46	1212.65	4820.11	70.42	71.00
10	Alternate Medical Care (AMC)	1846.00	0.00	1846.00	1846.00	0.00	1846.00	1176.67	0.00	1176.67	63.74	63.74
11	Pre-Service Education (PSE)	1058.69	554.30	1612.99	1058.68	554.30	1612.98	1010.00	554.00	1564.00	96.96	96.96
12	Planning, Monitoring and Research (Health) (PMR)	250.00	333.17	583.17	0.93	108.17	109.10	0.75	81.13	81.88	14.04	75.05
13	Health Information System & e-Health (HIS & e-health)	1000.00	0.00	1000.00	1000.00	0.00	1000.00	1000.00	0.00	1000.00	100.00	100.00
14	Health Education and Promotion (HEP)	126.35	187.03	313.38	126.35	230.54	356.89	34.93	142.74	177.67	56.69	49.78
15	Procurement, Logistics & Supplies Management (PLSM)	8283.00	30.00	8313.00	6500.50	30.00	6530.50	6367.83	24.74	6392.57	76.90	97.89
16	National Nutrition Services (NNS)	800.00	3876.64	4676.64	1412.54	3364.95	4777.49	241.15	3341.40	3582.55	76.61	74.99
	Total	57553.03	59042.62	116595.65	51971.97	42833.49	94805.46	41905.36	37708.05	79613.41	68.28	83.98

Figure 8.1. Allocation and expenditure (in lakh taka) against Operational Plans of the DGHS in fiscal 2016-2017

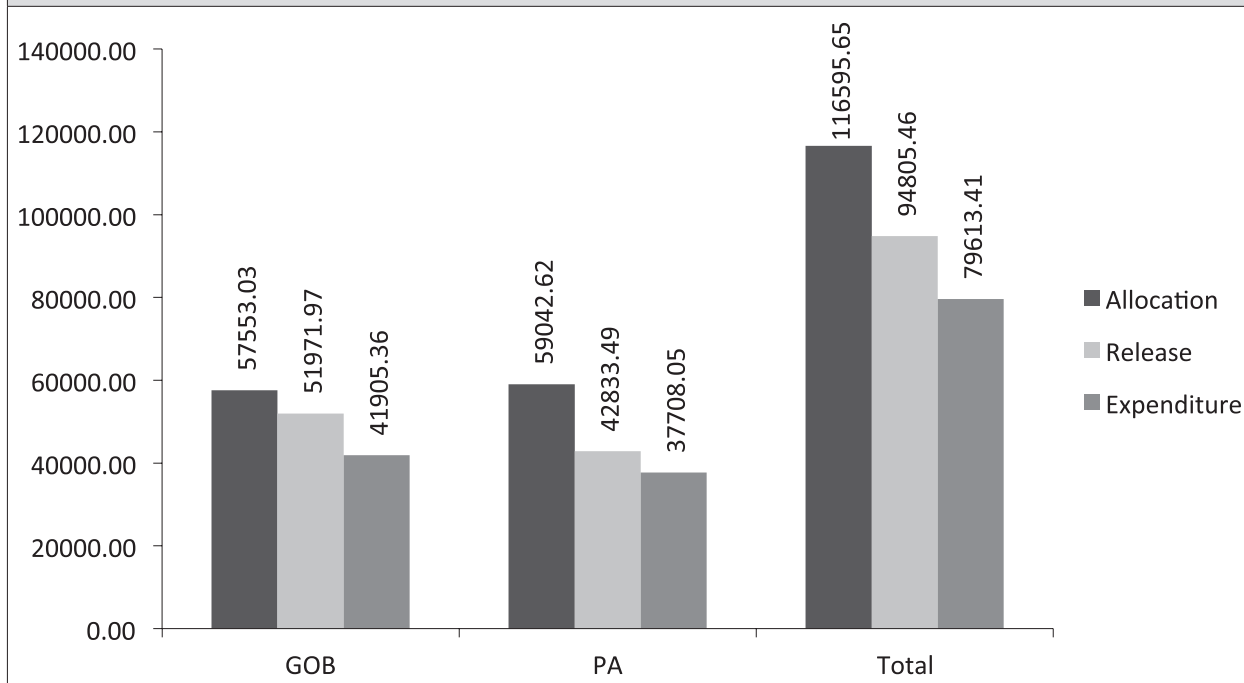
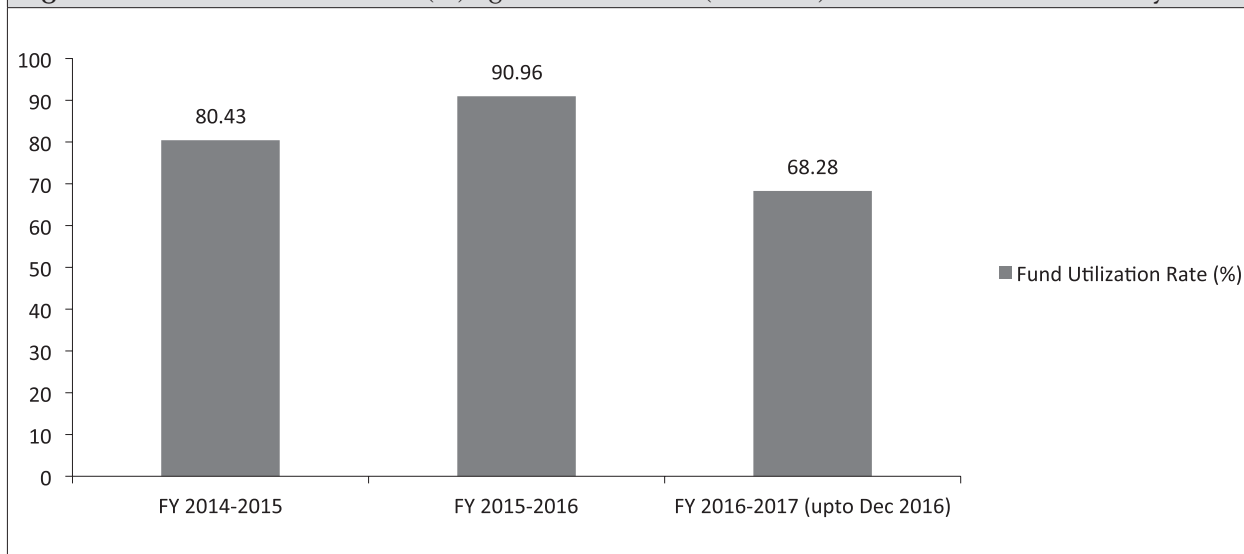


Figure 8.2. Fund utilization rate (%) against allocation (GOB+PA) for OPs in different fiscal year



and total expense was BDT 76,632.68 lakh. The utilization rate was 62.37%. The GOB allocation was BDT 118,201.14 lakh, and expense was BDT 74,890.61 lakh. The utilization rate was 63.36%. The Project Aid (DPA) allocation was BDT 4,657.02 lakh, and the expense was BDT 1,742.07 lakh. The utilization rate was 37.41%.

Table 8.2 shows the allocation, release, expenditure and utilization rate in FY 2016-2017 for different investment projects of the MOHFW.

Bangladesh National Health Accounts

Total Health Expenditure (THE) under Bangladesh National Health Accounts

(BNHA) is defined as Current Health Expenditure (CHE) plus expenditure made on gross capital formation and education accounts. CHE accounts for 2.98% of Bangladesh’s Gross Domestic Product (GDP) in 2015. THE estimated for 2015 is Taka 452 billion while consumption of THE on

healthcare according to the system of Health Accounts (SHA2011) guidelines known as CHE is Taka 415 billion. Per-capita THE for 2015 is estimated to be Taka 2,882 (US\$37) and CHE to be Taka 2,647 (US\$34). During the last one decade, THE remained steady around 3% of GDP (Table 8.3).

Figure 8.3. Fund utilization rate (%) of the DGHS Operational Plans against allocated and released funds in FY 2016-2017

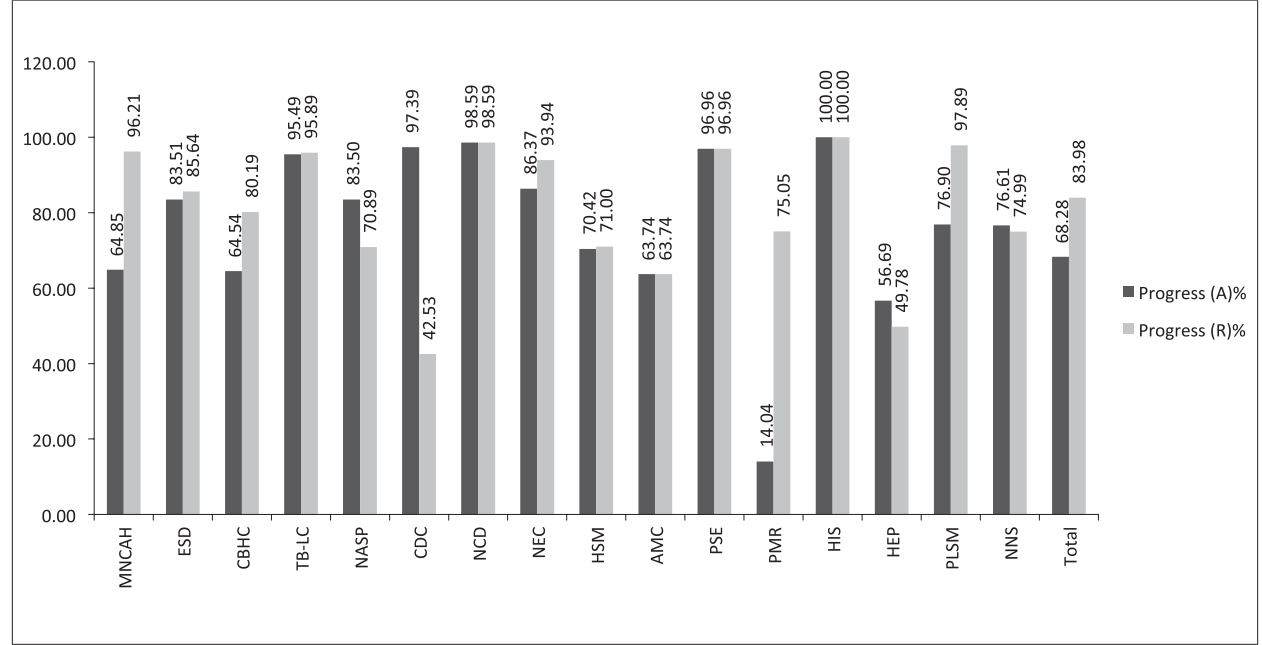


Figure 8.4. Allocation and expenses (in lakh taka) of 21 investment projects of the MOHFW in fiscal 2016-2017

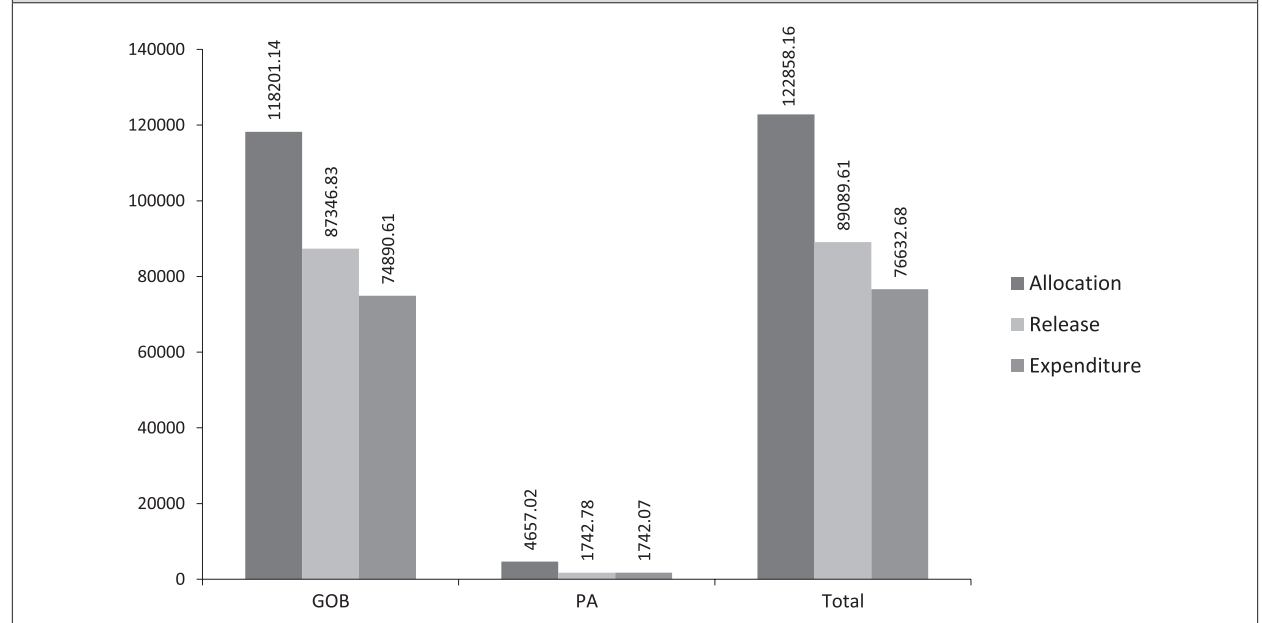


Table 8.2. Allocation, release, expenditure, and utilization in FY 2016-2017 for different investment projects

Investment Project	Allocation (BDT in lakh)	Release (BDT in lakh)	Expense (BDT in lakh)	Utilization rate of allocation (%)	Utilization rate of released funds (%)
Sheikh Hasina National Institute of Burn and Plastic Surgery, Dhaka	10,280.00	10,280.00	10,000.49	97.28	97.28
Est. of 250-bedded National Ophthalmology Inst. and Hospital (1st Phase: 250 beds)	1,827.00	16.00	8.17	0.45	51.04
Upgradation of National Institute of Cancer Research and Hospital from 50 beds to 300 beds	1,816.00	1,626.76	1,538.15	84.70	94.55
Establishment of National Institute of Laboratory Medicine and Referral Centre	1,669.00	1,669.00	1,345.41	80.61	80.61
Establishment of Sheikh Sayera Khatun Medical College and Hospital and Nursing Institute, Gopalganj	8,000.00	8,000.00	7,981.06	99.76	99.76
Establishment of Satkhira Medical College & Hospital	5,200.00	5,200.00	5,199.00	99.98	99.98
Establishment of Faridpur Medical College & 500-bedded Hospital	18,481.00	18,181.13	16,297.41	88.18	89.64
National Institute of Digestive Diseases Research & Hospital	3,282.00	3,282.00	2,414.39	73.56	73.56
Establishment of Kushtia Medical College and Hospital Project	2,050.00	2,000.00	1,999.88	97.56	99.99
Establishment of Shaheed Sayed Nazrul Islam Medical College, Kishoreganj	19,314.00	8,048.22	8,048.22	41.67	100.00
Extension of Shaheed Sheikh Abu Naser Specialized Hospital, Khulna	2,000.00	385.00	385.00	19.25	100.00
Establishment of Trauma Center at Gopalganj	250.00	50.00	0.00	0.00	0.00
Extension of National Institute of Orthopedic Hospital and Rehabilitation (NITOR) Center	10,000.00	10,000.00	8,799.97	88.00	88.00
Establishment of Jamalpur Medical College & Hospital, Jamalpur Nursing College	0.00	0.00	0.00	0.00	0.00
Establishment of Patuakhali Medical College & Hospital	6,800.00	82.48	82.48	1.21	100.00

Table 8.2. Contd.

Table continued...					
Investment project	Allocation (BDT in lakh)	Release (BDT in lakh)	Expense (BDT in lakh)	Utiliza- tion rate of allo- cation (%)	Utiliza- tion rate of released funds (%)
Establishment of Sheikh Lutfar Rahman Dental College	3,000.00	0.00	0.00	0.00	0.00
Child & Mother Health and Health System Development	0.00	0.00	0.00	0.00	0.00
Establishment of Medical College and 250-bedded Hospital, Manikganj	15,500.04	7,750.00	5,872.18	37.88	75.77
Shaheed M. Monsur Ali Medical College and 500-bedded Hospital at Sirajganj	0.00	0.00	0.00	0.00	0.00
Establishment of Tangail Medical College & Extension of 250-bedded General Hospital into 500-bedded Medical College Hospital, Tangail	12,037.00	12,037.00	6,179.55	51.34	51.34
Strengthening Public Health Actions for Emerging Infectious Events in Bangladesh	1,352.12	482.02	481.31	35.60	99.85
Total	122,858.16	89,089.61	76,632.68	62.37	86.02

Table 8.3 THE, GDP, and annual growth rates, 1997-2015

Year	Total health expenditure		GDP		Per capita				
	Amount (Taka in million)	Nominal Growth rate (%)	Amount (Taka in million)	Nomi- nal Growth rate (%)	GDP	THE			Ratio of THE to GDP (%)
						Taka	US \$	PPP \$	
1997	46,755		2,060,032		16,835	382	\$9	\$26	2.3
1998	50,904	9	2,269,299	10	18,183	408	\$9	\$27	2.2
1999	56,985	12	2,465,089	9	19,377	448	\$9	\$29	2.3
2000	63,608	11	2,685,033	9	20,974	492	\$10	\$31	2.3
2001	72,030	14	2,913,371	9	22,351	533	\$10	\$35	2.5
2002	81,559	13	3,142,804	8	23,695	615	\$11	\$38	2.6
2003	87,882	8	3,483,201	11	25,828	652	\$11	\$39	2.5
2004	100,456	14	3,832,939	10	27,988	734	\$12	\$43	2.6
2005	115,399	15	4,270,741	11	30,751	831	\$14	\$48	2.7
2006	137,114	19	4,823,370	13	34,299	975	\$15	\$55	2.8
2007	156,977	14	5,497,997	14	38,661	1,104	\$16	\$60	2.9
2008	181,775	16	6,286,822	14	43,746	1,265	\$18	\$65	2.9
2009	207,671	14	7,050,718	12	48,543	1,430	\$21	\$69	2.9
2010	246,040	18	7,975,387	13	54,296	1,675	\$24	\$76	3.1

Table 8.3. Contd.

Table continued...									
Year	Total health expenditure		GDP		Per capita				
	Amount (Taka in million)	Nominal Growth rate (%)	Amount (Taka in million)	Nominal Growth rate (%)	GDP	THE			Ratio of THE to GDP (%)
					Taka	US \$	PPP \$		
2013	353,960	9	11,989,232	14	78,515	2,318	\$29	\$89	3.0
2014	398,420	13	13,436,744	12	86,857	2,575	\$33	\$96	3.0
2015	451,889	13	15,158,022	13	96,671	2,882	\$37	\$102	3.0
Average annual growth rate									
1998-2002		12		9					2.4
2003-2007		14		12					2.7
2008-2012		16		14					3.0
2012-2015		12		13					3.0
1998-2015		13		12					2.8
The Purchasing Power Parity (PPP) adjusted per-capita expenditure on health in nominal terms was Taka 7,936 (\$102) in 2015; in real terms it was Taka 2,647 (\$37) for that year									
Source: Summary Bangladesh National Health Accounts 1997-2015, BHNA Cell, Health Economics Unit, MOHFW									

CHAPTER 9

LEADERSHIP AND GOVERNANCE

Monitoring and accountability for improving outcome

Leadership and governance ensures that strategic policy frameworks exist and are combined with effective oversight, coalition, regulation, attention to systemic design, and accountability.

‘Governance and Leadership’ together is one of the important building blocks of health system defined by World Health Organization. This is considered the basement, if the total health system is considered a house.

Leadership and governance ensures that strategic policy frameworks exist and are combined with effective oversight, coalition, regulation, attention to systemic design, and accountability. The need for greater accountability arises both from increased funding and a growing demand to demonstrate results. Accountability is, therefore, an intrinsic aspect of governance that concerns the management of relationships between various stakeholders in health, including individuals, households, communities, firms, governments, non-governmental organizations, private firms, and other entities that have the responsibility to finance, monitor, deliver and use health services.

In particular, accountability involves the following :

- Delegation or an understanding (either implicit or explicit) of how services are delivered
- Financing to ensure that adequate resources are available to deliver essential services
- Performance around the actual delivery of services
- Receipt of relevant information to evaluate or monitor performance
- Enforcement, such as imposition of sanctions or the provision of rewards for performance

(Source: Monitoring the Building Blocks of Health System: A Handbook of Indicators and Their Measurement Strategies, World Health Organization)

Bangladesh began its journey as an independent nation in 1971, and the first

Figure 9.1. Building blocks of health system, representing a house



(Source: Lancet 2009, The National Academies Press, www.nap.edu/read/18256/chapter/20#509)

Constitution was established in 1972. Since the first Constitution, health has historically been a State issue. Under the current Constitution, medical care is included as one of the basic necessities of the citizenry, and it is the fundamental responsibility of the State to ensure health services (Table 9.1).

The country's first Five-year Plan was chalked out for a period from 1973 to 1978, which was started by the very first President of the country Sheikh Mujibur Rahman. In that plan, health was a very important sector where the allocated budget was BDT 200 crore, and the basic strategy for health was to shift emphasis from curative to preventive healthcare to bring a balance between the two and develop a delivery system that will provide integrated and comprehensive healthcare to the rural population. That strategy largely helped Bangladesh to strengthen its preventive and primary-care activities and build a very strong healthcare network at rural level. The country has progressed a lot in preventive care, including maternal and child healthcare and immunization. Bangladesh received the best

prize from GAVI Alliance (Global Alliance for Vaccines and Immunization) twice in 2009 and 2012. Sheikh Hasina, Hon'ble Prime Minister of Bangladesh has also received UN award for achievement of the Millennium Development Goals, particularly for reducing child mortality. She also received the South-South Award on Digital Health for Digital Development Award in 2011.

Vision 2021 of the Government of Bangladesh defines several economic and social outcomes for Bangladesh to attain the status of a middle-income country by 2021. The Vision would be achieved through implementation of the Perspective Plan for 2010-2021, and successive Five-year Plans covering 2011-2020. Bangladesh is committed to attaining universal health coverage (UHC) by 2032 by ensuring access to quality services for all citizens of the country. The targets of the 7th Five-year Plan (2016-2020) and the 4th health sector program (2017-2022) are fully aligned with global commitments, like the SDGs and the Global Partnership on Family Planning 2020 (FP2020).

Table 9.1. Health-related statements written in the Constitution of the People's Republic of Bangladesh

Provision of basic necessities	<p>15. It shall be a fundamental responsibility of the State to attain, through planned economic growth, a constant increase of productive forces and a steady improvement in the material and cultural standard of living of the people, with a view to securing to its citizens–</p> <p>(a) the provision of the basic necessities of life, including food, clothing, shelter, education and medical care;</p> <p>(b) the right to work, that is the right to guaranteed employment at a reasonable wage having regard to the quantity and quality of work;</p> <p>(c) the right to reasonable rest, recreation and leisure; and</p> <p>(d) the right to social security, that is to say, to public assistance in cases of undeserved want arising from unemployment, illness or disablement, or suffered by widows or orphans or in old age, or in other such cases.</p>
Rural development and agricultural revolution	<p>16. The State shall adopt effective measures to bring about a radical transformation in the rural areas through the promotion of an agricultural revolution, the provision of rural electrification, the development of cottage and other industries, and the improvement of education, communications and public health, in those areas, so as progressively to remove the disparity in the standards of living between the urban and the rural areas.</p>
Public health and morality	<p>18. (1) The State shall regard the raising of the level of nutrition and the improvement of public health as among its primary duties, and in particular shall adopt effective measures to prevent the consumption, except for medical purposes or for such other purposes as may be prescribed by law, of alcoholic and other intoxicating drinks and of drugs which are injurious to health.</p> <p>(2) The State shall adopt effective measures to prevent prostitution and gambling.</p>

Figure 9.2. Hon'ble Prime Minister Sheikh Hasina receiving MDG award from United Nations

The goals of Vision 2021 and the Perspective Plan have been reflected in subsequent policy initiatives. National Health Policy 2011 views health as a recognized human right. Bangladesh Population Policy 2012 aims at building a healthy, happy, and prosperous Bangladesh by planned development and control of population. Bangladesh National Nutrition Policy 2014 plans Bangladeshi population to achieve healthy and productive life through desired nutrition.

Milestones for Vision 2021 in HNP Sector

- 85% of the population has standard nutritional food
- Poor people ensure a minimum of 2,100 kilocalories of food
- All kinds of contagious diseases are eliminated
- Longevity increases to 70 years
- Infant mortality comes down to 15 from 54 per thousand at present
- Use of birth control methods increases to 80%

Current Health Sector Policies/Strategies

- National Health Policy 2011
- National Population Policy 2012
- National Nutrition Policy 2015
- Health, Population and Nutrition Sector Program (HPNSP) 2017-2022
- Health, Nutrition and Population Strategic Investment Plan (HNPSIP) July 2016–June 2021
- Healthcare Financing Strategy 2012-2032: Expanding Social Protection for Health Towards Universal Coverage
- Bangladesh Health Workforce Strategy 2016–2021

The first SWAp–Health and Population Sector Program (HPSP) 1998-2003–was initiated in 1998 replacing 128 discrete projects in the MOHFW. The second SWAp–Health, Nutrition and Population Sector Program (HNPSP)–was implemented during 2003–

2011. The third SWAp–Health, Population and Nutrition Sector Development Program (HPNSDP) (2011–16)–was extended to end in December 2016. The fourth SWAp–the 4th HPNSP–was planned to begin in January 2017 through June 2022.

The 4th HPNSP is guided by Bangladesh’s Vision 2021 (transforming the country from a developing country into a middle-income country), which acknowledges that improved health is a necessary and critical condition for the achievement of this vision. The 4th HPNSP’s articulation and design have been linked to the 7th Five-year Plan (FYP) of the Government. Other guiding principles are drawn from the national policies on health, nutrition and population, various HNP sector-related strategies approved by the Government, and the experience of implementing three successive sector programs in Bangladesh. The 4th HPNSP starts at a time of transition from the Millennium Development Goals (MDGs) to the newly-agreed Sustainable Development Goals (SDGs) to be achieved by 2030. The MDGs had a major focus on specific goals relating to health sector while the SDGs encompass much broader agenda for change.

The number (32) of Operational Plans (Ops) under HPNSDP were reviewed, rationalized, and renamed for implementation during the 4th HPNSP. There are now 29 OPs that are distributed across the DGHS (14), DGFP (7), MOHFW (5), and other agencies (one each for DGDA, DGNM, and NIPORT), each of which reflects priority areas of the 4th HPNSP. Each OP is led by a Line Director (LD) and has a functional administrative structure, including staff, budget, and infrastructure. The OPs are prepared for five-and-a half years and will be revised based on the progress of work, the ADP allocation, and the recommendations of the Mid-Term Review (MTR) to be conducted during the second half of 2019. The Steering Committee for the 4th HPNSP, comprising inter-ministerial representatives of the senior level and chaired by the Hon’ble Minister for Health, is responsible for approving all the OPs.

Public Service Delivery Capacity and Governance

Health-sector management/governance

Governance is an important element of the health system's performance linked with improved quality of care and efficient utilization of scarce human, infrastructural and financial resources. In the absence of adequate decentralization, governing the huge and complex network of health personnel and facilities is a great challenge. Strengthening of the health system by filling up the vacant posts, supervision and monitoring, record-keeping and reporting, accountability and changing attitudes of the service providers are important in the smooth functioning of the system. The HPNSDP (2011-2016) looked at stewardship and governance issues more closely. Inadequate capacity of the regulatory framework has a bearing upon governance structure of the MOHFW. The HPNSDP stated that weak legal framework and institutional capacity of regulatory functionaries have weakened the stewardship role of the public sector. A study on the stewardship role of the MOHFW identified in the approval of private medical colleges and provision of services by the private sector revealed that Professional regulatory bodies have inadequate capacities to enforce standards or quality among the professionals they represent. Among the priority interventions outlined in the HPNSDP, the following were included:

- Assuming strategic stewardship and governance role by the MOHFW for policy management and setting up a coordinating system for synergistic, effective and efficient contribution of public, non-public facilities, including the private sector and health-related NGOs
- Strengthening the MOHFW's regulatory and supervisory roles through revising the mandates of the regulatory bodies and capacity-building for enforcement of standards
- Facilitating and strengthening the MOHFW's engagement with the NGO

and private sector, based on comparative advantages

- Reviewing and updating the existing health-related legal frameworks to include the healthcare consumers' rights in the Consumer Rights Protection Act (2009)
- Constituting a taskforce to assess the need for the following:
 - (i) New law/ordinance
 - (ii) Revising any existing ones
 - (iii) Determining the measures to improve the existing legal framework

The 4th HPNSP, along with the 7th Five-year Plan, emphasize the regulatory supervisory role of the MOHFW, and delegating the stewardship is underway to address the deficiencies. Another area needing attention is the institutional arrangements and coordination relating to the nutrition and population subsectors, which need to be more effective and synergistic. Under the nutrition subsector, weak coordination among the sectors, combined with heavily-centralized coordination within the sectors, continues to pose a significant challenge. Thus, Bangladesh National Nutrition Council (BNNC) was revitalized in 2015, and the Second National Plan of Action for Nutrition (NPAN2) for 2016-2025 has been formulated. The Operational Plan (2017-2022) of the National Nutrition Services (NNS) has also been approved; it is being mainstreamed (since 2011-2016 under HPNSDP) within the comprehensive 4th HPNSP of the Ministry of Health and Family Welfare.

Human resources

Human Resources for Health (HRH) are considered the key component of the entire health system. The success and failure of the health system largely depend on how the human resources are managed. Nevertheless, management of human resources is complex and requires strategic directions for successful formulation and implementation of plans and programs. In spite of Bangladesh's remarkable progress in certain key health indicators, concerns are there regarding

several HRH issues, such as acute shortage, inequity in distribution, skill-mix imbalance, lack of performance management systems, poor working environment, weak knowledge-base, problem of deployment, retention and governance, etc. HR-related inadequacies continue to be an obstacle to providing quality service delivery. In the absence of Human Resources for Health (HRH) strategy and plan, decisions are taken on ad-hoc basis. Absence of Human Resource Information System (HRIS) is another serious short-coming which adversely affects management decisions, like recruitment, deployment, training, etc.

Shortage

The National Health Policy 2011 identified Bangladesh as one of the 57 countries in the world suffering from a severe shortage in health workforce. Qualified health personnel, like physicians, dentists, nurses, and technologists, are insufficient in number, particularly in hard-to-reach rural areas. According to a WHO estimate, Bangladesh has shortage of more than 60,000 doctors, 280,000 nurses, and 483,000 technologists. Bangladesh also does not fare well compared to neighboring countries in terms of the distribution of health workforce across populations (Table 9.2)

Considering shortage of HR as the number one priority, the Government has taken steps to fill up the vacant positions and create new ones. During HPNSDP, augmentation of HR in health

service delivery has been the focused activity of the MOHFW; a total of 42,702 personnel in various categories have been recruited during 2011-2014 by the DGHS, DGFP, DGNM, and DGDA; 10,000 new nurses have been recruited in 2016; six thousand new doctors were recruited in 2014 through Public Service Commission. In 2017, Hon'ble Prime Minister has approved the proposal to recruit 10,000 new doctors very soon through special BCS (Bangladesh Civil Service) examination. HR strategy serves as a strategic guide to align HR policies and plans with organizational missions, visions, and priorities and, thus, helps achieve organizational goals and objectives. To guide activities and improve HR situation in Bangladesh, the MOHFW has developed a systemic HR strategy. With the technical and financial support from WHO, the Human Resource Management (HRM) Unit of the Ministry of Health and Family Welfare has drafted the Bangladesh Health Workforce Strategy 2015 which got approval of the National Steering Committee for Implementation in the year 2016.

Bangladesh's health workforce (HWF) includes not only physicians, nurses, and midwives but also laboratory technicians, public health professionals, community health workers, pharmacists, and other support workers. Their main function is to deliver preventive, promotive and curative health services. The 2011 National Health Policy suggested the formulation of an HWF

Country	Health workers
Bangladesh	6.08 (7.4 in 2016; source: SDG Tracker, sdg.gov.bd)
Nepal	6.7
Pakistan	14.6
Sri Lanka	30.5
Bhutan	14.6
India	24.1
WHO threshold for UHC	22.8

Source: WHO SEARO regional workshop summery report 2016

strategy that mitigates the current skill-mix imbalance and the lack of incentives in order to address shortages and uneven distribution of health workers.

In late 2014, the Ministry of Health and Family Welfare (MOHFW) sought perspectives from a range of stakeholders while preparing the HWF strategy. With support from WHO, a technical working group was formed to develop the strategy. The drafts of earlier HWF documents and related policies were reviewed and, in January 2015, the Human Resources Management (HRM) Unit gathered all accessible data and conducted a detailed situation analysis.

Cross-cutting Principles

The strategy also includes four cross-cutting guiding principles: gender balance, motivation, partnership, transparency, and accountability

Based on the key findings of this situation analysis and on the country's commitments towards universal health coverage (UHC), the Bangladesh HWF Strategy 2015 addresses five thematic areas: HWF planning; HWF development; HWF distribution, retention, and professional engagement; Management of high performance standards; and HWF information systems. Each thematic area contains general and specific descriptions of the desired nature of the projected HWF in 2030; the actions needed to achieve the objectives; and the priority actions for short-term (2015-2017), and their main agents. Broader descriptions exist for the medium- (2017-2021) and long-term (2021-30) interventions.

The vision of the strategy is “attainment of quality health and wellbeing for the people of Bangladesh” and the mission is to achieve a “skilled, motivated and responsive health workforce in adequate number and available equitably across the country.” A total of five strategic objectives will help fulfill the vision and mission and contribute to the attainment

of health-related Sustainable Development Goal 3 and UHC:

- Ensure availability of competent and adequate number of personnel equitably
- Develop and maintain quality health workforce at all levels
- Recruit, deploy, and retain health workforce equitably
- Promote and maintain high standards in health workforce performance
- Establish and use health workforce information system (HWIS) to support health workforce planning and management

The strategy focuses on the entire national HWF. However, due to a lack of available HWF data and information, especially from the private, NGO and informal subsectors, it initially concentrates on the public sector, i.e. the workforce under the MOHFW. The strategy is formulated for five years (with long-term interventions up to 2030) and will be reviewed and updated as progress is made in the priority areas and new priorities for action emerge.

Drugs and equipment

Excessive availability of drugs and equipment poses a challenge as insufficiently-trained providers are supplying more than 30 different types of drugs. It has been reported that community clinics often provide drugs free of charge or on demand rather than providing these based on prescriptions. Since most drug-shops lack a pharmacist, private drug-shops partner with a poorly-educated population to provide a self-medication option, which has turned out to be the dominant mode of curative care. Unnecessary and even harmful drugs are dispensed in less than required dosage that leads to the development of drug resistance, and there is limited capacity of DGDA to ensure the drug control-related legislation. Substandard and adulterated drugs are often used. The Directorate General of Drug Administration will be strengthened to deal with these issues. There are also issues

regarding the utilization of equipment in facilities. It was found that only 50% of the equipment supplied under the Health and Population Sector Program (HPSP) 1998-20013 were effectively used at the final destination. Of the remaining 50%, major medical equipment not used (17%) were in working condition; 16% were not installed, and 17% were out of order. Expensive high-tech equipment were used relatively more than moderately-expensive equipment. The Government will address these issues and work to develop a national policy on management of healthcare technology.

The DGDA has drafted National Drug Policy 2016 which has already got approval. National Drug Policy 2016 has been formulated upon review of National Drug Policy 2005. In this National Drug Policy, there exist well-defined directives for safety, efficacy, and rational use of drugs, effective drug control management, production, marketing, distribution, storage, import, and export. This drug policy will facilitate further growth and expansion of the pharmaceutical sector, enhance capabilities of production of better-quality drugs, and also augment the scopes and opportunities for drug export many folds.

Table 9.3. Objectives of National Drug Policy

<ol style="list-style-type: none"> 1. Ensure that people can have easy access to safe, effective and good-quality drugs at affordable prices 2. Ensure rational and safe use of drugs and proper dispensing 3. Achieve self-sufficiency in the manufacture of drugs and raw materials by providing services and facilities on a priority basis to all local drug manufacturing industries 4. Expand the export of drugs that are manufactured in the country 5. Establish effective surveillance system for medicines
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Financing

Inadequate and inequitable health financing, along with inefficient use of existing resources,

is a challenge in this area. According to an estimate, US\$ 54 per capita is required to attain a fully-functioning health system and to cover a basic package of services, including interventions targeting non-communicable diseases by 2015. Bangladesh currently spends US\$ 30.83 per capita in health as reported in 2014 by World Bank. Compared to other South Asian countries, this figure is quite low. Public health spending comprises less than 1% of GDP. The HNP sector does not receive its due share of the national budget. The main sources of financing for the total health expenditure are out-of-pocket spending (66.98%), followed by the government spending (27.9%) [Source: World Bank]. Although the relatively wealthy persons are able to afford these out-of-pocket expenditure to receive quality healthcare, the poor can afford less; thus, they receive inadequate healthcare. To tackle the financing issues, the Health Financing Strategy (2012-2032) has also been developed for addressing this issue of reducing out-of-pocket expenditure.

The goal of the national health financing strategy is to strengthen financial protection and extend health services especially to the poor and vulnerable segments of the population and, thus, increase coverage with the long-term aim to achieve universal health coverage. The role of health financing comprises the following:

1. Provide all people with access to needed health services (including prevention, promotion, treatment, and rehabilitation) of sufficient quality to be effective.
2. Ensure that the use of these services does not expose the users to financial hardship.

To begin with, this strategy proposes to cover the poor and the formal sector, including government, private and NGO employees, and progressively extend the coverage to the remaining segment of the population by 2032.

To cope with the challenges and increase financial protection for the entire population and decrease out-of-pocket payments at the

point of service, the following three strategic objectives are proposed:

- Generate more resources for effective health services
- Improve equity and increase access to healthcare, especially for the poor and the vulnerable people
- Enhance efficiency in resource allocation and utilization

Strategic interventions and supportive actions are highlighted below.

Design and implement Social Health Protection Scheme

- i. Determine institutional arrangements for Social Health Protection Scheme
- ii. Design and implement Health Equity Fund/ National Health Security Office
- iii. Implement SSK for BPL
- iv. Design social health protection scheme above BPL (formal and informal)

Strengthen financing and provision of public healthcare services

- i. Implement needs and performance-based allocations
- ii. Scale up/reinforce result-based financing (MHVS)
- iii. Retain user-fees at the point of collection

Strengthen national capacity

- i. Support information exchange platform/ knowledge hub/resources pool
- ii. Develop the capacity to design and manage the social health protection scheme
- iii. Strengthen financial management and accountability
- iv. Improve monitoring and evaluation
- v. Introduce mechanisms to support the production of additional key staff (nurses, paramedics, and medical technicians)

Surveillance and research

Disease surveillance is essential for a well-functioning healthcare system. Since different programs and institutions are involved in disease surveillance, a single coordinated system will be more effective and yield better results. In terms of research, both public and private sectors are rigorously involved. As per resolution of the Government, the Bangladesh Medical Research Council (BMRC) is the focal point for health research. Functions of the BMRC are to identify problems and issues relating to medical and health sciences and to determine priority areas in research on the basis of healthcare needs, goals, policies, and objectives. The Institute of Epidemiology, Disease Control and Research (IEDCR) is the national institution for conducting disease surveillance and outbreak investigations in Bangladesh. The IEDCR has been engaged in controlling diseases and conducting research on events of public-health importance and developing public-health workforce in relevant fields.

Goals, Strategies, and Targets of the 7th Five-year Plan in the Health, Nutrition and Population Sector

Bangladesh will strive to attain a number of targets on the road towards universal health coverage, consistent with the proposed major targets under the Sustainable Development Goals (SDG) framework of the UN, promoting and sustaining health and nutrition, along with containing population growth as priorities in the human development strategy. Vision 2021 aims at establishing a middle-income Bangladesh, with drastic reduction in poverty and with conditions that allow individuals to reach and maintain the highest attainable level of health. To realize that vision, the Government has set certain objectives and targets towards achieving universal health coverage (UHC) in the HNP sector, which include the following:

- ◇ Ensure access to and utilization of HNP services for every citizen of the country,

with particular emphasis on the elderly, women, children, poor disadvantaged people, and those living in difficult areas

- ◇ Reduce total fertility rate
- ◇ Ensure adolescent and reproductive healthcare
- ◇ Strengthen community support and involvement to obtain better results in the implementation of programs
- ◇ Improve nutritional status of children and women
- ◇ Take effective measures to promote alternative medicines and improve the quality of care
- ◇ Meet challenges of emerging, re-emerging, and non-communicable diseases, health hazards due to climate change, and emergency response to catastrophes
- ◇ Enhance national capacity for the pre-service education (SBA/nursing, paramedics, midwifery), provide in-service training and better management of human resources
- ◇ Improve the quality of hospitals and maternity services and to make these accessible, especially to the women, children, and the poor
- Ensure access and utilization of HNP services for every citizen of the country, with particular emphasis on elderly, women, children, poor, disadvantaged and those living in difficult areas
- Reduce total fertility rate
- Ensure adolescent and reproductive healthcare
- Strengthen community support and involvement to obtain better results in implementation of program
- Improve nutritional status of children and women
- Take effective measures to promote alternative medicines and improve the quality of care
- Meet challenges of emerging, re-emerging and non-communicable diseases, health

hazards due to climate change and emergency response to catastrophes

- Enhance national capacity for pre-service education (SBA/nursing, paramedics, midwifery), provide in-service training and better management of human resources
- Improve the quality of hospitals and maternity services and to make these accessible especially to the women, children, and the poor

Bangladesh has already made great strides towards achieving these objectives. Past and ongoing programs promoted and are promoting good health and nutrition while also curbing population growth. In order to carry on with the progress achieved and address areas of deficiency, some of the specific targets for the HNP sector under the 7th FYP are shown in Table 9.4.

These targets may be viewed as ambitions but these are certainly achievable with timely actions to implement the associated policy and institutional reforms. Bangladesh is currently implementing the 4th SWAp in the HNP sector which aligns with the 7th FYP targets for achieving UHC and SDGs by 2030.

Health programs in the 7th FYP

Service delivery

To improve service delivery and utilize the vast healthcare network, various innovative approaches will be explored. It will involve review of the existing field-based service delivery, decentralization of the management of facilities, including involvement of local government institutions, like *Upazila Parishad* and providing autonomy to hospitals by protecting the interests of the poor; updating of essential service package (ESP) at different tiers of health service delivery; diversification of service provision (inclusive of public-private partnership), particularly for hard-to-reach areas; development of a functional referral system involving all levels of facilities; ensuring quality of care, etc.

Table. 9.4. Targets for the 7th FYP in health, nutrition and population sector

Sl. No.	Indicator Impact/Outcome	Base year's information (source with year)	7th FYP target FY 2020
1.	Life-expectancy at birth	72.22 (World Bank 2015)	72
2.	Total fertility rate (children per women)	2.13 (World Bank 2015)	2.0
3.	Under-5 mortality rate (per 1,000 livebirths)	46 (BDHS 2014)	37
4.	Infant mortality rate (per 1,000 livebirths)	38 (BDHS 2014)	20
5.	Maternal mortality ratio (per 100,000 livebirths)	176 (World Bank 2015)	105
6.	Proportion of underweight among under-five children (%)	32.6 (BDHS 2014)	20
7.	Proportion of stunting among under-five children (%)	36.1 9 (BDHS 2014)	25
	Output		
8.	Proportion of births attended medically-trained care providers (%)	42.1 (BDHS 2014)	65
9.	Contraceptive prevalence rate (%)	62.4 (BDHS 2014)	75
10.	Proportion of children fully-vaccinated by 12 months (%)	78 (BDHS 2014)	75
11.	Proportion of births in health facilities by wealth quintile (ratio of the lowest and the highest quintile)	15:69.5 (BDHS 2014)	1:3.5
12.	TB case detection rate (%)	53 (GTR 2014)	75

Source: Ministry of Health and Family Welfare

Wider access

The health service delivery system will ensure that the poor, marginalized and geographically-disadvantaged segments of the population are able to have access and utilize health services. Particularly, to provide HNP services to urban slum and street dwellers, proper institutional arrangements will be made to facilitate collaboration and cooperation among MOHFW, LGD/MOLGRD&C, DPs, NGOs, private sector, and other stakeholders.

Private sector and regulation

Since a considerable portion of the population turns to the private sector for health services, proper regulation to protect the people from malfeasant practices is crucial. An effective regulatory mechanism will, thus, be developed. The Government will support the private sector in discharging their corporate social

responsibilities by providing access to the poor and disadvantaged. The possibility of utilizing the vast informal sector of health service delivery, which is particularly important for hard-to-reach rural areas, will be explored.

Strengthening delivery and newborn care

To make better and effective use of the government-trained community skilled birth attendants (CSBAs), proper technical mentoring and supervision will be introduced. The number of CSBAs will be increased as well. Close collaboration with the private sector and NGOs is expected in this regard. Newly-trained dedicated midwives will be deployed in newly-created posts at the union and upazila levels to augment service delivery. After proper mapping of the existing comprehensive emergency obstetric care (CEmOC) services, new initiatives will be undertaken to ensure access to CEmOC, particularly in hard-to-reach areas. Strategic

partnerships with DPs, NGOs, and the private sector will be built to strengthen and expand newborn care. It will include the leverage of resources and collective efforts to align, harmonize actions, and improve public-sector efforts, including intensification of newborn care promotion.

Tackling communicable and non-communicable diseases

Recognizing the epidemiological transition, massive health promotion and prevention efforts for impending non-communicable diseases will be carried out. Ongoing efforts to reduce the effects of communicable diseases will be further consolidated. Health promotion efforts will be further strengthened through better coordination (among different health and family planning programs, non-public sectors, including the private sector) with the aim of informing people about different aspects of health for changing their attitudes and behavior that will result in improved health outcomes.

Tackling tobacco-related burden

Considering the cost of tobacco and enormous negative impact on our economy, society, environment, and public health, the Government will ensure effective implementation of tobacco control laws and policies as well as rigorous compliance with the Framework Convention on Tobacco Control (FCTC).

Equal access to health services

Gender- and adolescent-friendly services, together with availability of proper information for the adolescents will be ensured to protect themselves from health hazards. Health facilities will be maintained properly, and women will be given their due privacy and confidentiality regarding health matters. Alternative medical care services will be further strengthened and expanded through proper initiatives in education, service delivery, and regulatory arrangements.

Environmental issues

Environmental and climate change issues relating to the health sector will be looked at more closely. Medical waste management will be expanded to cover all medical installations and programs of public and non-public sectors. Appropriate initiatives will be undertaken to manage the emerging and re-emerging health problems, together with strengthening emergency preparedness and response capacity by the health sector.

Tribal health

The problem with service delivery in the hill districts will be tackled in collaboration with MOCHTA and other relevant authorities. District-specific health service system will be developed, along with institutional arrangements for respective hill district councils to facilitate the system operation. Tribal-friendly health services will be ensured through appropriate initiatives for tribal populations residing in plain lands.

Autism

Autism or more commonly known as autism spectrum disorder (ASD) is a complex neurodevelopmental disorder that affects a person's ability to communicate, form relationship with others, and respond appropriately to their environment. In 2007, the United Nations adopted the Convention on the Rights of Persons with Disabilities (CRPD) addressing the human rights of all persons with disabilities, signed by 150 countries and ratified by 100. Bangladesh was one of the first countries to ratify the CRPD and has also signed its Optional Protocol. In recognition of ASD as a global health crisis, the UN designated in 2008 the 2nd of April as the World Autism Awareness Day. Since then, several regional and international resolutions have been adopted, urging countries to coordinate efforts, implement public-health initiatives and develop multisectoral opportunities for social inclusion and economic emancipation of persons with ASD.

Bangladesh has addressed the issue of ASD in a planned manner. It hosted the first Regional Conference on Autism in 2011, which was attended by over 1,000 national and international delegates. The National Steering Committee on Autism and Neurodevelopment Disabilities has been formed; the Committee comprises representatives from 15 ministries/divisions, including Health and Family Welfare, Social Welfare, Education, Primary and Mass Education, Labor and Employment, Women and Child Affairs, Local Government Division, Finance Division, Ministry of Information, Economic Relations Division, Ministry of Youth and Sports, Ministry of Cultural Affairs, Planning Commission and NGO Affairs Bureau. The National Steering Committee is guided by a National Advisory Committee and a Technical Guidance Committee comprising both parents and experts. A Strategic and Convergent Action Plan on Autism and Neurodevelopment Disabilities (SCAPAND) has been developed and incorporated within the current sector program. The responsibility of the 17-member Autism Technical Guidance Committee at the national level is to provide technical support to the Advisory and Steering Committees. Working in specialized group, members are responsible for translating appropriate materials for use in Bangladesh, collating existing materials available in the country and the region, identifying needs in the community and setting priorities. During the 7th FYP period, the exponential increase in the prevalence of ASD across the country, including other disability issues, will be properly addressed through appropriate advocacy campaign, effective coordination among concerned ministries, departments, and NGOs for proper preventive, curative and rehabilitative services, along with expansion of services to meet the needs of different types of disabled that will make health-facilities disabled-friendly. To uphold the health-related rights and ethics, such issues will be incorporated in all medical, nursing and other educational curricula, along with proper

sensitization initiatives for the existing health service providers.

Mental health

Mental health and wellbeing are fundamental to a healthy nation. During the 7th FYP, the MOHFW will promote services for mental health and wellbeing, including access to essential care. The priority areas to be addressed include: depression, psychosis, bipolar disorders, epilepsy, developmental and behavioral disorders in children and adolescents, dementia, drug-abuse disorders, self-harm/suicide, etc. To address these problems, a comprehensive mental health service delivery plan will be developed with the aim of gradual expansion of service to address the growing need of psychological aspects of health.

Geriatric care

Aging of population is an inevitable consequence of fertility decline and the demographic bonus in Bangladesh. People over 60 years constituted over 11% of the total population in 2011 and are estimated to grow to 14.4% in 2021 and to 21.3% in 2031. Health is a major component of addressing the challenges posed by increasing proportion of aging population. The MOHFW recognizes the need for reorienting the existing institutional arrangements for health service delivery and intends to increase investment—both financial and human resources—in this subspecialty. As part of that effort, the National Institute for Physical and Geriatric Medicine and Rehabilitation is proposed to be set up during the 7th FYP. The MOHFW will also promote multisectoral collaboration with other ministries (e.g. Ministry of Social Welfare), NGOs, CSOs, etc., for improving geriatric healthcare.

Health education

Creating and maintaining a healthy nation requires proper dissemination of knowledge regarding factors that affect health outcome.

This wide spectrum of knowledge includes, among others, dietary issues, lifestyle choices, and sanitation. To instil good practices from an early age, health education will be included in primary schools. Steps will be taken to impart health education through mass media and raise awareness at the community level. The necessity of proper nutrition and food diversification to include iron, vitamin A, and carotene-rich food in regular dietary intakes will be particularly expounded. Lifestyle choices, such as smoking, excess calorie consumption, and lack of physical activity pose a serious threat to the wellbeing of people, particularly the urban youths. To tackle this issue, preventive and promotional health education services will be ensured for all.

Governance and health-sector management

In addition to addressing service delivery issues, the 7th FYP will also take into account the deficiencies in governance and management of the health sector. Issues relating to the inadequacies in the health workforce, finance, surveillance, drugs and equipment, information and research will be addressed. Table 9.5 provides the details.

Nutrition program in the 7th FYP

A particular challenge faced by the nutrition subsector is that it is perceived to have a low priority compared to other development issues. The HNP share of the total expenditure is dominated by the health subsector while that of nutrition is often overlooked. In addition to institutional limitations, persistent micronutrient deficiencies, lack of public awareness, maternal undernutrition, acute malnutrition, and lack of dietary diversity are among other challenges in this subsector. The 7th FYP will address the impeding factors relating to nutrition and will strengthen the enabling environment for scaling up nutrition.

Strategy for nutrition

A strategy for nutrition planning is outlined in the National Food Policy (2006) and the

National Food Policy Plan of Action–NFP PoA (2008-2015), which was developed by 11 line ministries. The main objectives of the NFP PoA are to achieve adequate and stable supply of safe and nutritious food for everyone, especially women and children. The Institute of Public Health and Nutrition (IPHN) of the DGHS has been assigned as the institutional home for nutrition. Nutrition Program of the MOHFW has been mainstreamed within the DGHS and DGFP through a new Operational Plan for National Nutrition Services (NNS) and will be used for providing regular nutritional services. The responsibilities and capacities of relevant sectors and institutions, i.e. upazila health complexes and district hospitals, will be expanded and developed accordingly to manage severely-malnourished cases.

Role of other ministries

Apart from the MOHFW, other ministries are also playing important roles in improving nutrition. Ministry of Agriculture provides extension services for different crops fortified with nutritional elements, newly-developed by research institutions of Bangladesh. Introducing a new variety of rice, namely Golden Rice, fortified with beta-carotene as vitamin A supplement, is a major achievement, which will be extended in suitable areas. Table 9.6 lists some public-sector stakeholders in nutrition. During the 7th FYP period, the roles and responsibilities of the stakeholders for nutrition will be specified, and arrangements of appropriate coordination and synergistic action will be made. Policy guidance and inter- and intra-ministerial linkages can be facilitated through the existing cabinet committees and coordination structures that address food security/nutrition within the Ministry of Food and Disaster Management and others. The MOHFW will collaborate with the Ministry of LGRD&C and the Ministry of Food and Disaster Management to address nutrition and food safety issues within urban contexts.

Table 9.5. 7th FYP strategies for governance and management in the health sector	
Health workforce	<ul style="list-style-type: none"> • Develop a national health workforce strategy • Implement an HR action plan to ensure adequate number of personnel with appropriate skill-mix, deployment with terms and conditions, retention, career progression, job satisfaction, etc.
Information	<ul style="list-style-type: none"> • Implement the M&E Action Plan • Further improve health information systems through strengthened collaboration of the DGHS and DGFP by scaling up RHIS initiative • Ensure timely reporting from all units • Use information to make management decisions at different levels • Explore full potential of ICT to facilitate service delivery, education, information gathering, and management efficiency • Build capacity of health managers at the district and subdistrict levels, particularly on data analysis, health planning and monitoring
Drugs and Equipment	<ul style="list-style-type: none"> • Strengthen the Directorate General of Drug Administration for ensuring production and dispensing of quality drugs, promotion of rational use of drugs, and elimination of harmful and useless drugs • Strengthen Bangladesh Pharmacy Council to support regulatory role of DGDA • Develop a national policy on management of healthcare technology in which all stages of the procurement process identified in the planning, supply and ownership management (PS&OM) model are addressed
Finance	<ul style="list-style-type: none"> • Ensure proper implementation of Health Care Financing Strategy 2012 to strengthen financial risk protection and extend health services and population coverage • Increase public-sector contribution in the health sector with appropriate initiatives to increase assistance of development partners and decrease out-of-pocket expenditure with prepayment initiative, like health insurance
Governance	<ul style="list-style-type: none"> • Strengthen stewardship role and regulatory functions through review of the existing regulatory mechanisms in terms of number, structure, mandate, and capacity • Develop and implement proper regulations required to ensure quality and equitable health services of the public sector and gradual shift in public sector's role from service delivery to stewardship and regulation for ensuring universal health coverage
Surveillance and Research	<ul style="list-style-type: none"> • Develop a well-coordinated surveillance system to guide the program initiatives and their effectiveness • Strengthen Bangladesh Medical Research Council (BMRC), National Institute of Population Research and Training (NIPORT), Institute of Epidemiology, Disease Control and Research (IEDCR), and the National Institute of Preventive and Social Medicine (NIPSOM) to carry out health-sector research and dissemination of results • Establish Bangladesh Institute of Health Management
Source: Ministry of Health and Family Welfare	

Table 9.6. Roles of government sectors (outside health) in improving nutrition		
Domain	Role and activity towards scaling up nutrition programs	Ministry
Education	<ul style="list-style-type: none"> • Incorporate nutrition and hygiene education in curriculum, including school vegetable garden and cooking demonstrations • Ensure regular Health and Nutrition Days in the school calendar • Ensure completion of education for girls at least up to high school level • Promote and protect good dietary practices among children in places where there are school feeding programs • Improve sanitation facilities in schools 	Education, Health and Family Welfare, Information
Water and sanitation	<ul style="list-style-type: none"> • Contribute to increased levels of handwashing and hygiene • Ensure availability of safe drinking-water • Improve availability of sanitary facilities in different settings • Prioritize the availability of water to women for agriculture and fishing 	Local Govt., Rural Development and Cooperatives, Health and Family Welfare, Water Development
Food	<ul style="list-style-type: none"> • Ensure improved availability of diverse foods of quality • Promote best practice to ensure food safety in agriculture sector, food processing industries, food distribution system and in food value chain • Ensure adequate food safety regulatory framework to be in place and monitored 	Food, Industry, Disaster Management, Fisheries and Livestock, Health and Family Welfare, Agriculture
Agriculture, Fisheries and Livestock	<ul style="list-style-type: none"> • Improve production of diversified food (source of animal protein) • Empower women to have access to agricultural extension services and resources • Incorporate basic nutrition into agricultural extension training and tasks • Build agricultural extension and agricultural input supply system to ensure that nutrition is considered in planning and implementation 	Agriculture, Fisheries and Livestock, Water Development
Women and Children Affairs	<ul style="list-style-type: none"> • Emphasis on empowerment of women to make decisions about their own and their children's wellbeing • Highlight child marriage/early pregnancy and childbearing, and their harmful implications for nutrition • Ensure that 6-month fully-paid maternity leave is implemented in all sectors 	Women and Children Affairs, Health and Family Welfare, Primary and Mass Education, Information
Table 9.6. Contd.		

Table Continued...		
Domain	Role and activity towards scaling up nutrition programs	Ministry
Industry	<ul style="list-style-type: none"> • Increase availability of fortified staples, salt, and oil • Adhere to high standards in advertising/marketing, focus on children 	Industry, Food and Agriculture
Environment, forestry and natural resources	<ul style="list-style-type: none"> • Restoring or enhancing natural resources • Protecting forests, promoting forest-derived foods to benefit poor/women • Securing ownership, access and management rights to land and other productive resources for the poor or marginalized groups (e.g. ethnic minorities, emergency-affected populations) • Pro-poor, efficient and integrated management of water resources, including control for negative impacts, such as waterborne diseases • Risk mitigation and management of water-related shocks (e.g. droughts, floods, water insecurity) through adequate infrastructure, storage and flood control, supporting adaptation to the effects of climate change • Strengthening early warning and nutrition surveillance systems • Increase collaboration with other sectors and joint programming to increase household/community resilience, especially in emergencies • Monitoring and evaluation systems to include nutrition relevant indicators 	Environment and Forestry Chittagong Hill Tracts
	<ul style="list-style-type: none"> • Protect, promote and monitor rights and non-discrimination: right to adequate food and to be able to feed oneself in dignity; and all other related rights (employment, children's rights; women's rights; rights to water, focus on marginalized groups, poor households and women) • Uphold refugee and humanitarian law in protracted crises 	Women and Children Affairs, Justice
Source: Compiled by FAO, UNICEF, WFP, WHO (partnering as UN REACH) with Canada's DFATD, DFID, EU, USAID, and World Bank, as part of their joint work on "Undernutrition in Bangladesh: A Common Narrative". Version 1, 2014		

Addressing child and maternal malnutrition

Under the 7th FYP, efforts will be taken to mainstream gender issues in nutrition programs. Proper attention will be given to the high rate of malnutrition among children and women. To that end, the Government will consider a multidimensional approach to

addressing the intergenerational health impact. Among other things, such an approach will include awareness on child/women's nutrition, food value and food diversity. Iron-folic acid supplementation among pregnant, lactating women, and adolescent girls to cover iron-deficiency anemia will be undertaken through

health and family planning facilities. The national strategy for infant and young child-feeding will be implemented.

The existing half-yearly vitamin A capsules distribution for children will be continued. Vitamin A distribution to improve vitamin A status of neonates through breast-milk will be scaled up for postpartum women. Monitoring of salt iodization will be strengthened. Zinc in the treatment for diarrhea will be adequately promoted. Expansion of treatment for intestinal parasites, including the distribution of Albendazole tablets, along with a separate deworming program, will be considered. With the coverage of IMCI, zinc tablets are expected to be freely provided to children with diarrhea.

Capacity-building and awareness

To improve the knowledge-base and capacity of health personnel regarding nutrition, health and family planning workers as well as agricultural extension workers will be appropriately trained in nutrition education. This will ease the mainstreaming of nutrition in health and family planning services through community clinics, union health and family welfare centers/subcenters, upazila health complexes, and agricultural extension services. Capacity-building in nutrition of upazila health and agricultural workers, school teachers, and women farmers will be undertaken through the NNS Operational Plan of IPHN. Community awareness regarding health and nutrition will be strengthened through disseminating messages. Community-based arrangements will also promote preparation of low-cost nutritious recipes, processing and preservation of micronutrient-rich foods. Issues that are supplementary and complementary to nutrition, like water and sanitation, dietary intake, EPI, and health education will be addressed through a comprehensive approach.

Population program in the 7th FYP

In recent times, there has been a good progress in curbing population growth, with total fertility

rate now lowered to 2.3. The current fertility rate is the lowest compared to any country with a similar level of poverty. However, even with a declining growth rate, significant population growth is likely to occur in Bangladesh over the coming decades. Depending on the total fertility rate, the total population would fall in the range of 167-171 million by 2020, when the 7th FYP period ends.

The current high fertility rate is 2.3; the medium scenario assumes that TFR is declining to replacement level (2.1) by 2016, and, subsequently, to 1.9 by 2021; the low scenario assumes that TFR is declining to below replacement level (2.0) by 2016, and then to 1.6 by 2021. Based on these projections, population increase would be between 17.41 million under the low scenario and 21.26 million under the high scenario by the end of 2020. Per year population growth rate would be 0.89 to 1.46%. As can be seen from the figure, total population will continue to grow under both high and medium scenarios. Only the low scenario shows the population leveling off within the next 50 years.

Demographic dividend

An interesting feature of the population trend in Bangladesh is the emergence of a demographic dividend. Under all three scenarios, the age-group of the core labor force (15-59 years) would increase significantly by 2061. The increase would be from 86.7 million in 2011 to 152.3 million under the high scenario, 130.8 million under the medium scenario, and to 117.1 million under the low scenario. Thus, significant growth in the working-age population lies ahead. This demographic dividend is expected to come into being over the next decade. This is particularly important because a plentiful supply of young, healthy and educated workers can stimulate the economy to a large extent. The next few years will, thus, be the optimal period for investing in human resources and establishing other conditions that will further stimulate the Bangladesh economy.

Strategy for the population subsector

Given the current scenario and projections of population growth, the population subsector of HNP is particularly important for future development of Bangladesh. As such, the Government has outlined a strategy not only to reduce the fertility rate but also to create an environment where the citizens of Bangladesh will be aware and actively involved in checking population growth.

Total fertility rate varies across regions in Bangladesh. While some have already achieved replacement level, fertility rates are as high as 3 in some areas. Existing family planning services will, thus, be strengthened through delivering regional packages in less-performing divisions/pockets. Method-mix of contraceptive-use will be shifted to long-acting permanent method (LAPM). The unmet need for contraception will be reduced, along with the tendency to discontinue contraception, through improved collaboration with health department and others to ensure services of technical personnel, like doctors and nurses.

Gender equality and family planning

Gender equality will be particularly ensured during the 7th FYP period in family planning. Despite the government mandates declaring legal age of marriage, child marriage continues to be a serious problem, more so in rural areas. Increasing the average age at marriage, translating to greater maturity of women at the time of marriage is likely to reduce fertility. It will open other potential roles for women, enabling them to avoid unwanted pregnancies. Moreover, later childbearing will reduce rates of population growth by extending the mean length of time to replace a generation. Population and family planning services will, thus, be improved by promoting delay in marriage and childbearing, among other interventions. Newly-wed couples, especially adolescents, will be targeted to delay the first childbirth. Counseling on population control

and reproductive health and behavior will be continued and expanded in healthcare centers. Steps will be taken to ensure women's decision-making over reproductive health through proper education and information. Services for women beyond reproductive age will be addressed to ensure a more equitable and gender-friendly access to health services.

Targets for the 7th FYP

The Government has set a target to reduce the fertility rate to 2.0 by the time the planned implementation period is ended. This target is close to the low scenario among the projections. Although this can be viewed as ambitious, it is undoubtedly achievable with diligent actions at all fronts. Apart from the target for TFR, other targets in the population subsector are as follows:

- Increase contraceptive prevalence rate from 62.4% to 75%
- Reduce unmet demand of eligible couples for FP supplies from 12% to 10%
- Reduce discontinuation rate of contraceptive rate from 30% to 20%
- Increase contraceptive prevalence rate to arrest population growth by making services and contraceptives available to people at minimum cost and using door-to-door service wherever required
- Improve population and family planning services through the following interventions:
 - i. Promote delay in marriage and childbearing, use of postpartum FP and FP for appropriate segments of population
 - ii. Strengthen FP awareness-building efforts through Information, Education and Communication (IEC) activities, with special emphasis on mass communication and considering local specificities
 - iii. Use different service delivery approaches (including domiciliary services) for different geographical regions and segments of population having low CPRs

- iv. Register eligible couples with particular emphasis on urban areas to establish effective communication and counseling
- v. Compensate for lost wages for performance of long-acting and permanent method contraceptives
- vi. Strengthen FP services, especially postpartum and post-abortion FP, and demand generation through effective coordination of services with the DGHS
- vii. Strengthen advocacy for male participation in permanent and other methods of contraception.
- viii. Create awareness of all relevant ministries of their roles in population management with MOHFW in the lead.

Implementation Mechanism

The Government of Bangladesh is currently implementing the 4th Health, Nutrition and Population (HNP) Sector Program, which will be completed in June 2022. The HNP sector development initiatives in Bangladesh have been following the sector-wide approach (SWAp) since 1998 as part of implementation mechanism of the MOHFW's development activities. The strategic directions and objectives of the 4th HNPSP is in line with the 7th FYP document and will be guided by and closely aligned with the overarching economic and social development objectives of the Government.

4th HPNSP: strategy and objectives

Main objectives

The 4th HPNSP is built upon the existing achievements to improve equity, quality, and efficiency with a view to moving gradually towards UHC and achieving health-related Sustainable Development Goals (SDGs) through pursuing the following strategic objectives (SOs) during the next five-and-a half years starting from January 2017:

- SO 1 : Strengthen governance and stewardship of the public and private health sectors
- SO 2 : Undertake institutional development

for improved performance at all levels of the system

- SO 3 : Provide sustainable financing for equitable access to healthcare for the population and accelerated progress towards universal health coverage
- SO 4 : Strengthen the capacity of the MOHFW's core health systems (financial management, procurement, infrastructure development)
- SO 5 : Establish a high-quality health workforce available to all public and private health service providers
- SO 6 : Improve health measurement and accountability mechanisms and build a robust evidence-base for decision-making
- SO 7 : Improve equitable access to and utilization of quality health, nutrition and family planning services
- SO 8 : Promote healthy lifestyle choices and a healthy environment

Vision, Mission and Goal of the Program

The PIP is based on the vision, mission, goal, development objectives, strategic objectives, and resource envelope as mentioned in the Strategic Investment Plan (SIP) of MOHFW developed in mid-2016.

Vision

“To see the people healthier, happier and economically productive to make Bangladesh a middle income country by 2021” (Vision 2021)

Mission

“To create conditions whereby the people of Bangladesh have the opportunity to reach and maintain the highest attainable level of health”

Goal

“To ensure that all citizens of Bangladesh enjoy health and wellbeing by expanding access to

quality and equitable healthcare in a healthy environment”

The eight strategic objectives of the 4th HPNSP have been categorized under three components, such as:

- (1) Governance and Stewardship
- (2) Stronger Health Systems
- (3) Quality Health Services

In addition, there are process/output indicators at the OP level covering all the OPs for monitoring OP-wise progress of work on a six-monthly/annual basis. A number of tools will also be used in documenting and tracking outputs and indicators, for regular monitoring of the program, as illustrated in Table 9.8.

The Table 9.9 shows the implementation monitoring tools for the HPNSP.

Strengthening governance and stewardship

In the 4th HPNSP, strengthening governance and stewardship is a separate component that includes 5 different Operational Plans under MOHFW. Table 9.9 shows the names of the OPs under different components of the 4th HPNSP, along with designated line directors. Notably, based on implementation experience, the designated LDs may undergo change during implementation.

SDGs and implementation challenges in Bangladesh (Vision 2030)

Attainment of SDGs will require a strong and effective institutional mechanism involving all stakeholders, including public representatives (central and local), government (executives and bureaucrats), private sector, civil society, knowledge community, and development partners. Mandatory efficacious leadership is necessary to bring them all together.

Table 9.7. RFW (Results Framework) goal-level indicators for the 4th HPNSP				
Sl. no.	Indicator	Means of verification and timing	Baseline and source	Targeted deadline June 2022
1	2	3	4	5
Goal 1	Under-five mortality rate (U5MR)	BDHS, every 3 years	46, BDHS 2014	34
Goal 2	Neonatal mortality rate (NNMR)	BDHS, every 3 years	28, BDHS 2014	18
Goal 3	Maternal mortality ratio (MMR)	BMMS/MPDR/MMEIG, every year	176 WHO 2015	121
Goal 4	Total fertility rate (TFR)	BDHS, every 3 years	2.3 BDHS 2014	2.0
Goal 5	Prevalence of stunting among under-five children	BDHS, every 3 years/ UESD, every non-DHS years	36.1% BDHS 2014	25%
Goal 6	Prevalence of hypertension among adult population	BDHS, every 3 years/ NCD-RF, every 2 years	Female 32% Male 19% BDHS 2011	Female 32% Male 19%
Goal 7	% of public facilities with key service readiness as per approved Essential Service Package (ESP)	BHFS, every 2 years	FP: 38.2% ANC 7.8% CH 6.7% BHFS 2014	FP: 70% ANC 50% CH 50%
Goal 8	% of total health expenditure (THE) financed from public sector	BNHA, every 3 years	23.1% BNHA 2012	26.2%

Sl. No.	M&E tool	Responsibility	Frequency
1.	Annual Development Program (ADP)	MOHW	Monthly
2.	Six-monthly Progress Report (SmPR)	PMMU/PW	Six-monthly
3.	Mandated Implementation Reports to Implementation Monitoring and Evaluation Division (IMED) in Form 3 and 4	PW	Monthly (Form 5) Quarterly (Form 3)
4.	Review of Prioritized Action Pan (PAP)	PW	Six monthly
5.	Review and Update RFW and OP-level Indicators	PW	Periodically
6.	Annual Program Implementation Report (APIR)	PMMU/ PW	Annually
7.	Review of DLIs	PMMU/FMAU/PW/ World Bank	Six-monthly/ Annually
8.	Annual Program Review (APR)	Jointly by MOHFW and DPs	Annually
9.	OP Review	OPIC	Periodically
10.	National ADP Review	National Economic Council (NEC)	Quarterly
11.	National Representative Sample Surveys	BBS	Periodically
12.	Endline Evaluation of Sector Program	IMED/	Once
13.	Program Completion Report (PCR) to Planning Commission	PW	Once

Sl. No.	Operational Plan (OP)	Designated LD
Component 1: Strengthening Governance and Stewardship		
1.	Sector-wide Program Management and Monitoring (SWPMM)	JC (Planning), MOHFW
2.	Planning, Monitoring and Research (PMR)	Director (Planning and Research), DGHS
3.	Planning, Monitoring and Evaluation (PME)	Director (Planning), DGFP
4.	Health Economics and Financing (HEF)	DG, HEU, MOHFW
5.	Strengthening of Drug Administration (SDAM)	DG, DGDA
Component 2: Health Systems Strengthening		
6.	Health Information Systems and eHealth (HIS & e-Health)	Director (MIS), DGHS
7.	Management Information System (MIS)-FP	Director (MIS), DGFP
8.	Medical Education and Health Manpower Development (ME&HMPD)	Director (Medical Education), DGHS
9.	Procurement, Storage and Supply Management–Health Services (PSSM-HS)	Director (CMSD), DGHS
Table 9.9. Contd.		

Table Continued...		
Sl. No.	Operational Plan (OP)	Designated LD
10.	Procurement, Storage and Supply Management–Family Planning (PSSM-FP)	Director (Logistics), DGFP
11.	Physical Facilities Development (PFD)	Addl. Sec./Joint Sec. (Development), MOHFW
12.	Human Resource Development (HRD)	One Addl. Sec. MOHFW
13.	Improving Financial Management (IFM)	Addl. Sec./Joint Sec.(FMA), MOHFW
14.	Training, Research and Development-NIPORT (TRD)	DG, NIPORT
15.	Nursing and Midwifery Education and Services (NMES)	DG, DGNM
Component 3: Provision of Quality Health Services		
16.	Maternal, Neonatal, Child and Adolescent Health (MNCAH)	Director (PHC), DGHS
17.	Maternal, Child, Reproductive and Adolescent Health (MCRAH)	Director (MCH), DGFP
18.	National Nutrition Services (NNS)	Director (IPHN), DGHS
19.	Communicable Diseases Control (CDC)	Director (Disease Control), DGHS
20.	TB-Leprosy and AIDS/ STD Program (TB-L & ASP)	Director, MBDC, DGHS
21.	Non-communicable Diseases Control (NCDC)	Director, DGHS
22.	National Eye Care (NEC)	Director, NIO, DGHS
23.	Community-based Healthcare (CBHC)	ADG, DGHS
24.	Hospital Services Management (HSM)	Director (Hospitals and Clinics), DGHS
25.	Clinical Contraceptive Services Delivery Program (CCSDP)	Director, DGFP
26.	Family Planning Field Services Delivery (FPFSD)	Director, DGFP
27.	Lifestyle and Health Education & Promotion (LHEP)	Director (BHE), DGHS
28.	Information, Education and Communication (IEC)	Director (IEM),DGFP
29.	Alternative Medical Care (AMC)	Director (Homeo and Indigenous Medicine), DGHS

Good governance is an imperative prerequisite for Bangladesh

For the poor, the availability and quality of public health services is of great importance. Where public services are inadequate, the poor will resort to private services but with a considerable negative impact on the family's disposable income. When government resources for healthcare are constrained, good

management of health services is particularly important to sustain access to healthcare for the poor, at least to a minimum package of primary care and referral services.

The reasons for deficit in governance in the health sector include: absence, limitations, lack of implementation of laws, and also lack of transparency, accountability, responsiveness and oversight. Other reasons

include: politicization, lack of long-term planning, limitations of infrastructure, and inadequate of budgetary allocation. Moreover, irregularities and corruptions also create impact on the governance in the health sector.

Goal and objectives of the National Health Policy 2011

To overcome the existing challenges and to create a regulatory framework, the National Health Policy 2011 was implemented which aimed at the following:

First: Make necessary basic medical utilities reach people of all upazilas and develop the health and nutrition status of the people

Second: Develop system to ensure easy and sustained availability of health services

Third: Ensure optimum quality, acceptance, and availability of primary healthcare and governmental medical services

Fourth: Reduce the intensity of malnutrition among people and implement effective and integrated programs for improving nutrition status

Fifth: Undertake programs for reducing the rates of child and maternal mortality

Sixth: Adopt satisfactory measures for ensuring improved maternal and child health and install facilities for safe and hygienic child delivery

Seventh: Improve overall reproductive health resources and services

Eighth: Ensure the presence of full-time doctors, nurses, and other officers/staff, provide and maintain necessary equipment and supplies at each of the upazila health complexes and union health and family welfare centers (UHFWCs)

Ninth: Devise necessary ways and means to make optimum usage of available opportunities in government hospitals and the health service system

Tenth: Formulate specific policies for medical colleges and private clinics and introduce laws and regulations

Eleventh: Strengthen and expedite the family planning program with the objective of attaining the target of replacement-level fertility

Twelfth: Explore ways to make the family planning program more acceptable, easily available, and effective among the extremely poor and low-income communities

Thirteenth: Arrange special health services for the mentally-retarded, the physically-disabled and elderly populations

Fourteenth: Determine ways to make family planning and health management more accountable and cost-effective by equipping it with more skilled manpower

Fifteenth: Introduce systems for treatment of all types of complicated diseases in the country and minimize the need for foreign travel for medical treatment abroad

Ministry of Health and Family Welfare and success stories in governance

The Ministry of Health and Family Welfare seeks to create conditions whereby the people of Bangladesh have the opportunity to reach and maintain the highest attainable level of health. It is a vision that recognizes health as a fundamental human right and, therefore, the need to promote health and reduce suffering is the spirit of social justice. It performs the following:

- Policy regarding health and family planning
- Public health
- Registration of births and deaths.
- Adulteration of foodstuffs and other goods relating to health
- Control of epidemics and prevention of infectious and contagious diseases, and quarantine isolation
- Health insurance

Table 9.10. Laws and Acts under the MOHFW
Law/Act
Medical Education-1: Chittagong Medical Law, 2016
Medical Education-1: Rajshahi Medical Law, 2016.
Bangladesh Medical & Dental Council Act, 2010
Bangabandhu Sheikh Mujib Medical University Act, 1998
The Public Health (Emergency Provisions) Ordinance, 1944
The Malaria Eradication Board Ordinance, 1961
The Bangladesh Malaria Eradication Board (Repeal) Ordinance, 1977
The Prevention of Malaria (Special Provisions) Ordinance, 1978
The Epidemic Diseases Act, 1897
The Vaccination Act, 1880
The Essential Services (Second) Ordinance, 1958
The Medical and Dental Council Act, 1980
The Medical Council (Amendment) Act, 1963
The Bangladesh Nursing Council Ordinance, 1983
The Pharmacy Ordinance, 1976
The Drugs Act, 1940
The Drugs (Amendment) Act, 1963
The Drugs (Control) Ordinance, 1982
The Drugs (Supplementary Provisions) Ordinance, 1986
The Drugs (Control) (Amendment) Act, Ordinance, 2006
The International Centre for Diarrhoeal Disease Research Ordinance, 1978
International Centre for Diarrhoeal Disease Research, Bangladesh (Amendment) Act, 1978
The Medical Service of Pakistan Order (Repeal) Act, 1963
The Medical Practice Private Clinics and Laboratories (Regulation) Ordinance, 1982
The Medical Practice Private Clinics and Laboratories (Regulation) (Amendment) Ordinance, 1984
The Medical Council Act, 1973
The Medical Council (Amendment) Ordinance, 1976
The Medical Diplomas Act, 1939
The Medical Colleges (Government Bodies) Ordinance, 1961
The Medical Diplomas (Repeal) Act, 1966
The Medical Degrees Act, 1916
The Allopathic System (Prevention of Misuse) Ordinance
The Bangladesh Homeopathic Practitioner Ordinance, 1983
Table 9.6. Contd.

Table Continued...
The Bangladesh College of Physicians and Surgeons Order, 1972
The Bangladesh Unani and Ayurvedic Practitioner Ordinance, 1983
The Unani, Ayurvedic and Homeopathic Practitioner (Amendment) Ordinance, 1966
The Smoking and Using of Tobacco Products (Control) Act, 2005
Safe Blood Transfusion Law, 2002
Iodine Deficiency Disease Prevention Law, 1989
The Breast-milk Substitutes (Regulation of Marketing) Ordinance, 1993
Transplantation of Human Organ Act, 2017
Institute of Child and Maternal Health Law, 2002

- | | |
|---|---|
| <ul style="list-style-type: none"> • Standardization and quality control of food, water, and other health-related commodities • Regulations for medical professions and standards • Administration of medical institutions and coordination and determination of standards in institutions for higher medical education or research • Control of drugs • Countersigning of medical bills of the persons holding non-profitable offices • Reimbursement of customs duty on gifts on non-consumable medical stores received from abroad • Preparation of schemes relating to family planning and their submission to the Prime Minister or the Cabinet through Planning Commission • Coordination and evaluation of all executive functions relating to projects and programs • Preparation and coordination of activities relating to family planning through other ministries/divisions and offices • Survey, monitoring, evaluation, and | <ul style="list-style-type: none"> • compilation of statistics of field activities in matters relating to family planning • Activities relating to maternity and child health centers • Administration of BCS (Health) • Administration of BCS (Family Planning) • Post-mortem examination of dead bodies • All matters relating to administration of morgues • Secretariat administration, including financial matters • Administration and control of subordinate offices and organizations under the Ministry • Liaison with international organizations and matters relating to treaties and agreements with other countries and world bodies relating to subjects allotted to the Ministry • All laws on subjects allotted to the Ministry • Inquiries and statistics on any of the subjects allotted to the Ministry • Fees in respect of any of the subjects allotted to this Ministry except fees taken in courts |
|---|---|

SECTION C

Communicable and Non-communicable Diseases

Chapter 10: | Communicable Disease Control in
Bangladesh

Chapter 11: | Non-communicable Diseases

Chapter 12: | Success Stories

COMMUNICABLE DISEASE CONTROL IN BANGLADESH

Mass awareness of preventive measures increased

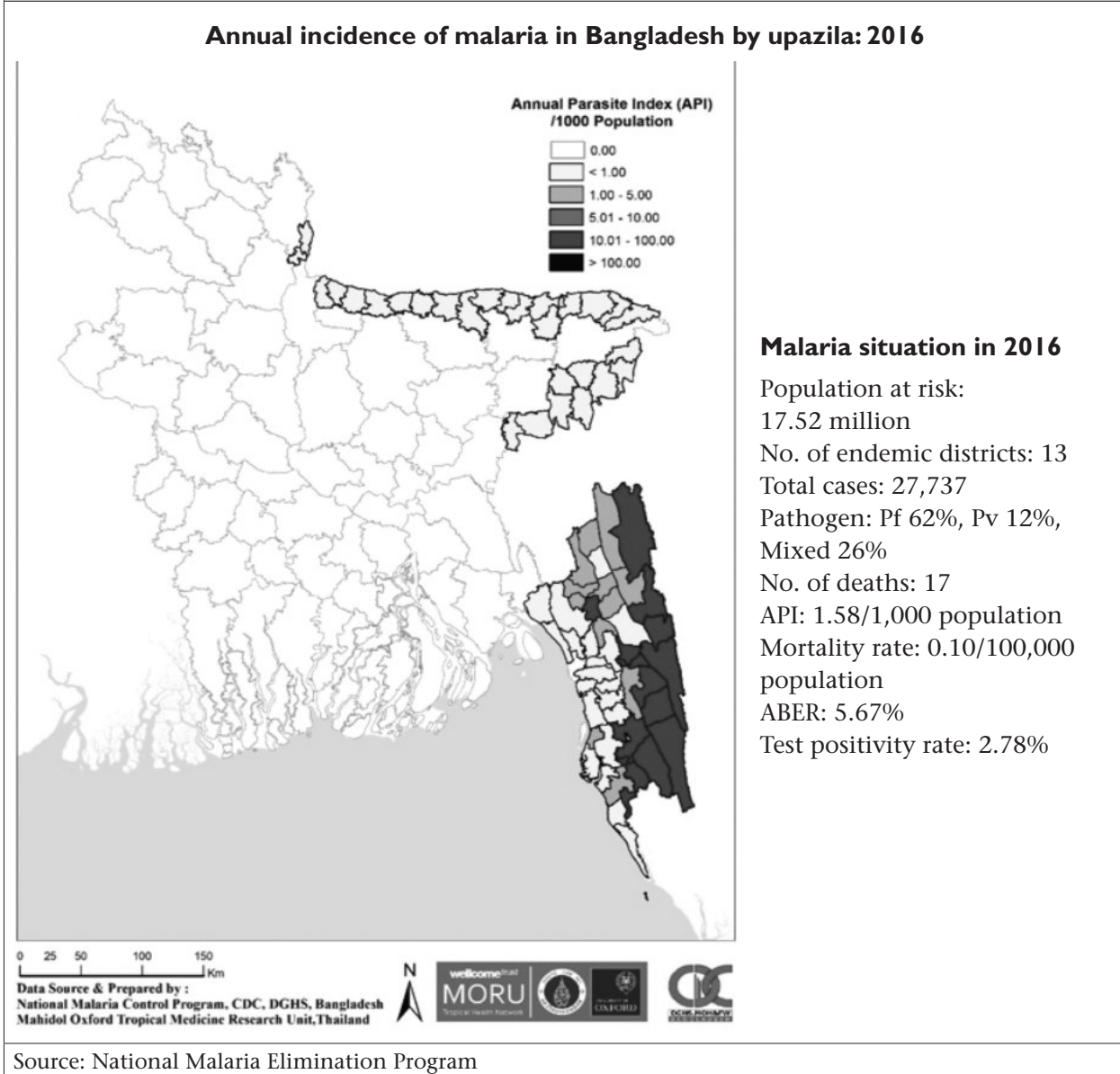
Early detection of infectious diseases, novel pathogens, and issues relating to antimicrobial resistance must be prioritized, escalating budget, capacity-building, strengthening infrastructure, providing logistic support, and other related measures.

The spread of communicable diseases is under good control due to comprehensive preventive measures and improved treatment protocols. This signals the policy-makers and implementing bodies to note the changing patterns and put special emphasis on emerging and re-emerging communicable diseases. Due attention to trans-boundary and international migration of people is needed to contain novel emerging diseases at the spots of origin. Core capacity development at the point of entries is to be considered a multisectoral action of national priority. Early detection of infectious diseases, novel pathogens, and issues relating to antimicrobial resistance must be prioritized, escalating budget, capacity-building, strengthening infrastructure, providing logistic support, and other related measures. Viral hepatitis, as an important public-health issue, needs due

attention of the policy-makers and the civil society. The role of publicity by the media is to be patronized for further awareness-building among mass people about the transmission mechanism of communicable diseases and prevention and treatment.

Malaria

As one of the major public-health problems in Bangladesh, malaria is endemic in 13 eastern and north-eastern border districts, with variable transmission potentials (high, moderate, and low). A total of 17.52 million people living in these areas are at risk of malaria. Map 10.1 shows the malaria-endemic areas; over 90% of the total cases are reported from three districts in the Chittagong Hill Tracts (Rangamati, Khagrachhari, and Bandarban) and the coastal district Cox's Bazar.

Map 10.1. Thirteen malaria-endemic districts of Bangladesh

The previously-known National Malaria Control Program (NMCP) has been renamed National Malaria Elimination Program in 2017. This new program is responsible for implementation of malaria control and elimination interventions under the Communicable Disease Control Unit of the DGHS. In the 1960s, Malaria Eradication Program was started under the Malaria Eradication Board in former East Pakistan. After the Independence of Bangladesh, the Eradication Program was merged with Primary Healthcare (PHC) and converted into Malaria

Control Program in 1977. Bangladesh adopted the Revised Malaria Control Strategies (RMCS) in the 1990s that led to the Roll Back Malaria (RBM) Initiative of WHO in 1998. Since 2007, the activities of the National Program have been strengthened and accelerated with funding support from Round 6 and 9 as well as the New Funding Model (NFM) grants of the Global Fund (GFATM). The BRAC-led 21-member NGO consortium, academic and research institutions, and some private sector organizations established a partnership aiming at elimination of malaria from the country.

Based on lessons learnt from successful implementation of malaria control efforts during the past decade and the recommendations of the recent program evaluation (3rd Joint Monitoring Mission), the program has adopted a strategy for elimination of malaria in phases. The National Strategic Plan for Malaria Elimination (NSP) 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 goal of the NSP 2017-2021 is “to ensure that Bangladesh is on track to eliminate malaria by 2030, contributing towards country development and the Sustainable Development Goals.” The following five strategic objectives have been set:

1. Reduce Annual Parasite Incidence in the 13 endemic districts 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
5. Prevent the emergence of ACT-resistant *Plasmodium falciparum* in Bangladesh.

Over the next five years, Bangladesh aims to eliminate malaria in ‘less endemic areas’ and accelerate control efforts in ‘more endemic areas’. In the post-2025 period, it is expected that all areas will either be targeted for elimination, or for prevention of re-emergence

so that, by 2030, Bangladesh will be malaria-free. Figure 10.1 illustrates the phase-wise targeted districts for elimination.

The key interventions of the National Malaria Elimination Program 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.

The following groups of people are considered high-risk population for malaria infection:

- ◇ *Jhum* cultivators, wood-cutters, forest-goers, and seasonal agricultural laborers
- ◇ Settlers, refugees, and mobile population
- ◇ Deployed personnel of the Defense Services and formal/informal workers in endemic areas
- ◇ Formal and informal cross-border migrant workers
- ◇ Travelers and pilgrims from non-endemic areas
- ◇ People residing in non-endemic areas for a long time and returning home in endemic areas
- ◇ Young children, particularly under-5 children and pregnant women

The monsoon (May–September) is the peak period for malaria transmission. Since the beginning of the accelerated efforts in program implementation in collaboration with NGO consortium, the national program has achieved a great success in terms of reducing morbidity and mortality, and a steady decline is noted

Figure 10.1. Projected number of districts for elimination of malaria by phase and year

Districts	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
3 ^a														
2 ^b														
8 ^c														
51 ^d														

Key:

Transmission reduction-API >1 per 1,000
Elimination-API <1 per 1,000
Prevention of reintroduction-API 0 per 1,000
Status to be determined

a. Three CHT districts: Khagrachhari, Rangamati, Bandarban

b. Chittagong and Cox's Bazar

c. Sherpur, Mymensingh, Netrakona, Kurigram, Sylhet, Habiganj, Sunamganj, Maulvibazar

d. Remaining districts

during the 2008–2013 period. However, during a regional upsurge in 2014, Bangladesh also fell victim, particularly for favorable meteorological conditions in the monsoon period that year. Due to that sudden upsurge, the numbers of both cases and deaths increased in 2014 compared to 2013, mostly in 3 hill districts. The program took various initiatives for managing the situation. As a result, both number of cases and deaths started to decrease from 2015. There are 67% and 93.5% reduction in morbidity and mortality respectively in 2016 compared to 2008.

Table 10.1 summarizes the year-wise epidemiological data (2000–2016) on malaria from the endemic districts.

With the exception of 2014, when the numbers of both cases and deaths increased due to a sudden upsurge, a significant progress in terms of decline in malaria cases and deaths has been achieved in the country. Figure 10.2 shows the

epidemiological trend of the malaria-related cases and deaths during 2007–2016.

Four most endemic districts (Bandarban, Khagrachhari, Rangamati, and Cox's Bazar) out of 13 malaria-endemic districts have reported ~98% of total cases. Ten out of total 17 death cases were reported to occur among the populations of those districts. The vast majority of malaria cases are caused by a single pathogen *Plasmodium falciparum*, accounting for 89% of the total incidence.

Figure 10.3 gives an idea about the share of total malaria burden by endemic districts in 2016.

Malaria is becoming an increasingly focal disease in Bangladesh. In 2016, just 3 of the 13 endemic districts had an Annual Parasite Incidence (API) greater than 1 compared to all 13 in 2008. Three districts (Khagrachhari, Rangamati, and Bandarban) of the Chittagong

Table 10.1. Summary of year-wise epidemiological data (2000–2016) from the malaria-endemic districts

Year	Positive cases		<i>P. falciparum</i>		<i>P. vivax</i>		Death	
	No.	Per 1,000 population	No.	%	No.	%	No.	Per 1,000 population
2000	54,223	5.63	39,272	72.4	14,951	27.6	478	0.049
2001	54,216	5.55	39,274	72.4	14,942	27.6	490	0.049
2002	62,269	6.23	46,418	74.5	15,851	25.5	588	0.058
2003	54,654	5.40	41,356	75.7	13,298	24.3	577	0.056
2004	58,894	5.67	46,402	78.8	12,492	21.2	535	0.052
2005	48,121	4.56	37,679	78.3	10,442	21.7	501	0.047
2006	32,857	3.06	24,828	75.6	8,029	24.4	307	0.029
2007	59,857	5.46	46,791	78.2	13,066	21.8	228	0.021
2008	84,690	7.73	70,281	83.0	14,409	17.0	154	0.014
2009	63,873	5.83	57,020	89.3	6,853	10.7	47	0.004
2010	55,873	5.10	52,049	93.2	3,824	6.8	37	0.003
2011	51,773	3.91	49,194	95.0	2,579	5.0	36	0.003
2012	29,518	2.23	27,819	94.2	1,699	5.8	11	0.001
2013	26,891	2.03	25,908	96.3	983	5.8	15	0.001
2014	57,480	4.34	54,132	94.2	3,348	5.8	45	0.003
2015	39,719	3.00	35,708	89.9	4,011	10.1	9	0.0007
2016	27,737	1.58	24,431	88.1	3,306	11.9	17	0.0009

Hill Tracts in the southeast together accounted for ~93% of confirmed malaria cases detected in the country's 13 endemic districts. The population of these three districts constitutes only around 12% of the total population at risk. The incidence rates in 13 malaria-endemic districts in 2016 are illustrated in Figure 10.4.

Dengue

Dengue created a new threat in recent times in Bangladesh due to re-emergence of the virus. Dengue is a very dreadful disease. The country has experienced this viral infection in the most horrific manner in 2000 after an earlier outbreak as Dhaka Fever in the 1960s. The re-emergence resulted in a huge number of cases, along with morbidity and mortality of public-health concern. It is not yet possible to address the dengue situation in the country

as a separate entity. So far, only sporadic cases of dengue were diagnosed in Bangladesh through small-scale surveys that actually failed to unearth the real situation. In 1996-1997, dengue infections were confirmed in 13.7% of 255 febrile patients screened at Chittagong Medical College Hospital. The first epidemic of dengue hemorrhagic fever occurred in mid-2000 when 5,551 dengue infections were reported from Dhaka, Chittagong, and Khulna cities, occurring mainly among adults. Among the reported cases, 4,385 (62.4%) were dengue fever (DF) infections, and 1,186 (37.6%) cases were dengue hemorrhagic fever (DHF). The case-fatality rate (CFR) was 1.7%, with 93 reported deaths. *Aedes aegypti* was identified as the main vector responsible for the epidemic, and *Aedes albopictus* was identified as a potential vector in Chittagong. According to

Figure 10.2. Epidemiological trend of malaria cases and deaths during 2007-2016

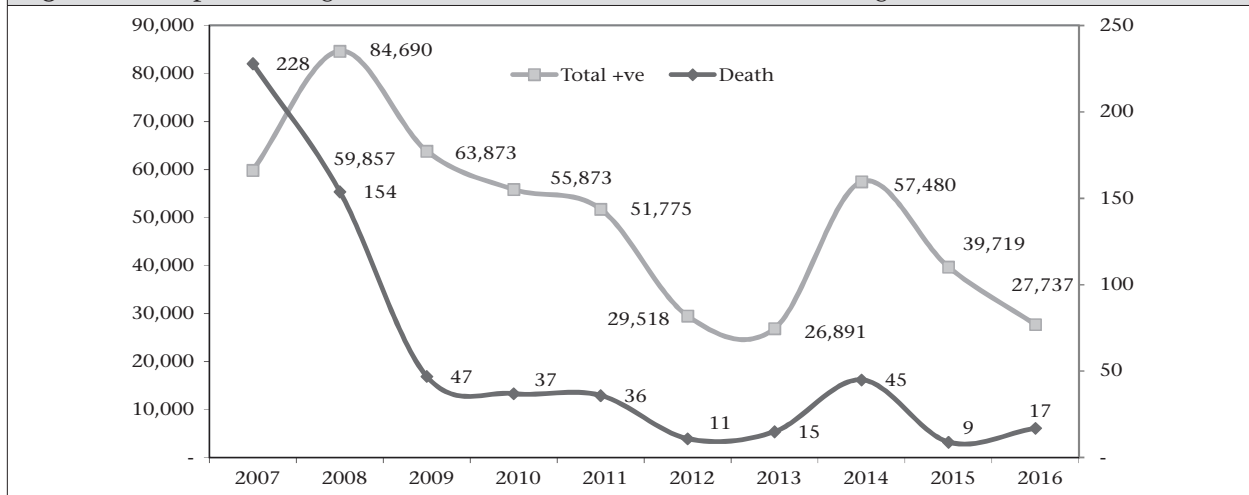


Figure 10.3. Distribution of malaria burden among 13 endemic districts in 2016

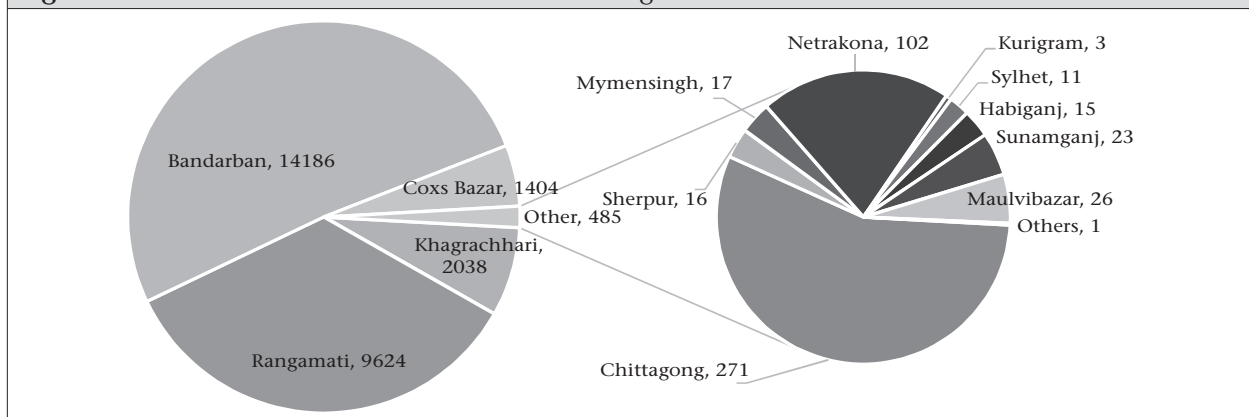
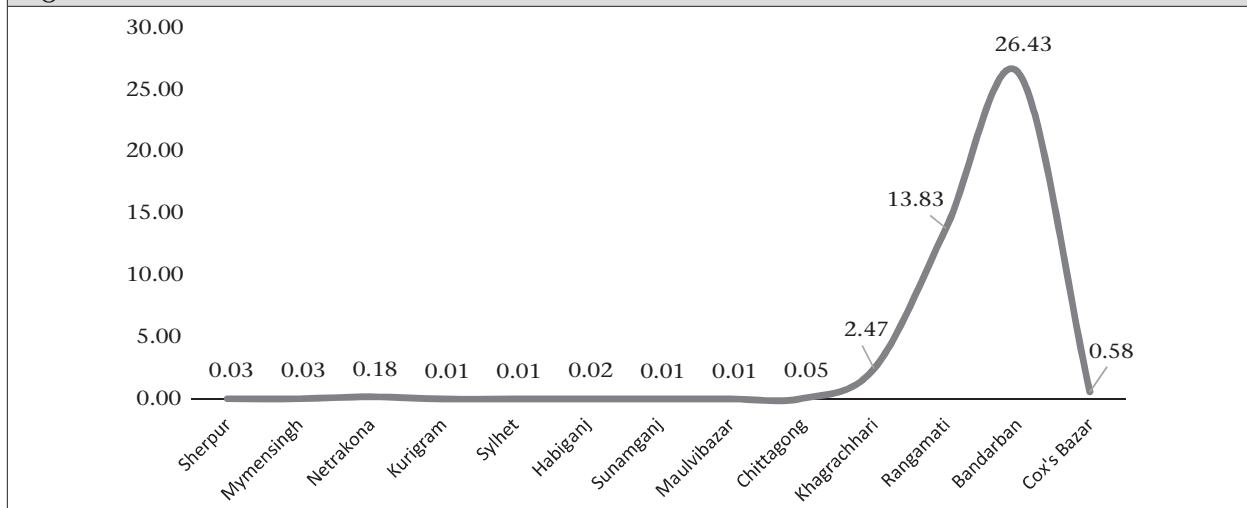


Figure 10.4. Malaria incidence in 13 endemic districts in 2016

WHO, the worst outbreak occurred in 2002, with 6,232 cases and 58 deaths. The prevalent serotypes of dengue until 2000 in Bangladesh were: DENV1, DENV2, and DENV3, with the highest number of reported cases attributed to DENV3. A similar situation can be seen in other countries, such as India and Sri Lanka, where DENV3 has been reported most of the time in DF/DHF-related illnesses. Over the last 10-15 years, dengue fever and dengue hemorrhagic fever have become the leading causes of hospitalization and deaths among both children and adults in South-East Asian regions. Diarrheal diseases and acute respiratory infections are the other major causes of hospitalization of children.

Over the last 10-15 years, dengue fever and dengue hemorrhagic fever have become the leading causes of hospitalization and deaths among both children and adults in South-East Asian regions.

The dengue cases are reported based upon information collected from the Control Room at the DGHS. The source of information is mainly the private sector: private clinics, and some selected urban NGOs. Moreover, the information sources at present are based in Dhaka city. Information from other parts of the country is lacking. So, it is very difficult to come to a definitive conclusion regarding the program perspective. Still, some assessment can be possible by analyzing the currently-available information. Figure 10.5 shows the distribution of dengue cases and deaths in Dhaka by year from 2000 to 2017.

Figure 10.6 identifies the peak season of dengue. More than 82% of the cases in 2016 were reported during the months of July to October and 25% of the total cases were reported in September alone.

Chikungunya

As a dengue-like disease, chikungunya fever is emerging alarmingly in the country in recent years. Chikungunya is also transmitted by mosquito-bites. In 2011 (August to October), outbreaks of suspected chikungunya fever were reported to occur in Dohar upazila of Dhaka district and Shibganj upazila of Chapainowabganj district.

The largest outbreak of chikungunya was reported in 2017. Most of the cases were

Figure 10.5. Distribution of dengue cases and deaths in Dhaka by year (2000-2017)

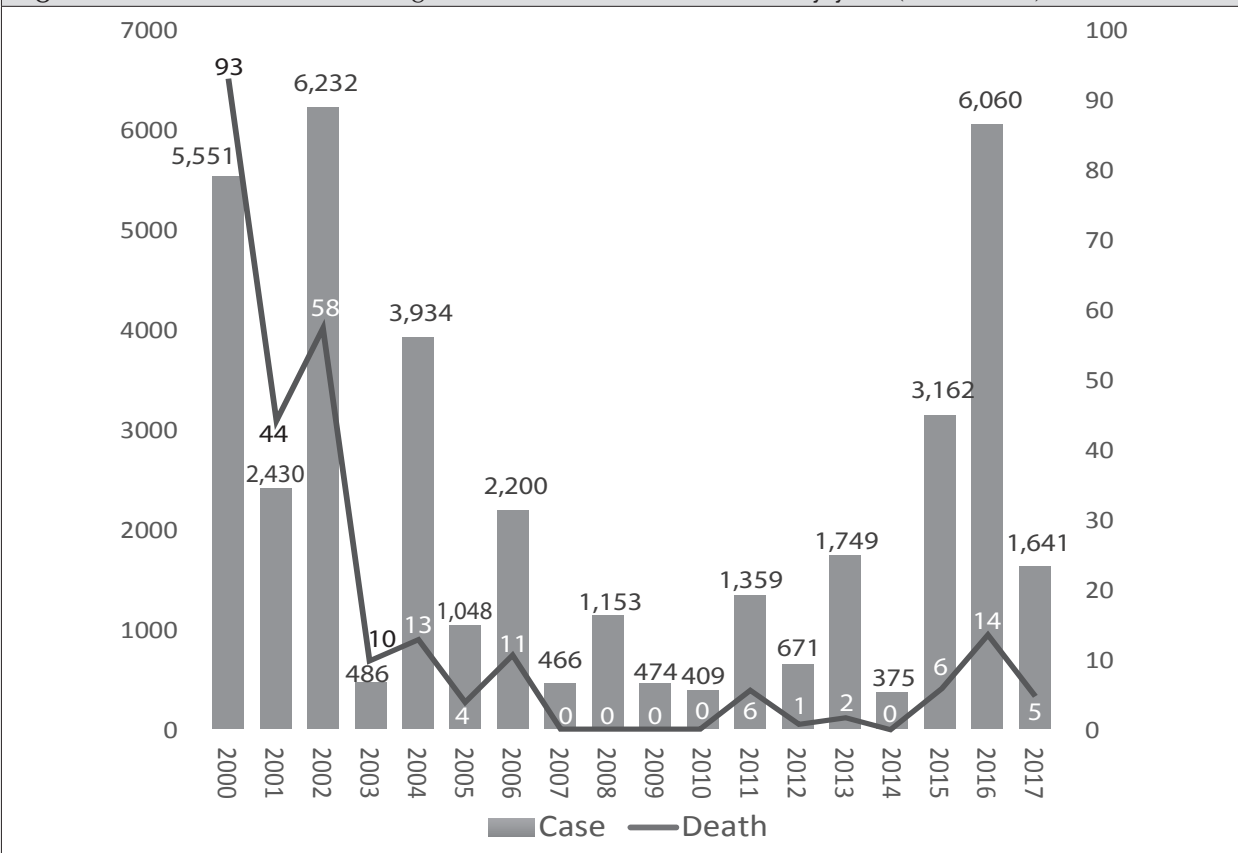
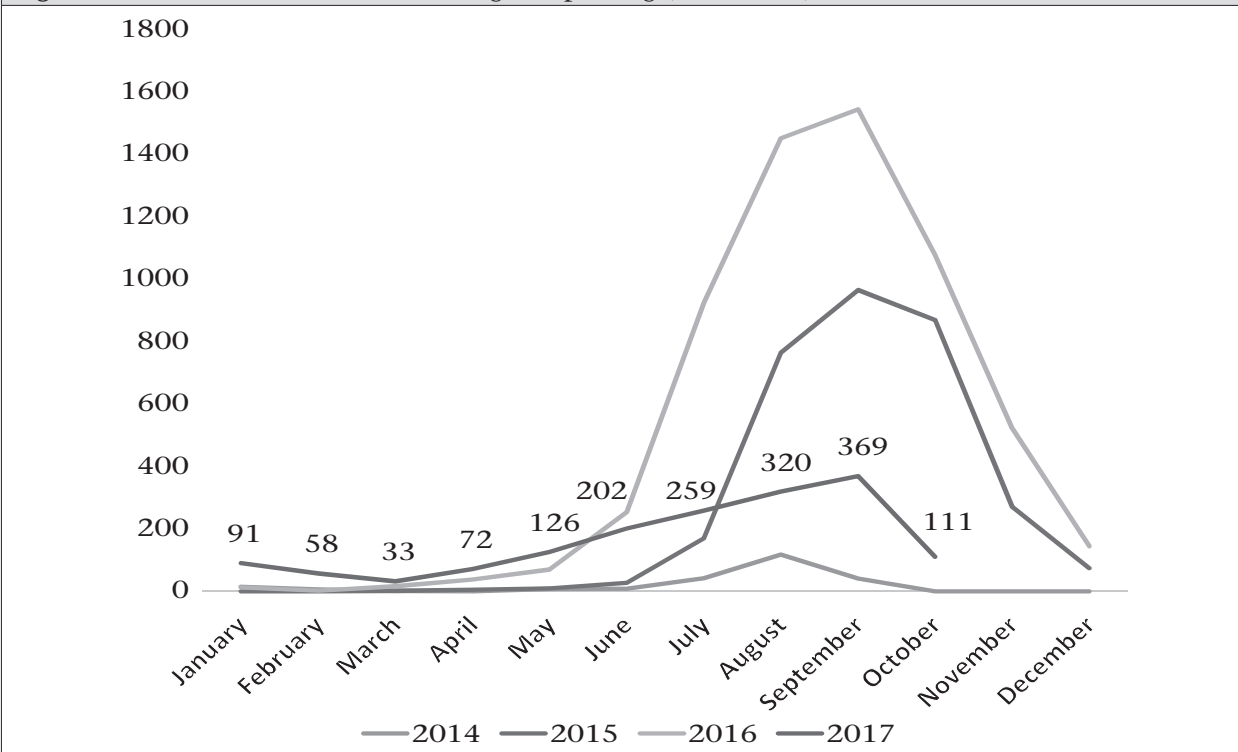


Figure 10.6. Year and month-wise dengue reporting (2014-2017)



reported to occur in Dhaka city. To raise mass awareness aiming at prevention of spread of the disease, a campaign was held on 17 June 2017. Communicable Disease Control Unit of the DGHS organized the event with the help of Dhaka City Corporation North and South, IEDCR, and voluntary social media group Platform. In the event, about 12 thousand medical students, para-medical students, and nursing students participated from different institutions in 205 groups and covered 750 areas of 92 wards of Dhaka City Corporation North and South. They demonstrated the identification of *Aedes* mosquito and destroying process of their breeding places. *Aedes* mosquito is the vector for both chikungunya and dengue viruses. The teams also distributed awareness leaflets among people and collected data from households on suspected chikungunya cases. From 1,480 households, 2,956 suspected cases with chikungunya infection were identified. The event was covered by all print and electronic media that created mass awareness, which was helpful in preventing more spread of the disease.

The National Chikungunya Control Center was set up at the IEDCR. From 9 April to 28 September 2017, the IEDCR identified 1,003 chikungunya patients through blood test (RT-PCR).

Figure 10.7 shows the number of laboratory-confirmed cases of chikungunya-infected patients by week.

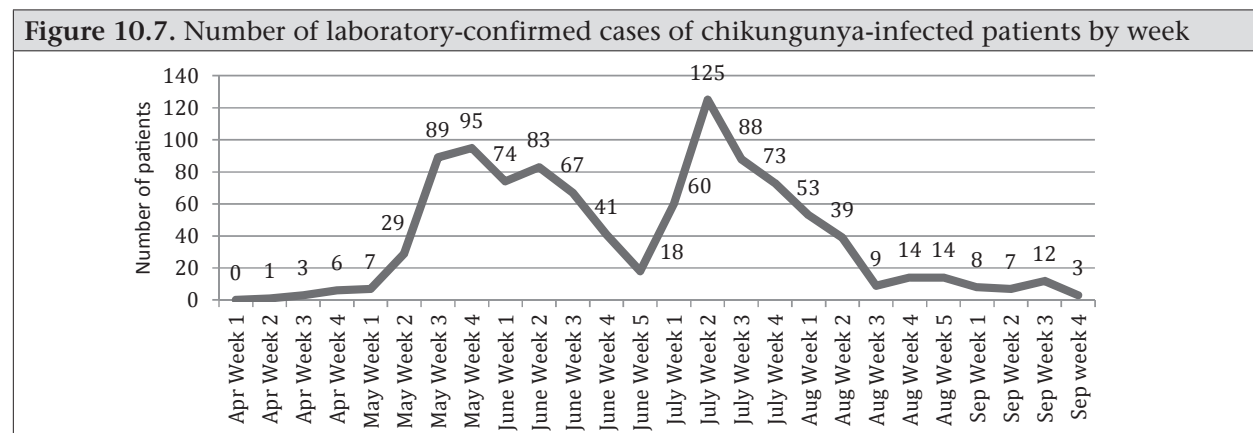


Table 10.2 Number of patients admitted in different hospitals for suspected chikungunya and post-chikungunya arthralgia

Name of hospital	Number of patients
Dhaka Medical College Hospital	4864
Mitford Hospital	2348
Shaheed Suhrawardy Medical College Hospital	2558
Shaheed Mansur Ali Medical College Hospital	9
Mugda Medical College Hospital	131
Dhaka Shishu Hospital	93
United Hospital	522
Apollo Hospital	197
Delta Hospital	255
Other private hospitals/physicians	547
IEDCR	2290
Total	13814

Table 10.2 illustrates the number of patients receiving treatment for suspected chikungunya and post-chikungunya arthralgia in different hospitals of Dhaka city (from 12 May to 28 September 2017 up to 3:00 pm).

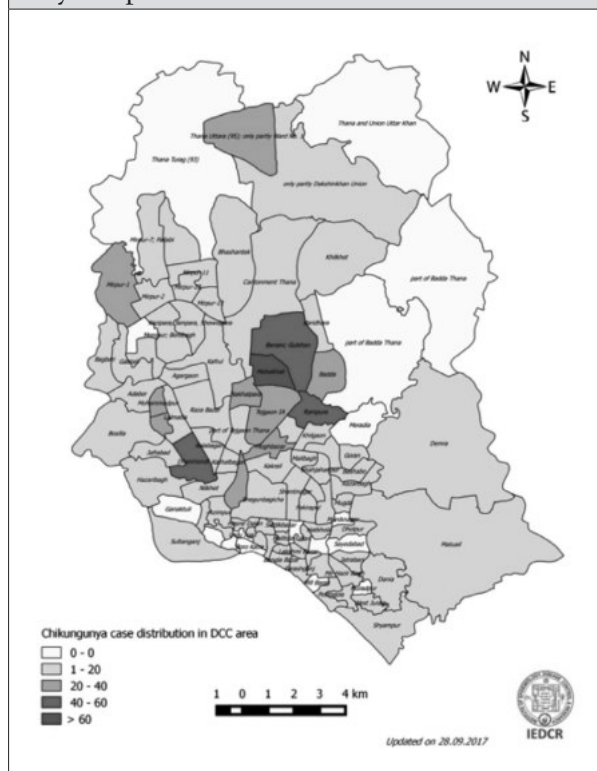
Civil surgeons of different districts and medical college hospitals sent their data to IEDCR about the number of patients.

Definition of suspected case: If any person comes to a physician, with complaints of fever and joint pain or swelling, is considered

a suspected case of chikungunya. So far, except Dhaka City Corporation, information on 185 patients was sent to IEDCR from 17 districts and, of them, 52 were identified as suspected cases. Most of them had history

sexual intercourse. Zika virus disease has a similar epidemiology, clinical presentation, and transmission cycle in cities and towns as chikungunya and dengue, although the illness is generally milder.

Figure 10.8. Distribution of laboratory-confirmed chikungunya cases in the Dhaka City Corporation area



Symptoms of Zika virus disease include mild fever, skin rash, conjunctivitis, muscle and joint pain, which normally last for 2 to 7 days. There is no specific treatment but symptoms are normally mild and can be treated with common medicines for fever, rest, and drinking plenty of fluids.

The current Zika virus outbreak and its association with an increase in microcephaly, other congenital malformations and Guillain-Barré Syndrome (GBS) have caused increasing alarm in countries across the world, particularly in the Americas. Brazil announced a national public health emergency in November 2015.

Zika virus and its complications, such as microcephaly and Guillain-Barré Syndrome represent a new type of public health threat with long-term consequences for families, communities, and countries. The experts agreed that a causal relationship between Zika infection during pregnancy and microcephaly is strongly suspected, though not yet scientifically proven. The International Health Regulations (IHR 2005) Emergency Committee met on 1 February 2016, and WHO declared the recent clusters of microcephaly and other neurological disorders in Brazil (following a similar cluster in French Polynesia in 2014) to be a Public Health Emergency of International Concern. In the absence of explanation for the clusters of microcephaly and other neurological disorders, the IHR Emergency Committee recommended enhanced surveillance and research and aggressive measures to reduce infection with Zika virus, particularly among pregnant women and women of childbearing age.

of traveling to their respective districts from Dhaka and were suffering from post-chikungunya arthritis.

Figure 10.8 shows distribution of the laboratory-confirmed chikungunya cases in Dhaka City Corporation area.

Zika virus and preparedness

Zika virus is mostly transmitted through the bite of an infected mosquito, primarily *Aedes aegypti*—the same vector that transmits chikungunya and dengue viruses. *Aedes albopictus* can also transmit the disease; further studies are in progress to better understand its role in the transmission of Zika virus. This virus may also be transmitted through

At present, the most important protective measures are the control of mosquito population and the prevention of mosquito-bites in at-risk individuals, especially pregnant women.

The recent outbreaks in Singapore, Malaysia, and Thailand raised a concern that the disease can spread in the region. Moreover, experts predict that Bangladesh is one of the high-risk countries for Zika virus infection. Although Zika virus causes a mild illness, its potential to cause microcephaly is a concern, and the country capacity needs to be strengthened.

Planning and preparation of MOHFW

1. National strategy developed
2. Development of clinical management guideline for Zika virus infection with microcephaly and GBS
3. Develop, strengthen, and implement integrated surveillance systems at all levels for Zika disease, its complications, other arboviral diseases and their vectors
4. Awareness among gynecologists and pediatricians
5. Consultation with gynecologists and pediatricians, especially on reporting of the microcephaly cases
6. Consultation with chief health officers/ health departments of municipalities regarding mosquito control/vector control; high-level motivation and support are needed to prevent the adverse health outcomes associated with Zika virus infection through integrated vector management
7. Surge capacity assessment and actions necessary to strengthen the capacity
8. Enhance laboratory capacity and SOPs
9. Training of the Rapid Response Team, including consultant gynecologists and pediatricians
10. Training of physicians of the big private hospitals/clinics
11. Raise awareness among general public and preparation of mass media materials
12. Prevent the adverse health outcomes associated with Zika virus infection through risk communication and community engagement

Filariasis

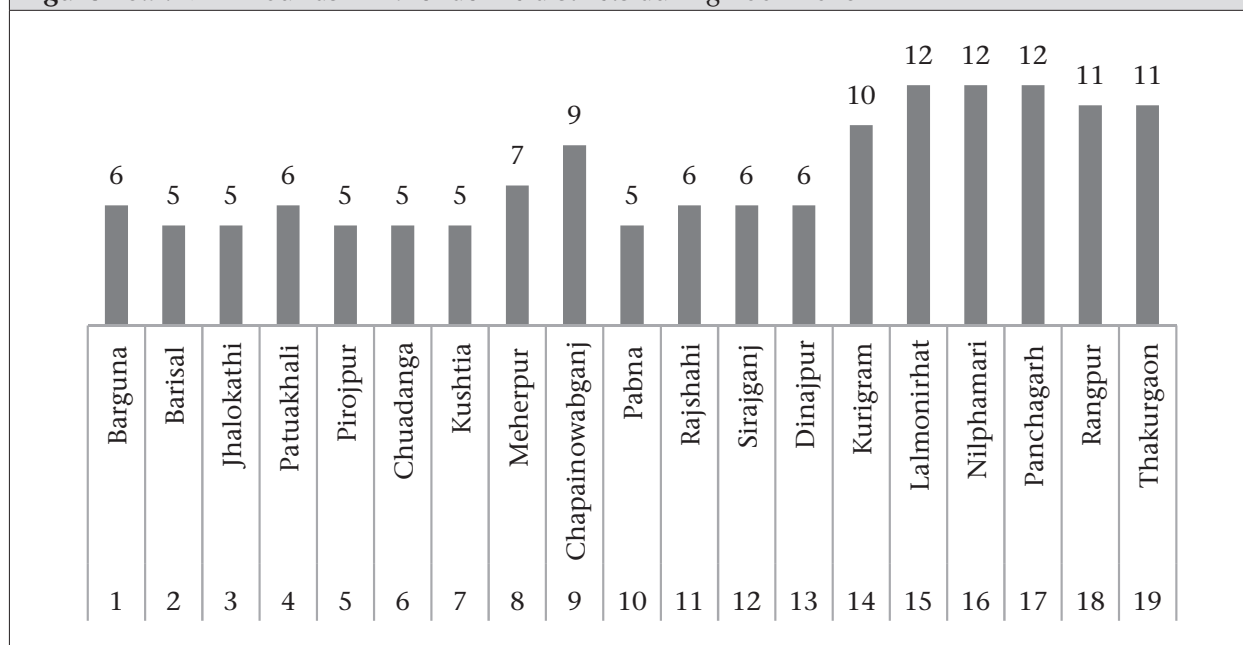
Wuchereria bancrofti is the most common parasite and *Culex* mosquitoes are the main vectors for transmission of lymphatic filariasis (LF) in Bangladesh. It is a vectorborne parasitic disease caused by tissue nematodes. It is one of the neglected tropical diseases (NTDs) in the country. The consequences of filarial infection are many. A large number of afflicted persons exhibit physical and mental disabilities, an impaired ability to work, and a compromised quality of life. These problems arise not only from the disease process but also from social stigma directed towards the afflicted persons. All of these problems, moreover, have a cumulative adverse effect at all levels—individual, household, community, and the nation as a whole.

Lymphatic Filariasis is a leading cause of permanent and long-term disability worldwide and, hence, WHO targeted it as one of the seven communicable diseases for elimination by the year 2020. The target of Bangladesh was to eliminate the disease by 2015 through mass drug administration (MDA) and morbidity control. Out of 64 districts of the country, it is endemic in 34 (based on ICT survey); 19 out of 34 districts were eligible for mass drug administration during 2001-2004.

MDA was launched in November 2001 (Round I) at Panchagarh district and, thereafter, it was scaled up in 19 districts by 2008 following the baseline survey of the area. The 19 endemic districts are: Panchagarh, Thakurgaon, Nilphamari, Kurigram, Rangpur, Lalmonirhat, Dinajpur, Rajshahi, Chapainowabganj, Sirajganj, Pabna, Meherpur, Kushtia, Chuadanga, Barisal, Patuakhali, Jhalokathi, Pirojpur, and Barguna. Figure 10.9 shows the MDA rounds in the endemic districts during 2001-2015.

Bangladesh has been able to achieve the target of “Stop MDA” as a part of elimination of the disease during the 3rd sector-wide program in all the 19 endemic districts by annual mass drug administration and in other 15 districts

Figure 10.9. MDA rounds in 19 endemic districts during 2001-2015



by surveillance only. According to the WHO protocol, at least five years' surveillance after "Stop MDA" with no sign of transmission or sign limited to cut-off value is required to declare elimination. The program has started to concentrate its attention on morbidity control among those who have already developed deformity and disfigurement. Planning has been chalked out to provide morbidity care through community clinics in those areas.

Goal, objectives, and strategies

Goal of the program is elimination of filariasis by 2020, and the objectives are to reduce microfilaria prevalence to <1% and to give relief to the patients of lymphedema caused by filariasis.

Strategies adopted to achieve this goal and objectives are: mass drug administration (MDA) among at-risk population once a year for successive five years through door-to-door household registration, except for pregnant women, children aged < 2 years, and severely ill patients; and alleviation of sufferings of lymphedema patients by community-based morbidity control.

Table 10.3 shows data of MDA rounds from 2001 through 2015.

TAS

Transmission Assessment Survey (TAS) is the WHO-recommended survey protocol to assess the status of elimination to stop MDA. Based on microfilaria (Mf) survey report, Bangladesh's Elimination of Lymphatic Filariasis (ELF) Program conducted TAS in 19 districts where MDA started. The preconditions for conducting TAS are: completion of at least five to six successive rounds of MDA, Mf result <1%, and MDA coverage >65%. Results of TAS indicate that Bangladesh has achieved preliminary elimination goal in 19 districts. As per WHO protocol, MDA has been stopped in 19 districts. Figure 10.10 shows the TAS status in 19 districts.

The outstanding question for the Bangladesh's LF Program was how to assess the 15 endemic districts that were found to have low prevalence (<1%) and not eligible for MDA. Night blood microfilaria and community clinical surveys undertaken in 2008-2010 in selected areas of these districts found little or no evidence of infection and disease, such as

Table 10.3. Year-wise MDA round (2001–2015) with coverage

Year	District/ Implementation unit (IU)	Total population (Million)	Coverage (%) reported by civil surgeons	Coverage (%) observed in survey	Actual coverage (%) among the eligible
2001	1	0.81	95.5	93.0	ND
2002	4	5.18	93.6	83.2	87.3
2003	6	8.73	93.3	77.9	81.9
2004	10	11.75	98.6	ND	ND
2005	12	20.16	90.3	78.0	82.2
2006	13	23.92	92.2	78.2	82.2
2007	17	31.0	91.5	82.4	84.3
2008	20	42.0	90.53	79.38	83.06
2009	19	35.0	96.87	83.33	85.76
2010	19	35.0	92.47	60.23	62.98
2011	14	29.70	97.14	92.35	94.90
2012	09	16.67	98.11	89.76	92.78
2013	04	8.66	98.86	88.9	93.26
2014	01	3.01	81.72	69.5	90.33
2015	01	3.40	79.83	67.3	93.93

ND=Not done

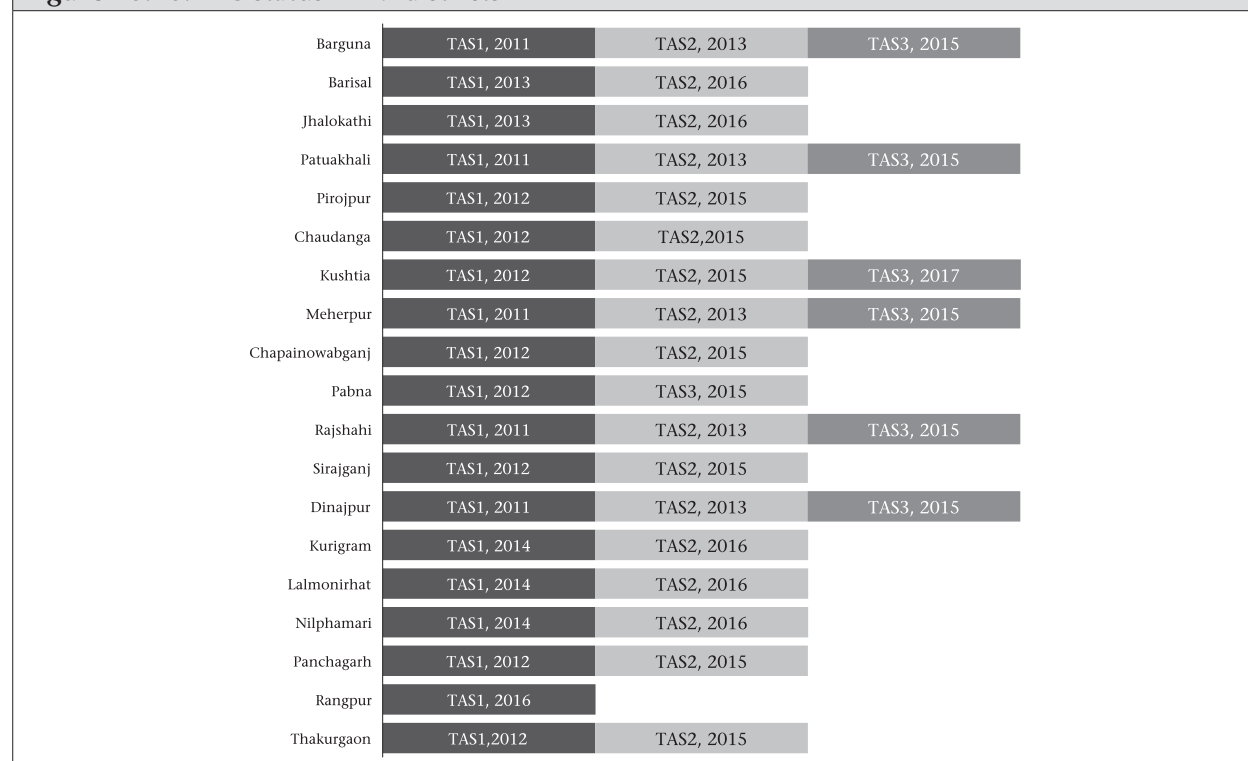
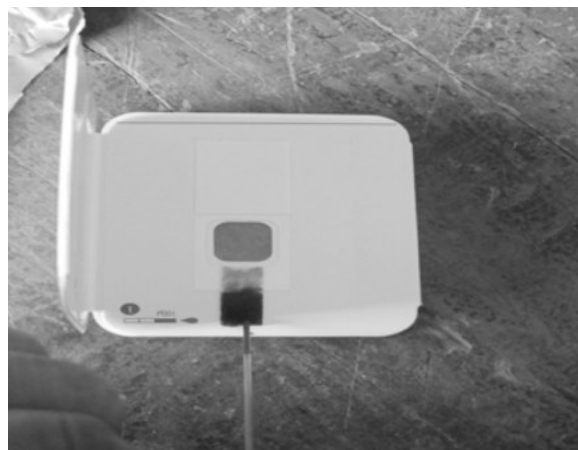
Figure 10.10. TAS status in 19 districts

Figure 10.11. Blood collection for TAS: ICT test



lymphedema and hydrocele. The TAS method was used as the primary assessment tool in surveys done in 2014-2015 according WHO recommendations. The results of the TAS conducted to date show promising signs that the National LF Program will be able to ‘shrink the LF map’ by approximately 38 million people and can start move one step closer to the elimination goal, with an increased focus on the new priorities of surveillance and morbidity management. It will be important to follow up the children who tested ICT-positive to determine if there is some focality of transmission in these areas.

Morbidity management and disability prevention

In the 19 highly-endemic districts, 8,145 staff members of community clinic (CC) were trained to search for LF cases by visiting each household in their catchment areas during 2013-2016 and registering all cases. In the 15 low-endemic districts, a team of 10 trained field assistants conducted active case finding, utilizing health facility records, health workers, and community informants to identify and medically verify the cases, with cases who reported via SMS to mHealth database. The recorded data included general demographic parameters (location, address of CC, patient’s name, address, age, and gender), and clinical information (lymphedema, hydrocele, severity, acute dermato-lymphangiadenitis (ADLAs)).

In the 19 highly-endemic districts, a total of 43,678 clinical cases were identified; 30,616 limb lymphedema (70.1% of total cases, of whom 55.3% were female), 12,824 cases of hydrocele (29.4%), and 238 breast/female genital swelling (0.5%). Rangpur district reported the highest number (lymphedema 8,545; hydrocele 2,654).

Some actions and achievements are highlighted below:

- Reportedly 8,500 hydrocele surgeries had been done during 2004-2012 by the program
- At present, the estimated number of hydrocele sufferers in 19 districts is approximately 12,824
- In 2016, one hundred forty-three hydrocele surgeries have been done in Panchagarh district
- In 2017, the program has targeted 575 hydrocele surgeries to be done in Panchagarh and Nilphamari districts

Figure 10.12 shows lymphedema patients, with district-wise proportions of males and females.

Soil-transmitted helminthes (STH) control: a nationwide deworming program

Soil-transmitted helminthes (STH) control is an important component of the Filariasis

District	Lymphedema	Hydrocele	Other*	Total patients
Dinajpur	2,044	1,021	2	3,067
Kurigram	1,239	699	20	1,958
Lalmonirhat	5,383	1,937	-	7,320
Nilphamari	5,475	1,715	50	7,240
Panchagarh	1,341	1,634	5	2,980
Rangpur	8,532	2,654	13	11,199
Thakurgaon	2,767	2,001	50	4,818
Barguna	542	466	15	1,023
Barisal	427	50	1	478
Jhalokathi	592	49	-	641
Patuakhali	423	202	11	636
Pirojpur	314	31	6	351
Chuadanga	53	5	1	59
Kushtia	145	7	7	159
Meherpur	0	0	0	0
Chapainowabganj	693	201	18	912
Pabna	229	67	20	316
Rajshahi	209	26	12	247
Sirajganj	208	59	7	274
Total	30,616	12,824	238	43,678

*Others includes breast lymphedema and female genital swelling

Figure 10.12. Lymphedema patients showing district-wise proportions of males and females

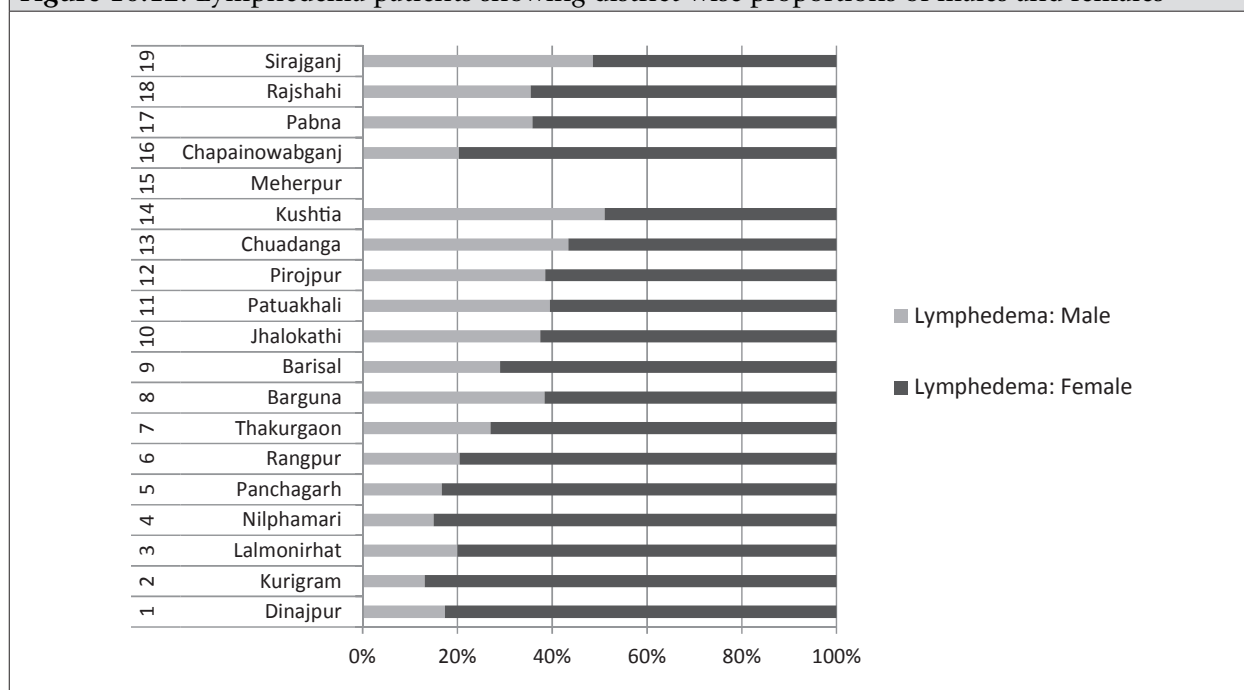
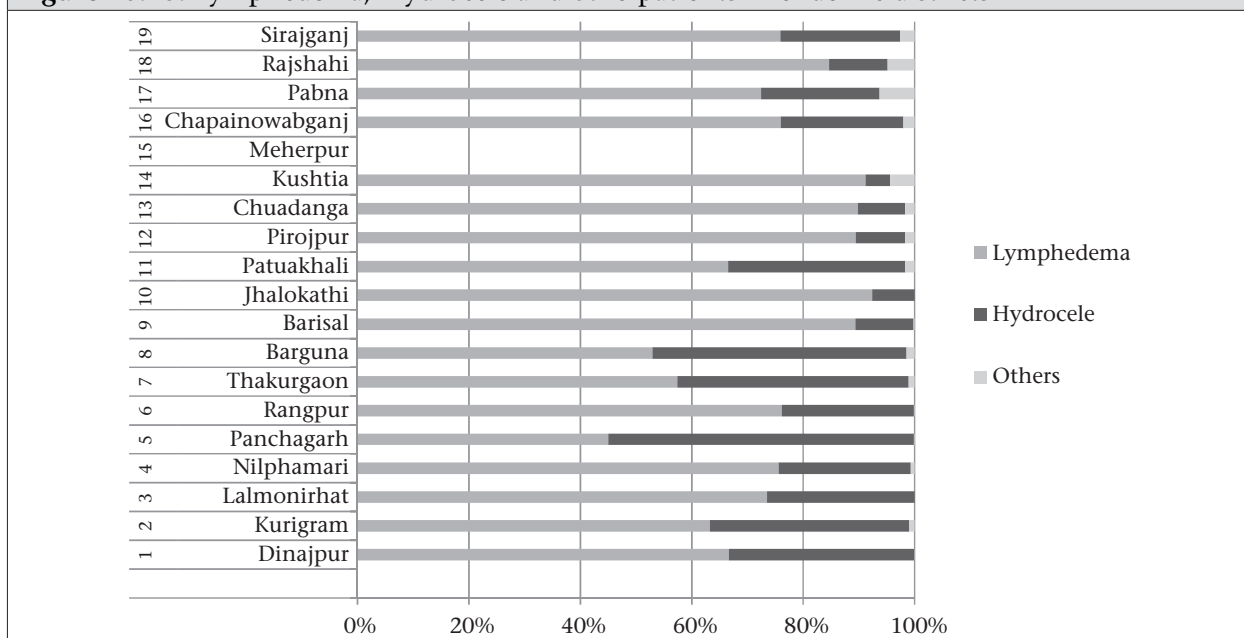


Figure 10.13. Lymphedema, hydrocele and other patients in endemic districts



*Others include breast lymphedema and female genital swelling

Figure 10.14. School students as 'Little Doctors'



Elimination Program of the Communicable Disease Control Unit of the DGHS. The STH Control Program has been integrated with Filariasis Elimination Program, with the aim to minimize its operation cost.

Main tasks of the Little Doctors Team

In 2005, it was started in 3 districts, in 16 districts till 2006 to June 2007, in 24 districts till May 2008 and, finally, the program was expanded to cover all 64 districts by November 2008.

The nationwide school-based deworming program has been started in 2008, with an aim of regular deworming among 75-100% school-age children (World Health Assembly Resolution 54.19 of 2001). The first National Deworming Day was observed on 1 November 2008. Subsequently, the program was implemented every six months—April and October. From 2010, deworming activities are conducted for a week, instead of the National Deworming Day; the age-group of 5 years (baby class) is included as the target population. Single-dose Albendazole (400 mg) has been replaced with Mebendazole (500 mg).

The 'Little Doctor' program (involving school students) is an initiative under STH Control Program. It has been introduced nationwide through all primary-level institutions for peer-education in STH control and developing health-related wellbeing, followed by regular and proper hygiene practices. There are three 'Little Doctors' (selected students) in each team, and a team is assigned for each class or section of the institutions. It is estimated that there will be a total of 1,650,000 'Little Doctors' each year from about 120,000 primary-level institutions of the country.

The 'Little Doctors' administer the deworming tablets, with the help of teachers as guides. About 26 million children who are studying in Class I-V, or are 5-12 years old are targeted. All types of schools, including government, non-government, NGO, private, English medium ones, madrasas, etc., are included in the program.

Goal of the school-based deworming program

To control intestinal helminthes among school-aged children of 5-12 years.

Objective

- To reach 75% -100% school-aged children under de-worming program (according to World Health Assembly Resolution 54.19)
- To educate health and hygiene practices among school children

Goal 2017-2021

- Eliminate intestinal helminthes among children (reducing moderate to heavy intensity to <1%)
- Provide health messages to the students in a assigned class twice a week
- Take active part in deworming week to deworm children of the same age-group
- Take active part in health check-up (height, weight, and eye sight detection) of students
- Take part in celebrating health-related days, like 'World Health Day', 'Handwashing Day', etc.

Preparation is underway to scale up the deworming program to all secondary-level institutions of the country, including madrasas to reach the targeted children up to class X or age up to 16 years. Formal preparatory meetings have been held with the Directorate of Secondary and Higher Education, and written commitment has been given by the J&J to donate additional 10 million tablets (Mebendazole 500 mg) in each round to cover the targeted group of 12-16 years old children.

Achievements

Every primary-level institutions in the country is covered under the school-based deworming program to deworm all school-aged children of 5-12 years twice a year (April and October). Table 10.5 shows the reports of treatment coverage as sent by the civil surgeons' offices of the concerned districts.

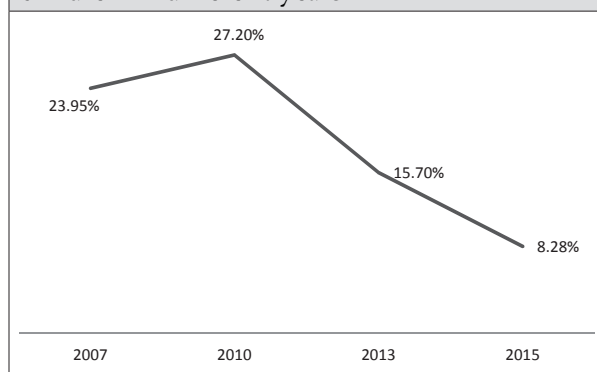
Overall, the STH prevalence among school children has been reduced to 8.28%, according to a survey conducted by the STH Control Program in 2015. Similar findings are also observed in the study by other organizations. Figure 10.14 shows the trend in the infection rates based on surveys done in the 2007, 2010, 2013, and 2015-2016. If we strengthen the hygiene status of the schools and maintain this accordingly, the country will be able to control the soil-transmitted helminthes in near future.

Kala-azar

Mostly affecting the poor and marginalized rural population, kala-azar (KA) or visceral leishmaniasis (VL) is a neglected tropical disease. It is prevalent in about 90 countries and threatens 350 million people, especially in South Asian Region and East Africa. Approximately 0.2 to 0.4 million visceral leishmaniasis cases occur worldwide and, among them, 90% of the disease burden is borne by 6 countries: India, Bangladesh, Sudan, South Sudan, Brazil, and Ethiopia. It is estimated that around 147 million people are

Table 10.5. Reported coverage of school-based deworming program (2008–2016)

Year	Round	No. of districts covered	No. of children		Reported coverage (%)
			Targeted	Treated	
2008	November	64	15,743,159	15,482,778	94
2009	May	64	19,303,404	19,101,496	98
	November	64	19,303,404	18,782,212	97
2010	May	64	19,837,612	19,440,860	98
	November	64	2,19,71,611	2,17,45,757	98.97
2011	May	64	2,20,70,512	2,17,35,040	98.48
	November	64	2,20,82,923	2,19,92,383	99.59
2012	May	64	2,22,63,213	2,20,40,581	99
	November	64	2,22,63,192	2,20,38,334	98.99
2013	April	64	2,49,86,323	2,47,99,113	99.25
	October	64	2,50,89,864	2,48,98,332	99.23
2014	April	64	2,48,86,323	2,46,98,576	99.25
	October	64	2,50,90,960	2,49,93,205	99.61
2015	April	64	3,12,81,837	2,67,04,597	85.37
	October	64	3,13,46,057	2,66,00,439	84.86
2016	April	64	3,12,81,837	2,63,96,187	84.38
	October	64	3,12,81,837	2,68,34,605	85.78

Figure 10.15. STH prevalence among school children in different years

at risk in three countries: Bangladesh, India, and Nepal. Around 31 million people are at risk in Bangladesh. The people at risk are residing in 26 districts of Bangladesh where kala-azar is endemic. One hundred upazilas are mostly endemic in these 26 districts.

The National Kala-azar Elimination Program (NKEP) in Bangladesh has set the target of elimination of kala-azar by 2017. The goal is to reduce the annual incidence of kala-azar to less than 1 patient per 10,000 population.

The strategic objectives are: (i) early diagnosis and complete treatment, (ii) integrated vector management, (iii) effective disease surveillance, (iv) operational research, and (v) social mobilization and partnerships.

“No kala-azar transmission” has been adopted as a new activity at the beginning of 2014 and implemented in moderately and hyper-endemic upazilas. The endemicity is arbitrarily defined as: (a) hyper-endemic: ≥ 2.5 cases/10,000 population, (b) moderately-endemic: ≥ 1 to 2.49 cases/10,000 population, and (c) less-endemic: < 1 case/10,000 population. Kala-azar patients are detected and treated mainly through primary healthcare centers (upazila health complexes) and referral centers, especially at Surya Kanta Kala-azar Research Center (SKKRC) and medical college hospitals. The ICT-based rK39 is being used for the diagnosis of kala-azar both in the field (UHCs) and hospitals. Injection Sodium Stibogluconate (SSG) had long been used in the treatment of kala-azar and post kala-azar dermal leishmaniasis (PKDL) cases, which have been phased out. In the

WHO-supported VL Elimination Program in Bangladesh, single-dose AmBisome (Liposomal amphotericin B) has been introduced in the treatment for kala-azar since 2013. Initially, it was focused on eight hyper-endemic upazilas but now it is being introduced in the remaining 91 endemic upazilas (Annual Report, KEP, Bangladesh). WHO Bangladesh, icddr,b, and MSF have been providing technical assistance to strengthen the program to implement the single-dose Inj. AmBisome in all the endemic upazilas. The Government provides a huge amount of Deltamethrin, instead of DDT for the Integrated Vector Management (IVM) to be done successfully. The IVM is one of the major concepts of National Kala-azar Elimination Program.

Successful continuation of the program activities consecutively over the years reduced the number of hyper-endemic upazila to zero, only 2 upazilas (Fulbaria and Trishal) still remain as moderately-endemic areas (Map 10.2). Rest

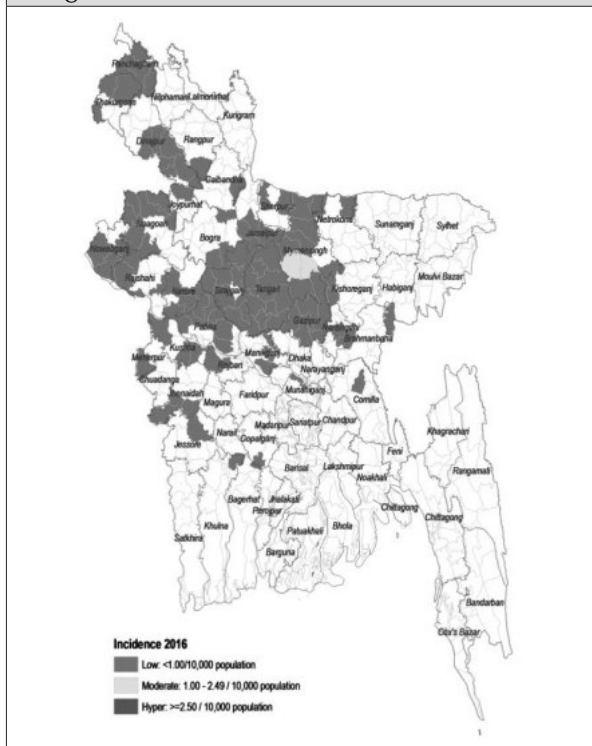
of the 98 upazilas attained the low-endemic status.

In 2016, total number of 459 kala-azar cases were reported. Among them, 259 cases were new kala-azar (NKA), 39 cases were relapse kala-azar (RKA), 2 cases were kala-azar treatment failure (KATF), and 159 cases were post kala-azar dermal leishmaniasis (PKDL) as shown in Table 10.6. Five deaths due to kala-azar occurred in the reporting year. Two cases of cutaneous leishmaniasis (CL) were managed by Bangladeshi physicians who worked abroad. The downward trend of the reported cases is very promising. In total, 9,379 cases were reported in 2006, the initial year of the elimination program, and only 459 cases are reported in 2016 (Figure 10.15).

Monthly reporting of kala-azar cases and case search are running regularly under active and passive surveillance of KA cases. In 2016, the 'active case detection' (ACD) activities were continued. A total of 25 camps were arranged to conduct the said case-detection activities; 772 suspected cases of kala-azar were found throughout 2016. Out of them, 3 were new kala-azar (NKA) cases while 9 cases were diagnosed as PKDL.

Large-scale capacity-building activities were conducted by the NKEP in 2016. A total of 20,259 people were trained and sensitized in different capacities on kala-azar-related issues. The activities are elaborated in Table 10.7. Very large-scale IEC/BCC activities were done in endemic areas as shown in Table 10.8. The NKEP provided drugs free of charge, along with diagnostic kits and insecticides in the endemic upazilas. The distribution is shown in Table 10.9. National Kala-azar Elimination Program is a web-based reporting system introduced in 2016. Now, the program is receiving the real-time data from upazila level. A software is developed with the help of icddr,b and MIS-DGHS to record and analyze the data. All concerned statisticians and other staff members were trained on this during the reporting year (Table 10.7). Besides, operational researches, such as on pharmacovigilance, vector bioassay

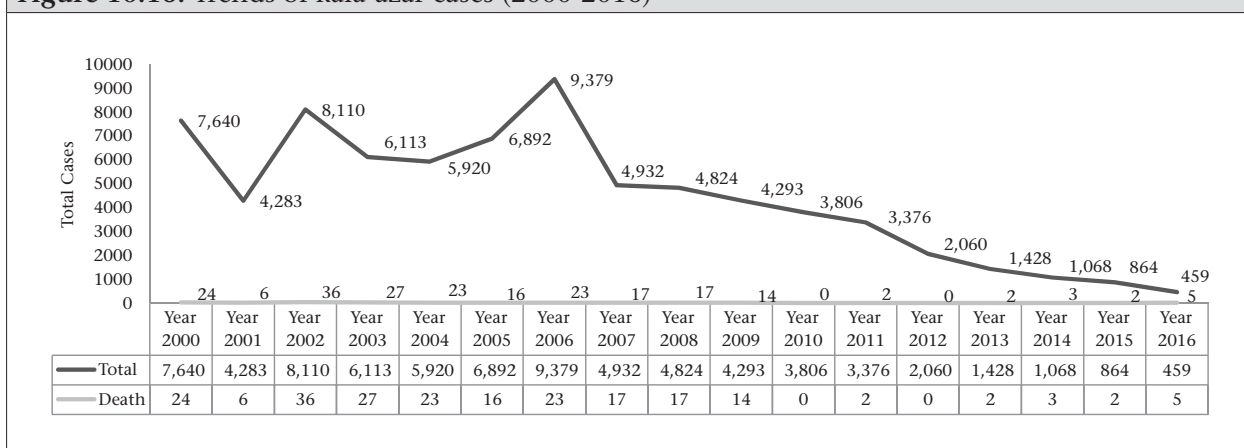
Map 10.2. Kala-azar-endemic areas of Bangladesh in 2016



Hyper-endemic upazilas: None; Moderately-endemic upazilas: Trishal and Fulbaria

Month	NKA	PKDL	Relapse KA	KATF	Total	Death
January	21	13	0	0	34	0
February	22	16	2	0	40	1
March	22	6	6	2	36	1
April	22	6	3	0	31	1
May	17	14	5	0	36	0
June	34	24	2	0	60	0
July	24	4	2	0	30	0
August	23	6	3	0	32	0
September	19	13	3	0	35	1
October	19	8	3	0	30	0
November	21	32	6	0	59	0
December	15	17	4	0	36	1
Total	259	159	39	2	459	5

Figure 10.16. Trends of kala-azar cases (2000-2016)



test, clinical trial of combination therapy for the treatment of new kala-azar, etc. were conducted in the reporting year.

Some strategically-important key documents were developed. These were: National Kala-azar Case Management Guideline (updated in 2016); Kala-azar Outbreak Management Guideline in Bangladesh, 2016; Monitoring Tools and Supervisory Checklist (draft developed); Integrated Vector Management Guideline (IVM) (draft developed); National Strategy on Kala-azar Elimination in Bangladesh (ready to be updated).

The NKEP is about to reach the elimination target. After 2015, there is no hyper-endemic upazila reported. With the Government WHO, icddr,b, and MSF are providing technical assistance to the NKEP in this process.

Viral hepatitis

Hepatitis is one of the major global public health problems, especially in developing countries. Hepatitis is mainly caused by viruses, like hepatitis A, B, C, E and Hepatotropic viruses and can also be caused by bacteria and protozoa. There are two types of hepatitis:

Personnel trained	Number of trainees in 2014	Number of trainees in 2015	Number of trainees in 2016
Medical Officer	428	473	563
Senior Staff Nurse	343	348	458
Lab Technician	49	13	69
Store-keeper	89	-	0
Statistician	49	50	156
Health Inspector, Assistant Health Inspector and Health Assistant	511	191	2,067
Community Health Service Provider (CHCP)	180	2,080	2,080
Informal healthcare provider and qualified private doctor	560	600	15,050
Kala-azar Search Volunteer (KSV)	712	-	-
NGO health professional	-	-	308
Sensitization of head teachers of high schools for community mobilization through school children	-	-	1,528
Total	3,009	3,755	22,259

IEC/BCC activity	Persons directly reached
Uthan Boithak for community mobilization by GOB health workers	2,600
Wall-paintings in the school compound to reach students and community	190,809
Pen-holder distribution	
UHC level	200
Tertiary level	636
Docudrama/Gazir gaan	
Docudrama	38,200
Folk song	1,480
Others: Installation of posters/stickers on kala-azar for community mobilization	
Village doctor's chamber	603,942
Pharmacy	248,682
Homeopathic chamber	21,392
Poster in open places	177,630
Total	1,285,571

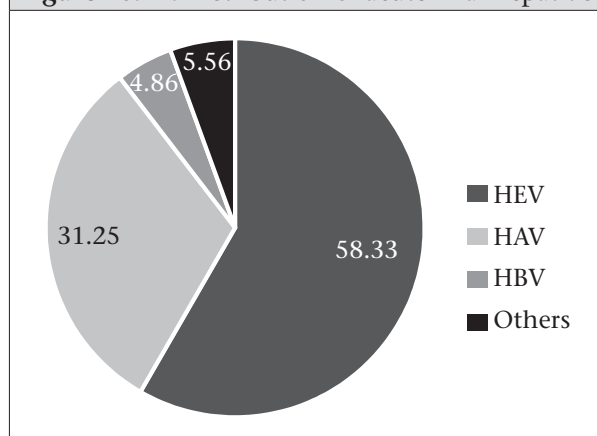
Name	Supplied	Consumed
rk39 (RDT)	16,305	15,273
AmBisome (Vial)	5,764	3,878
Miltefosine (10 mg)	7,084	4,867
Miltefosine (50 mg)	16,396	11,724
Deltamethrin (kg)	41,820.91	70,900 (with previous stock)

acute and chronic hepatitis. Hepatitis B virus (HBV) discovered in 1967 is the main cause of chronic hepatitis. Approximately 80% of people with chronic hepatitis B develop liver cancer, and more than 500,000 people die each year from liver cancer in the world.

Burden of hepatitis viruses in Bangladesh

- In Bangladesh, acute hepatitis is caused due to HEV (58.33%), HAV (31.25%), and HBV (4.86%)
- HBV is responsible for 76.3% of chronic hepatitis, 61.15% cirrhosis, and 66% Hepatocellular carcinoma (HCC) in Bangladesh

Figure 10.17. Distribution of acute viral hepatitis



- Prevalence of HBV is 5.4% and that of HCV is 0.84% in the country
- Liver diseases account for 8-12% of admissions in medicine wards in our government medical college hospitals
- Liver diseases are the third common cause of deaths in our government medical college hospitals
- HBV and HCV together account for more than 20,000 deaths in Bangladesh every year
- HCC is the third common cancer in the country, next only to carcinomas of lungs and stomach

Activities for the control of viral hepatitis

- Development of training module on modern management of viral hepatitis
- Training on modern management of viral hepatitis for government doctors of whole Bangladesh
- Promoting and ensuring rational use of antiviral drugs
- Conducting scientific seminar on viral hepatitis in renowned medical college hospitals
- Advocacy program in districts on viral hepatitis
- Screening of hepatitis B and hepatitis C among the high-risk population group
- Vaccination against hepatitis B among the high-risk population group

Diarrhea

In 2016, a total of 2,409,294 diarrheal cases and 5 related deaths were reported. The number of diarrhea cases and related deaths decreased compared to the previous year. Figure 10.18 shows the total diarrheal cases in different years.

Figure 10.19 shows that deaths due to diarrhea decreased almost each year but drastically from 2007 to 2016. The amazing reduction in diarrhea-related mortality over the last few years proves the effectiveness of the management protocols and strategies adopted. The strategies include the provision of early oral rehydration at the household level. Cases that cannot be managed at the household and community levels are usually referred to the treatment centers where more efficient therapy, including intravenous rehydration and antibiotics, can be used.

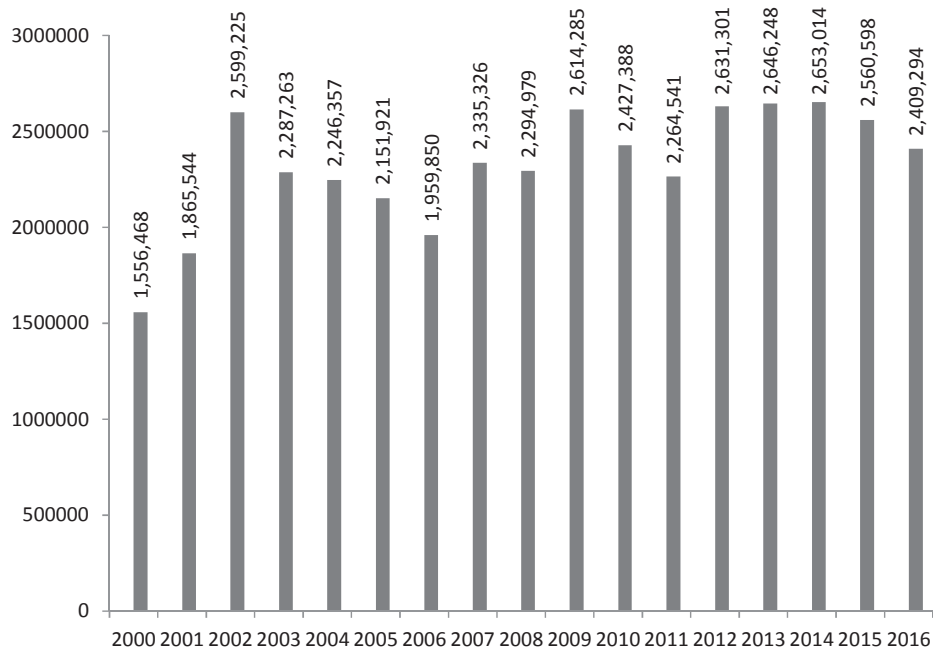
Activities for controlling diarrhea and waterborne diseases

- Training of healthcare providers on IPC, hand-hygiene, waste disposal, biosafety and biosecurity to prevent transmission of communicable diseases
- Upgrading of guideline for management of diarrheal diseases
- Capacity development of the service providers on early case detection and management
- Immunization against cholera in high-risk group
- Strengthening hospital surveillance system and early warning for outbreak

Antimicrobial resistance containment (ARC)

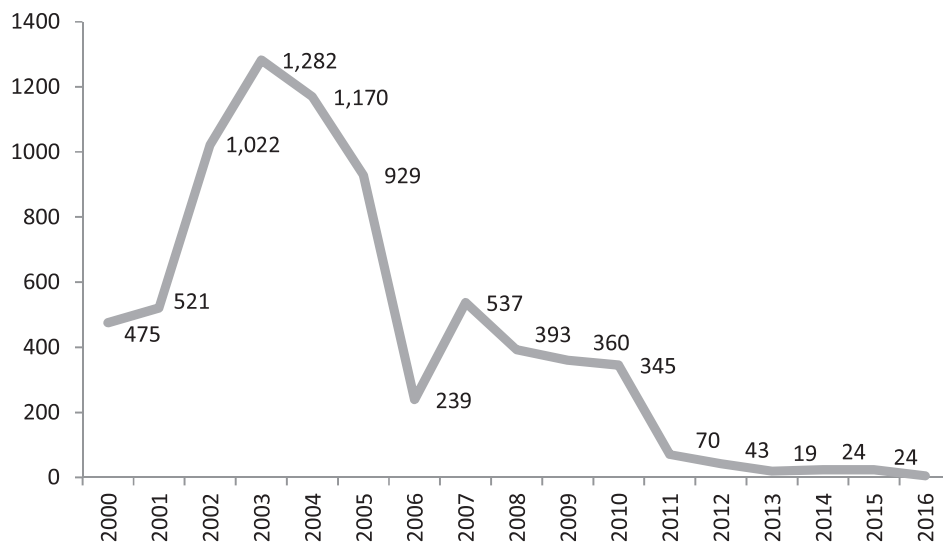
Antimicrobials are lifesaving drugs for both humans and animals; these combat with virulent microorganisms that cause various diseases. Now-a-days, microorganisms

Figure 10.18. Number of diarrhea cases in different years since 2000.



Source: Control Room (DGHS)

Figure 10.19. Numbers of diarrhea-related deaths in Bangladesh during 2000-2016



Source: Control Room (DGHS)

are becoming resistant to the first-line antimicrobials. Antimicrobial resistance (AMR) to pathogens is becoming a real threat to public health. In this context, World Health Assembly (WHA) Resolution of 1998 decided to fight against AMR. As per direction of WHO, Communicable Disease Control (CDC) Unit of

the DGHS works to mitigate the public health problem relating to AMR in collaboration with the Department of Livestock in Bangladesh and FAO.

Steps taken by CDC Unit of the DGHS are listed in the next page.

1. A meeting with the National Technical Committee (NTC) on Antimicrobial Resistance Containment (ARC) was held on 19 April 2015
2. A five-year National Action Plan (NAP) on ARC has been drafted during 2011-2016, Users' guideline and laboratory SOP and training module have been prepared
3. National symposium on antimicrobial resistance containment (ARC) was arranged with all UHFPOs in the presence of Hon'ble Health Minister on 22 April 2015
4. The National Strategy for Antimicrobial Resistance Containment (ARC) in Bangladesh 2011-2016 has been presented and approved on 14 May 2015
5. Antimicrobial Resistance Containment (ARC) is included as a different program in the new Operational Plan (OP)
6. Laboratory-based surveillance of AMR pattern is in action under the agreement of Global Health Security Agenda (GHSA), CDC, USA
7. Hands-on training on Antimicrobial Susceptibility Test was held in December 2015
8. Laboratory instruments have been provided to operate the laboratory-based surveillance of AMR pattern
9. Mass media have been involved to increase awareness among the mass people about antimicrobial resistance.

Our future plan to address the problems of AMR includes the following:

1. Starting a comprehensive laboratory-based surveillance system for assessing AMR among humans, birds, fishes, and other animals
2. Prohibiting the sale of antimicrobials without prescription of authorized persons

3. Implementation of laws and rules to control the production, quality, and marketing of antimicrobials.

Program for IHR, migration health, emerging and re-emerging diseases and influenza control and prevention

In May 2005, the fifty-eighth World Health Assembly (WHA) adopted the International Health Regulation 2005 (IHR 2005) which, subsequently, came into effect on 15 June 2007 as the updated IHR 2005, with 123 Member States signing the document. The purpose and scope of the IHR 2005 are "to prevent, protect against, control, and provide a public health response to the international spread of diseases in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade. State parties are required by the IHR 2005 to develop minimum core public health capacities. Attaining the minimum public health core capacity as per IHR 2005 will significantly contribute to the SDGs for target 2, 3, and 6.

The IHR 2005 set forth new requirements and obligations for Member States of WHO to develop capacity for detection, verification, notification, and accuracy of information.

The Member States, including Bangladesh, have to comply with developing core capacities for surveillance and response to address emergency threats from infectious diseases; core capacities at the country level also need to be developed for designated airports, ports, and ground crossings to help ensure global, regional and national health security to detect and combat diseases of radio-nuclear, chemical and food origin in the community. The timeline for achieving the capacity was five years from the year of enforcement of IHR (2007+5=2012). It was extended up to 2014 upon request from Bangladesh. However, the expected capacity has not yet been achieved fully. The timeframe for implementation of IHR 2005 expires on

Figure 10.20. Personal protective equipment**Figure 10.21.** Dissemination of *Aedes* survey results at IEDCR

15 June 2014. Considering the prevailing situation in Bangladesh, achieving the minimum core capacity for implementation of IHR 2005 is very difficult within the remaining time. Bangladesh has again applied for further extension for a period up to 15 June 2016.

Bangladesh assessed the core alert and response capacities of selected health facilities and points of entry (PoE) during March–May 2009.

The draft workplan for 2009 was based on the gaps identified in that assessment. The Ministry of Health and Family Welfare (MOHFW) of the Government of Bangladesh (GOB) and Communicable Disease Control (CDC) Program of the DGHS had already undertaken various activities for implementation of IHR since the previous plan was drafted. The IEDCR has already completed conducting re-assessment of core alert and response capacities in selected health facilities and designated points of entry during July–August 2011. Re-assessment of designated PoE and some other selected PoE has been conducted in August–September 2013.

IHR-related activities undertaken by Bangladesh

1. Formation of IHR Committees (National IHR Coordination Committee, National IHR Technical Committee, National IHR Core Group)
2. Assessment of the core alert and response capacities of health facilities and ports of the country in 2009 and 2011
3. Re-assessment of designated PoE and some other selected PoE conducted in 2013
4. Risk mapping of health resources in 2013 for IHR 2005 implementation
5. On the basis of findings from this assessment in 2009 and 2011, the Government drafted an Action Plan for implementation of IHR 2005 in Bangladesh, and the following activities have been conducted by CDC/IEDCR (the National Technical Focal Institute):
 - (a) Finalization/drafting of the following documents on IHR 2005 has been completed:
 - ◇ Strategy and Guideline for International Health Regulation 2005 in Bangladesh
 - ◇ Standard Operating Procedure (SOP) for Public Health Emergencies for International Concern (PHEIC)
 - ◇ Strategy and Guideline for Management of PHEIC at points of entry
 - ◇ Reporting of PHEIC in PoE

- (b) Review and assessment of national legislation, regulations, and other instruments for IHR 2005 implementation done by Bangladesh National Woman Lawyers Association (BNWLA)
 - (c) IEDCR conducted training for capacity-building to detect and respond to PHEIC, with technical support of WHO and CDC-Atlanta, USA
 - ◇ Implementation of IHR 2005 involving 3,600 health managers (health officers at the points of entry, immigration officials of Dhaka Airport, clinicians/pediatricians, health administrators, medical officers of the government and private medical colleges, autonomous and private hospitals of Dhaka city)
 - ◇ Management, containment, and mitigation of PHEIC for personnel involved in all PoE, which included the basics of PHEIC, management of PHEIC at PoE, quarantine, isolation, and infection control
 - ◇ Reporting system of PHEIC developed, which included the basics of PHEIC, management of PHEIC at PoE, quarantine, isolation, and infection control for all ports personnel
 - ◇ Strategy and Guidelines for International Health Regulation (2005) set for community medicine teachers of medical colleges (public and private) and civil surgeons of all districts
 - ◇ Inclusion of IHR 2005 in the undergraduate and postgraduate medical curricula, with support of the Center for Medical Education (CME)
 - ◇ Outbreak Investigation by UHFPOs of 460 upazilas
 - ◇ Rapid response and containment for district and upazila RRTs
 - ◇ Disease surveillance, investigation, and intervention of outbreaks for health personnel at the upazila level
 - (d) The 2nd National Avian and Pandemic Influenza Preparedness and Response Plan, Bangladesh: 2011-2016 have been revised and finalized in the context of IHR 2005
 - (e) Hazrat Shahjalal International Airport (Dhaka), Chittagong Seaport, and Benapole landport have been declared as designated PoE with concurrence of relevant ministries: Ministries of Civil Aviation, Shipping and Customs formed Coordination Committees at the designated PoE
 - (f) Identification of Director (Disease Control) as the National Focal point for IHR
 - (g) Identification of IEDCR as the National IHR Focal Technical Institute of Bangladesh
 - (h) Formation of IHR Committees (National IHR Coordination Committee, National IHR Technical Committee, National IHR Core Group (approved by MOHFW))
 - (i) Review and updating of laws in relation to implementation of IHR
 - (j) Bangladesh had successfully carried out joint external evaluation (JEE) in May 2016. The JEE is based on peers assessing peers and uses a multisectoral OneHealth Approach, which is imperative to combat global public health emergency threats
 - (k) Bangladesh had finalized the draft National Clinical Management of Chikungunya Fever and National Guideline for Psychosocial Support for Chikungunya Cases
 - (l) National strategy was also finalized for Zika virus, although there is no active case of Zika identified in Bangladesh till now
 - (m) National Strategy for Antimicrobial Resistance Containment (AMRC) is also developed (draft finalized)
- In addition to the above activities, the Government of Bangladesh has successfully combated the pandemic influenza A(H1N1) pdm09 according to the IHR 2005 guidelines set by WHO. During the influenza pandemic in 2009, the Government of Bangladesh undertook different activities with overwhelming success to contain the virus transmission and spread. The most prominent activity was health

screening of passengers coming from affected countries in 3 international airports, 2 seaports, and 11 land crossings. A total of 6 doctors and 22 sanitary inspectors and nurses worked in shift at the Dhaka Airport. In other 15 PoE, 24 doctors worked at health desk in shift. This screening started from 30 April 2009 and continued till mid-November 2009. A total of 455,458 passengers were screened during that period. During the pandemic, immigration officials of Hazrat Shahjalal International Airport were trained to screen passengers properly. In an aim to prevent the fatal disease Ebola from spreading and contaminating people in Bangladesh, the Government set up seven archway thermal scanners at different PoE to check the body temperatures of arriving passengers.

Special arrangements were made to screen Hajjee passengers coming back from Saudi Arabia; 83 samples collected from suspected cases from Dhaka and Chittagong airports were tested at IEDCR, and 21 were lab-positive for A(H1N1). Recently, similar activities were undertaken to contain Middle East Respiratory Syndrome Coronavirus (MERS-CoV) infection in returning Hajjees during the Hajj of 2017. In addition, a consultative workshop was carried out in July 2017 by CDC of the DGHS on communicable diseases for doctors, nurses, and health-related personnel. Other activities included sharing health messages with the pilgrims before starting for Hajj, during return flight, and upon arrival in the international points of entry. Several hotlines were opened to support all returning Hajjees who were suspected to have infections, guide them to avail healthcare through government facilities, collect and test samples from suspected cases.

Migration health

Migration health addresses the physical, mental and social needs of migrants and their families, and the public health needs of communities of the countries of origin and destination, through policies and practices corresponding to the emerging challenges

facing mobile population. Migrants constitute a large number of people moving out of the country and generating huge remittances. Despite the migrants' great contribution to the economy of Bangladesh, it is unfortunate that they are often exposed to occupational health hazards and have very limited access to health benefits. Health of migrants has become a more prominent concern of the Government as Hon'ble Prime Minister expressed her country's commitment to ensure the welfare of migrants in the 64th World Health Assembly. The Director General of Health Services has already developed a national strategic action plan on migration health for 2015 to 2018. Now, we are hopeful to integrate it with the next 5-year Operational Plan of Health.

Figure 10.22. Health screening of passengers at airports



Figure 10.23. Campaigning for raising awareness to prevent chikungunya



Strategy

The Government of Bangladesh is committed to improving the health status of all categories of migrants, including inbound, outbound and internal migrants throughout the process by progressive realization and protection of their fundamental right to health. The action plan has the following targets:

- To establish a strategic monitoring and information system (MIS) for the health of migrants
- To enhance policy and legal framework of migration health to provide support for healthcare and social protection of migrants
- To enable the existing health and social welfare system to be more migrant-sensitive
- To facilitate multisectoral partnerships for migration health at the national and regional levels

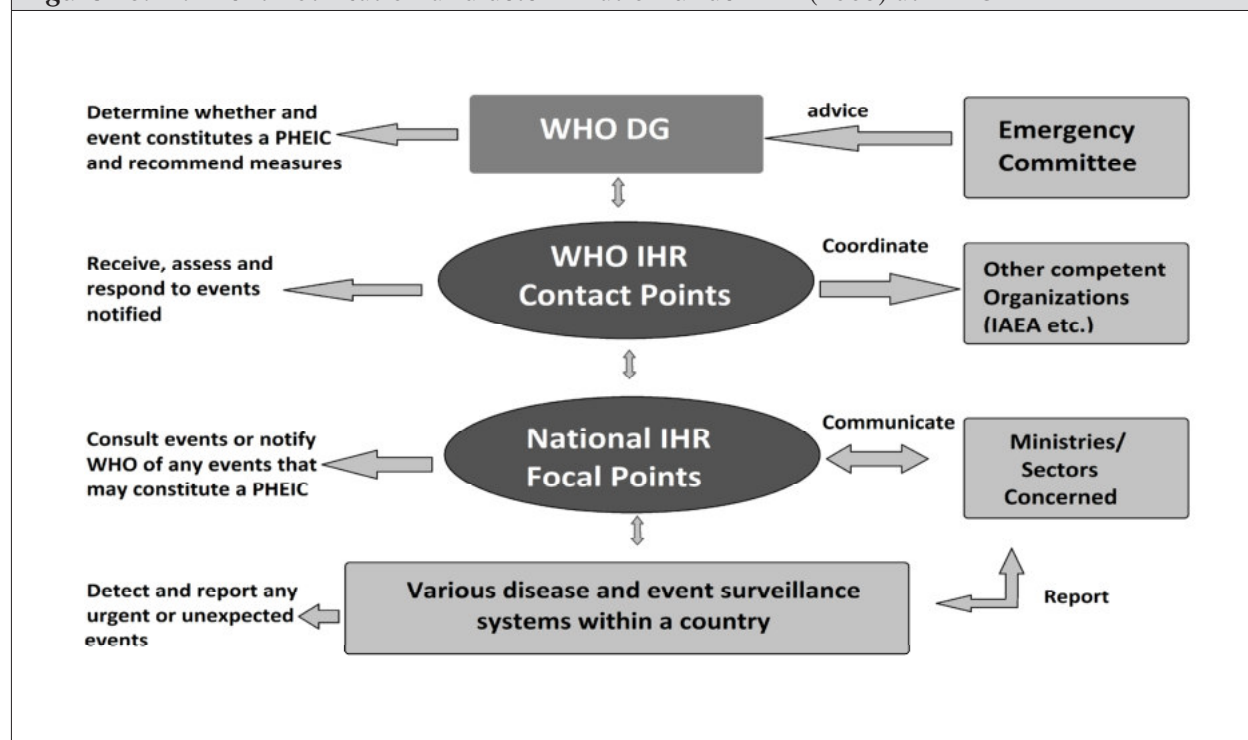
Program for zoonotic diseases: rabies, Nipah, Japanese encephalitis, leptospirosis, brucellosis

Zoonotic Diseases prevention and control program, emphasizing rabies, has been incorporated as a separate program in the current Operational Plan of CDC of the DGHS

Rabies Elimination Program (REP)

Rabies is a fatal zoonotic disease of public health concern and economic importance. It was neglected in Bangladesh before 2010, with more than 2,000 annual rabies cases. Domestic dogs (87%) were found to be the single most important animal reservoir of the pathogen, followed by cats (11%) and jackals (2%) in a recent study. There is an estimated 1.6 million dog population with around 3-4 hundred thousand human exposures (biting) and around 50 thousand animal exposures (biting) annually. Bangladesh has started the journey towards rabies prevention and control program since 2010 aiming at prevention and control of the disease in the country. The program is called Rabies Elimination Program (REP).

Figure 10.24. Event notification and determination under IHR (2005) at WHO



Goal of the program is: elimination of rabies from the country by 2022.

The main strategies are: (i) multisectoral collaboration; (ii) advocacy, communication, and social mobilization (ACSM); (iii) post-exposure prophylaxis (PEP) of animal-bite cases; (iv) mass dog vaccination (MDV); and (v) surveillance.

Implementation status

The REP of CDC under the DGHS led and set an example of multisectoral collaboration and coordination through bringing together relevant stakeholders, including Department of Livestock, Local Government, NGOs, development partners (WHO, US-CDC, etc.) in one platform for fighting against rabies in Bangladesh through OneHealth approach. National strategy for rabies prevention and national action plan for MDV has been developed for effective planning and implementation of the program.

A total of 67 centers have been established with one national center at the Infectious Diseases Hospital, Dhaka, known as the National Rabies Prevention and Control Center (NRPCC) and at least one in each of the 64 districts of the country providing standard animal-bite management, including wound-washing and PEP with free intradermal rabies vaccine (ID-RV) and rabies immunoglobulin (RIG) through trained physicians and nurses. The NRPCC is the world's

largest ID-RV center that provides standard animal-bite management service to about 600-800 cases daily. Monthly reporting system on the usage of ID-RV and RIG, NRPCC and the district-level centers (DRPCCs) is functioning either through DHIS2 or directly. National Rabies Survey was conducted in 2010 and 2012 that showed decrease in rabies cases over time.

The following box briefly highlights the countrywide activities under the REP:

Since awareness and community participation are vital for effective and a sustainable control program, various activities have been conducted, including observance of World Rabies Day, dissemination of awareness message in print and electronic media, community awareness campaign during MDV for timely animal-bite management, importance of MDV, etc.

Mass dog vaccination

Mass dog vaccination (MDV) is proved to confer herd immunity among dog population and prevent transmission of rabies. Strategic target is to complete 3 rounds of MDV all over the country, including remote areas. After piloting at Cox's Bazar Municipality in 2011, MDV has been scaled up in all the district-level municipalities and whole areas of 10 districts by June 2017. The country is now in a unique position to achieve the rabies elimination goal if three rounds of MDV can be completed

Figure 10.25. NRPCC providing animal-bite management (ABM) services



Map. 10.3. Locations of District Rabies Prevention and Control Centers (DRPCC)

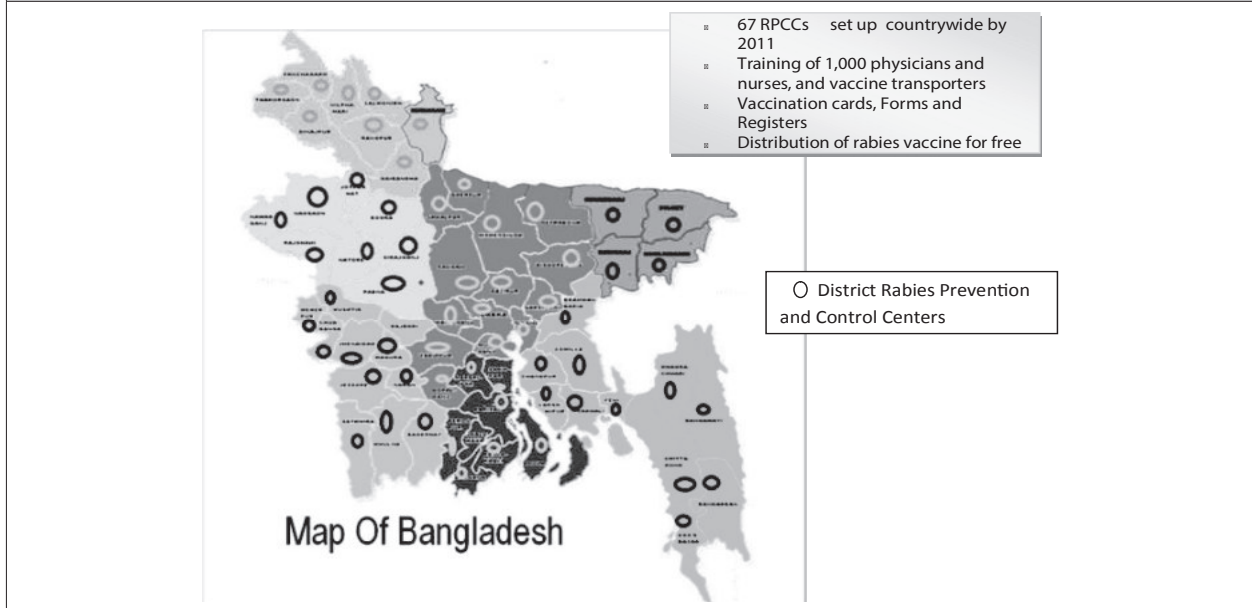


Figure 10.26. Scaling up of ID-RV during 2012-2016

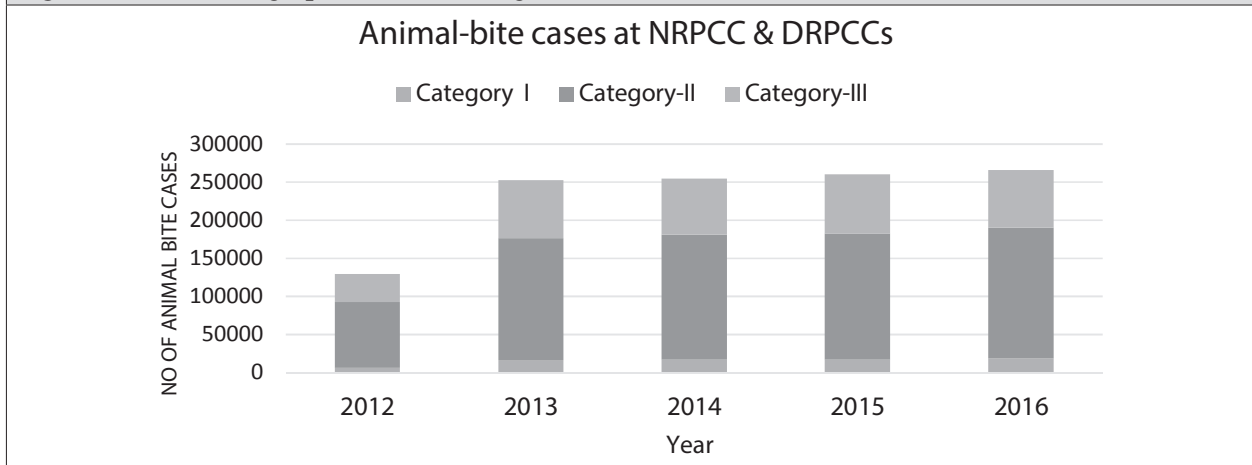
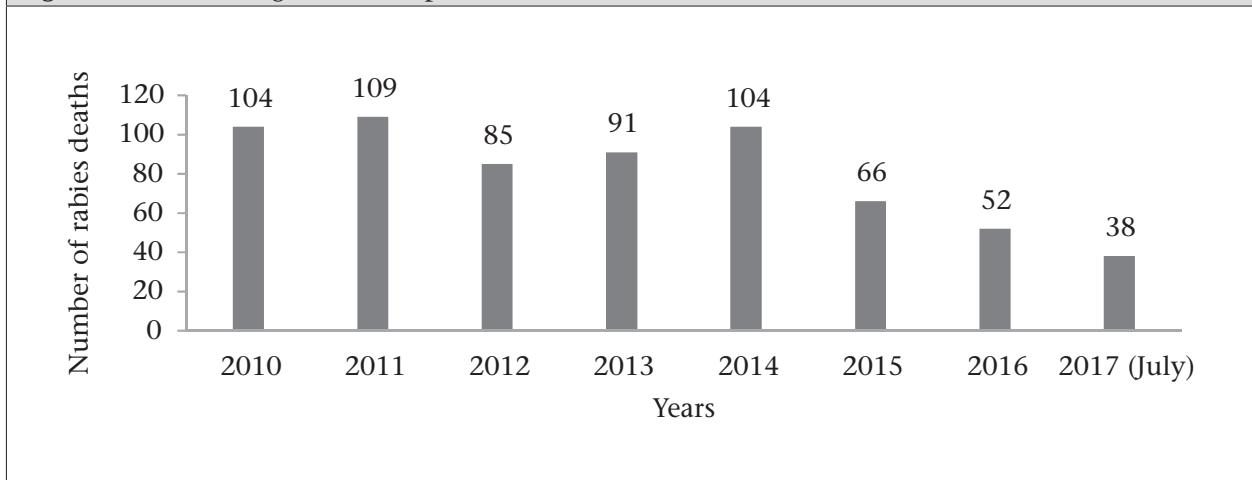
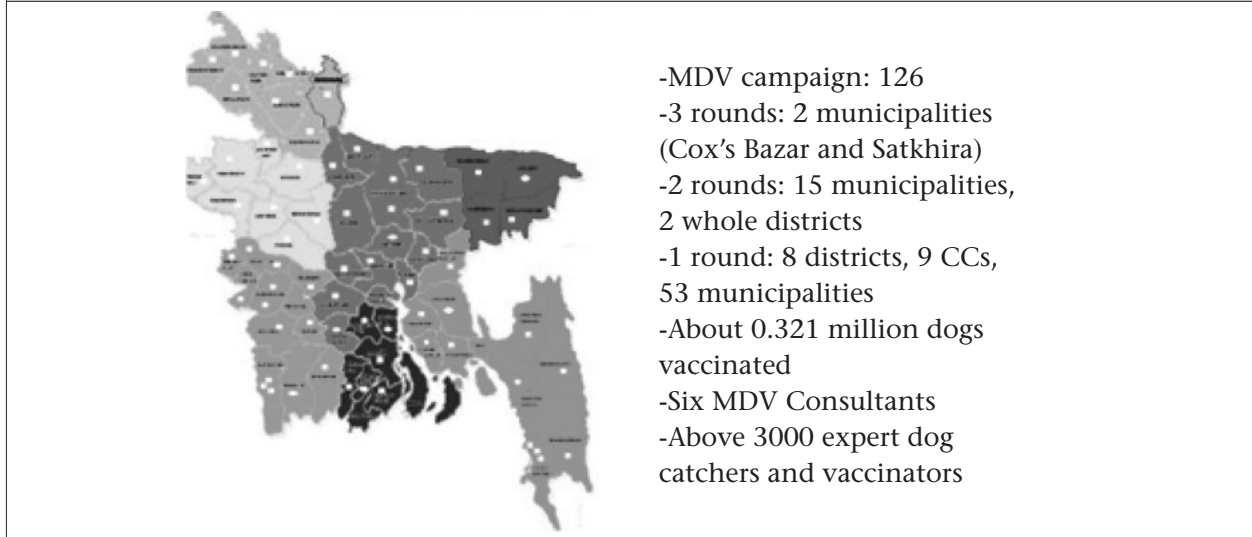


Fig 10.27. Decreasing trend in reported rabies-related deaths at NRPCC



Map10.4. Achievements of MDV in Bangladesh (June 2017)**Table10.10.** Good practices: changes brought about by REP

Areas	Before 2010	After 2010
National strategy	No	Yes
Committees	No	NSC, NTWG
Multisectoral collaboration	No	Health, Livestock, LG, WHO, FAO, OIE, World Animal Protection, HIS
Vaccine	NTV	TCV & RIG
Accessibility of vaccine	NTV: 25 thousand	TCV: 200 thousand
Animal-bite management center	No	67 (all districts)
Trained Physicians/nurses	Few	>1000
Mass dog vaccination (MDV)	No	3 rounds: 2 municipalities (Cox's Bazar and Satkhira) 2 rounds: 15 municipalities, 2 whole districts 1 round: 8 districts, 9 CCs, 53 municipalities
Dog population management	One union	Dhaka City North

within 2019, which needs quality vaccine and financial support.

Bangladesh has started to move from control to elimination. It needs to accomplish targeted strategic activities through multisectoral collaboration and OneHealth approach to make Bangladesh rabies-free by 2022.

Nipah, Japanese Encephalitis, Leptospirosis, Brucellosis Control and Prevention Program

Among the emerging infections, Nipah is a unique zoonotic disease for Bangladesh as the only country having endemicity of the disease. From 2001 to 2015, there have been 215 suspects

with 164 deaths due to Nipah. CDC of the DGHS conducted various activities, including awareness campaign, provided training to healthcare professionals for standard management of the disease under Emerging and Re-emerging Disease Control Program of CDC, DGHS. Under the current OP, various activities, including development of strategic documents, guidelines, establishment of effective collaboration among stakeholders, raising advocacy, communication, and social mobilization campaign will be implemented for prevention and control of Nipah, anthrax, and other zoonotic diseases of public health importance.

Tuberculosis

Tuberculosis (TB) has long been a major public-health problem in Bangladesh. Under the Mycobacterial Disease Control (MBDC) Unit of the DGHS, the National Tuberculosis Control Program (NTP) is working with a mission of eliminating TB from Bangladesh. The goal of the program is to reduce morbidity, mortality, and transmission of TB through achieving universal access to high-quality care for all patients until it is no longer a public-health problem.

Directly-observed treatment-short course (DOTS) strategy was introduced by the NTP in November 1993. The program progressively expanded to cover all upazilas by mid-1998. By 2007, the DOTS services were made available throughout the country, including the metropolitan cities. The NTP started

implementing Stop TB Strategy in 2006 giving emphasis on all types of TB cases, including clinically-diagnosed cases, drug-resistant TB, childhood TB, and TB/HIV co-infected cases to ensure quality care.

Bangladesh is in the stage of implementing “WHO’s End TB Strategy” that is the Global strategy with its ambitious targets for tuberculosis prevention, care, and control after 2015. The strategy aims to end the global TB epidemic, with targets to reduce TB-related deaths by 95% and to cut new cases by 90% between 2015 and 2035, and to ensure that no family is burdened with catastrophic expenses due to TB. Table 10.11 shows interim milestones set for 2020, 2025, and 2030.

Tuberculosis situation

After the National TB Prevalence Survey (2015-2016), the revised estimates by WHO for incidence and prevalence rates of all forms of tuberculosis in 2016 are 221 and 260 per 100 000 people respectively. It is further estimated that about 40 per 100 000 people died of TB in the same year. Although the HIV prevalence is still low, HIV poses a threat to TB control. The estimated incidence rate of HIV-positive TB cases reduced from 0.39/100,000 people in 2015 to 0.31/100,000 in 2016. The proportion of MDR/RR-TB among new TB cases was 1.6%, and that among re-treatment cases was 29%. (Table 10.12).

Indicator	Milestone SDG		Target	
	2020	2025	End TB	
			2030	2035
Percentage reduction in the absolute number of TB-related deaths (compared to 2015 baseline)	35	75	90	95
Percentage reduction in the TB incidence rate (compared to 2015 baseline)	20	50	80	90
Percentage of TB-affected households experiencing catastrophic costs due to TB (level in 2015 unknown)	Zero	Zero	Zero	Zero

Table 10.12. Estimated population and TB burden in Bangladesh, 2016 (reported by WHO in 2017 draft)

• Population	160.8 million
• Mortality rate	40/100 000 population
• Incidence rate (all TB cases)	221/100 000 population
• Incidence rate (HIV-positive TB cases)	0.31/100 000 population
• Incidence rate MDR/RR-TB	5.3/100 000 population
• Proportion of new TB cases with MDR/RR-TB	1.6%
• Proportion of re-treated TB cases with MDR/RR-TB	29%

Source: Global Tuberculosis Report, WHO, 2017 Draft

TB control: progress made

DOTS (Directly Observed Treatment, Short-course) was introduced in Bangladesh in 1993. Since then, in terms of DOTS coverage, detection of TB cases, and treatment success, remarkable progress in TB control has been made in the country. Diagnostic and treatment services for TB patients have been made available free of charge throughout the country since 2007.

A total of 223,921 cases (including 1,674 combined cases of return after failure, return after loss to follow-up, and others) have been reported to the NTP in 2016. So, the overall case notification rate of all forms of TB cases (excluding 1,674 returning cases) was 138 per 100 000 population. The case notification rate for new bacteriologically-confirmed pulmonary (new smear-positive) cases in 2016 was 77 per 100 000 population (Figure 10.28 and 10.29; Table 10.13, and 10.14) The projected population for 2016 based on 2011 census is 161,109,252.

The program has successfully treated 95% of the new smear-positive cases registered in 2015 as shown in Figure 10.30.

Drug-resistant tuberculosis (DR-TB)

The multidrug-resistant tuberculosis (MDR-TB) has become a significant public-health threat globally against effective TB control. Bangladesh is also facing the challenge of drug-resistant TB. To combat this problem under National TB Control Program, Bangladesh has taken appreciable steps in terms of diagnosis and management of drug-resistant TB. The diagnostic facilities are available at: National TB Reference

Laboratory (NTRL) in the NIDCH, Dhaka and Regional TB Reference Laboratory (RTRL) in the CDHs, Rajshahi, Chittagong, and Khulna.

The treatment facilities for drug-resistant TB are available at: NIDCH, Dhaka; CDH, Rajshahi, Chittagong, Khulna, and Sylhet; and 20-bed CDH at Pabna.

Besides these, the government-run hospitals have the treatment facilities for DR-TB management with a shorter regimen of 9 months and are also available at three other hospitals of Damien Foundation at Jalchhatra under Tangail district, Onontopur under Netrakona district, and Shambhuganj under Mymensingh district. The Damien Foundation, Bangladesh also conducts operational research on drug-resistant TB.

From 2008 to 2016, a total of 5,258 multidrug-resistant TB patients have been enrolled for treatment; 3,739 under 24 months regimen (supported by the Global Fund) and 1,519 under 9 months regimen (supported by the Damien Foundation, Bangladesh) (Table 10.15). The treatment success rates among the enrolled cases of 2014 cohort are 86% and 70% under 9 months and 24 months regimen respectively (Figure 10.31).

Leprosy

A bacterium called *Mycobacterium leprae* causes leprosy, which is a chronic infectious disease that primarily affects the peripheral nerves and secondarily the skin, mucous membrane, and tissues of the body, like muscles, eyes, bones, testes, and internal organs. Leprosy is considered

Figure 10.28. Nationwide TB case notification; absolute number, 2001-2016

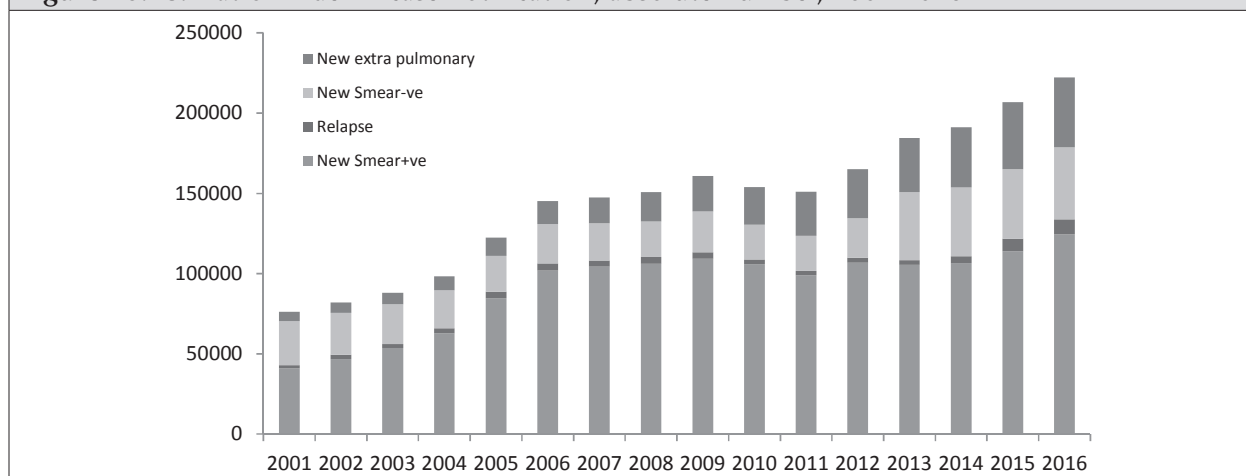
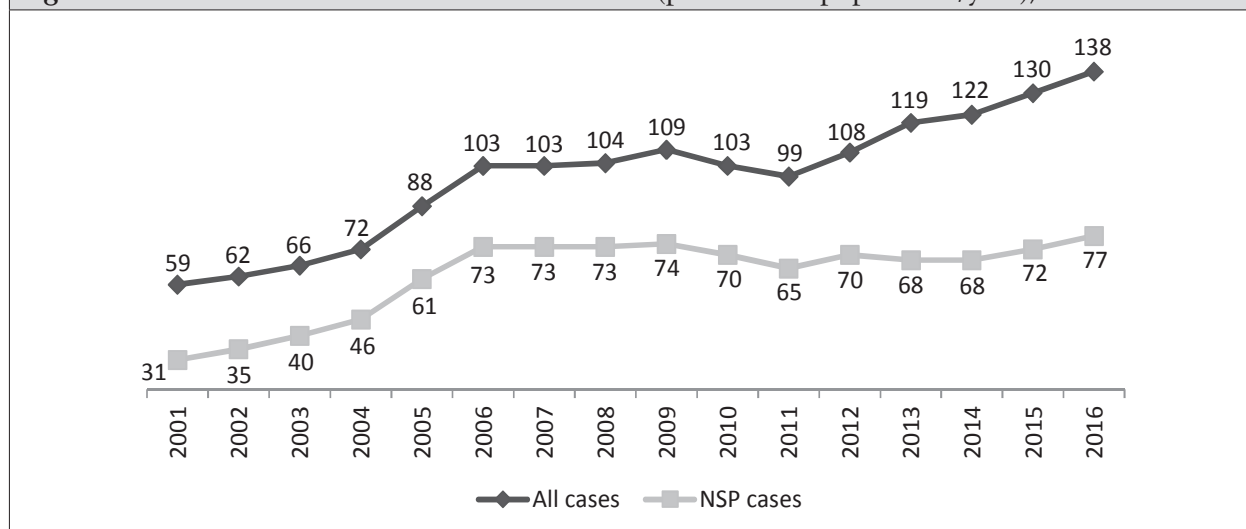


Table 10.13. Nationwide TB case notification (absolute number) by reporting unit, 2016

Reporting unit	Type of cases							Total
	Pulmonary (Bacteriologically-confirmed)		Pulmonary (Clinically-diagnosed)		Extra-pulmonary		All re-treated cases, except relapses	
	New	Relapses	New	Relapses	New	Relapses		
Upazila	112,344	2,656	39,208	3,386	31,860	1,107	1,396	191,957
Metropolitan area	11,159	914	5,278	391	10,439	519	223	28,923
CDC	1,100	67	523	18	1,250	28	55	3,041
Total	124,603	3,637	45,009	3,795	43,549	1,654	1,674	223,921

Figure 10.29. Nationwide TB case notification rate (per 100 000 population/year), 2001-2016



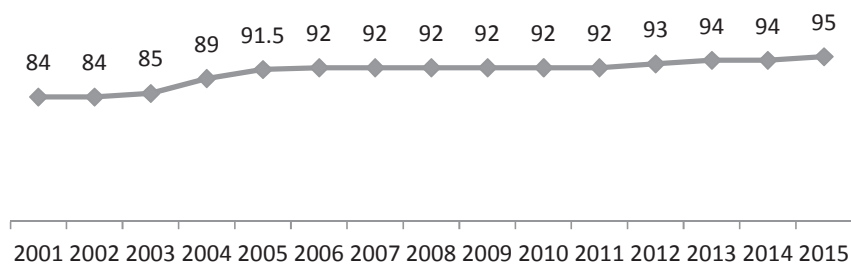
one of the ancient diseases of mankind but the cause of leprosy was not known and no effective treatment was available before 1873, the year of the discovery of the pathogen *M. leprae* (Hansen's Bacillus) by Dr. Armuer Hansen, The

discovery opened avenues to the diagnosis of and treatment for leprosy. In 1943, the sulphone drugs (dapsone monotherapy) were introduced in the treatment for leprosy. In 1960, Shepard, an American scientist was able to multiply

Table 10.14. Year-wise tuberculosis case notification by type of reporting unit, 2011-2016

Year	Area	Pulmonary smear+ve/ bacteriologically- confirmed		Pulmonary smear-ve	Extra- pulmonary	Total
		New	Relapse	New	New	
2011	Rural/Upazila	87743	1889	16,433	20,340	126,405
	Metropolitan area	9,391	698	4,442	5,648	20,179
	CDC	1,814	114	1,046	1,341	4,315
	Total	98,948	2,701	21,921	27,329	150,899
2012	Rural/Upazila	95,132	2,135	18,856	22,506	138,629
	Metropolitan area	10,068	820	4,640	6,849	22,377
	CDC	1,640	112	955	1,194	3,901
	Total	106,840	3,067	24,451	30,549	164,907
2013	Rural/Upazila	94,668	2,024	36,036	25,081	157,809
	Metropolitan area	9,372	751	5,367	7,393	22,883
	CDC	1,501	93	990	1,231	3,815
	Total	105,541	2,868	42,393	33,705	184,507
2014	Rural/Upazila	95,716	2,496	36,346	27,854	162,412
	Metropolitan area	9,585	442	5,663	83,48	24,038
	CDC	1,438	51	851	1,204	3,544
	Total	106,739	2,989	42,860	37,406	189,994*
2015	Rural/Upazila	102,192	2,223	36,885	31,186	172,486
	Metropolitan area	10,478	842	5,576	9,559	26,455
	CDC	1,278	101	617	1,255	3,251
	Total	113,948	3,166	43,078	42,000	202,192*
2016	Rural/Upazila	112,344	2,656	39,208	31,860	186,068
	Metropolitan area	11,159	914	5,278	10,439	27,790
	CDC	1,100	67	523	1,250	2,940
	Total	124,603	3,637	45,009	43,549	216,798*

*Pulmonary smear-negative relapse and extra-pulmonary relapse are not included in the total

Figure 10.30. Treatment success rate (%) of new smear-positive TB cases, 2001-2015 cohorts

leprosy bacilli in nude mouse footpad. After this success, rifampicin was discovered in the 1970s and was found more effective.

In 1985, multidrug therapy was introduced in the treatment for leprosy due to emergence of dapsone-resistant strains of *M. leprae*.

Bangladesh has achieved elimination of leprosy at the national level by the end of December 1998. It was 2 years ahead of WHO-targeted date.

Bangladesh has achieved elimination of leprosy at the national level by the end of December 1998. It was 2 years ahead of WHO-targeted date. The 'elimination' as defined by the WHO is to reduce registered prevalence to less than 1 case per 10,000 people. When WHO declared elimination, the registered prevalence was 0.87/10,000 people, and the number of endemic districts/areas were 15. After achieving elimination at the national level, the National Leprosy Elimination Program (NLEP) is consolidating its effort to achieve subnational (district-level) elimination. At the end of December 2004, the registered prevalence came down to 0.51/10,000 people, and the number of endemic districts/areas came down to 10. The NLEP has been experiencing a very slow decline of leprosy prevalence during the last twelve years, with 0.2/10,000 at the end of December 2016 (Figure 10.32).

Table 10.15. Number of MDR-TB cases enrolled for treatment, 2008-2016

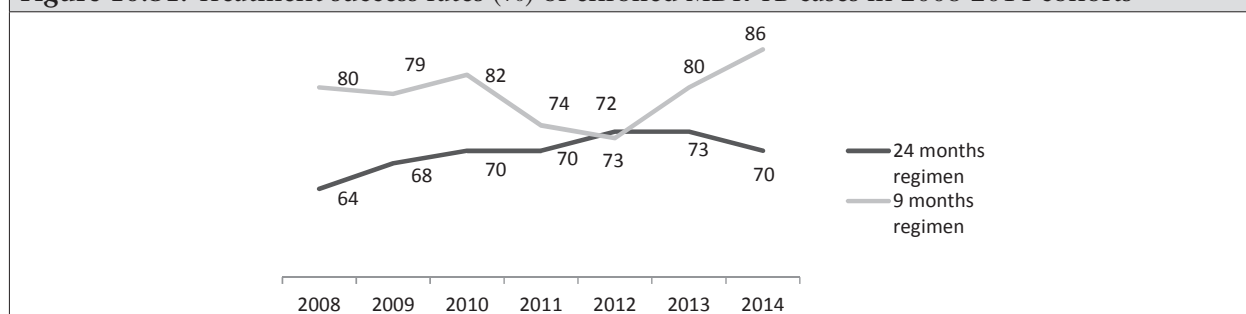
Year	24 months regimen	9 months regimen	Total
2008	107	129	236
2009	179	181	360
2010	183	154	337
2011	253	137	390
2012	376	129	505
2013	495	191	686
2014	716	230	946
2015	680	200	880
2016	750	168	918
Total	3,739	1,519	5,258

Figure 10.33 shows the number of new leprosy cases and completed MDT from 2011 to 2016. Table 10.16 and 10.17 show the division-wise new case detection and completion of MDT (cured) respectively in 2016.

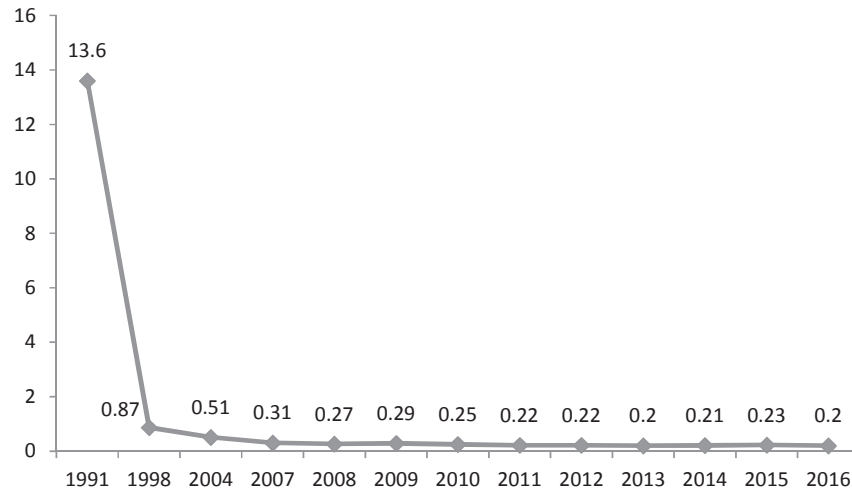
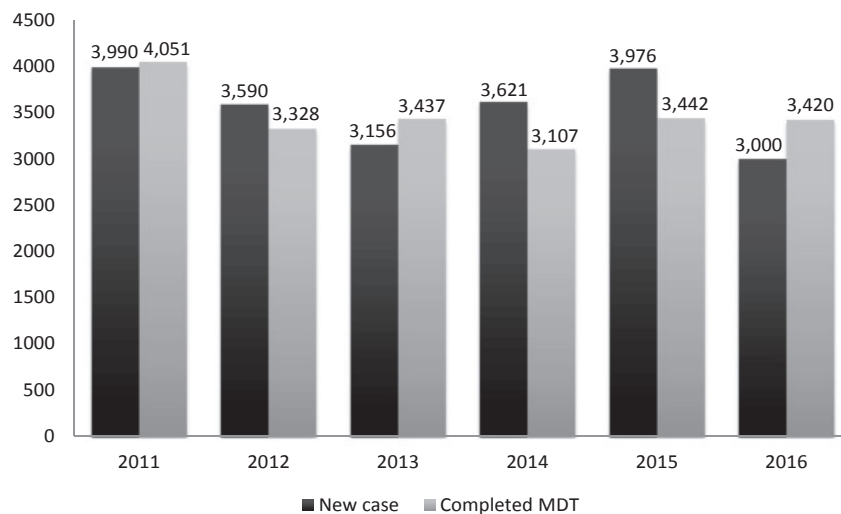
HIV/AIDS

Prevalence of HIV/AIDS is still low in Bangladesh but it remains vulnerable to an HIV epidemic because of the high prevalence in neighboring countries and the high mobility of people within and beyond the country. Inadequacy in correct knowledge about HIV and AIDS due to illiteracy, ignorance, and

Figure 10.31. Treatment success rates (%) of enrolled MDR-TB cases in 2008-2014 cohorts



Bangladesh has started implementing 9-month regimen for programmatic management of MDR-TB and has a plan to scale up throughout the country by the end of 2017

Figure 10.32. Registered prevalence rate of leprosy (per 10,000 people) in different years between 1991 and 2016 in Bangladesh**Figure 10.33.** Number of new leprosy cases detected and MDT completed (cured) under NLEP, Bangladesh, 2011-2016**Table 10.16.** Division-wise profile of the newly-detected leprosy cases, Bangladesh, 2016

Division	Population (N)	MB (N)	PB (N)	Total (N)	Registered prevalence/10,000 people
Barisal	8,734,091	5	00	5	0.01
Chittagong	31,974,243	157	126	283	0.1
Dhaka	50,285,267	387	293	680	0.17
Khulna	16,750,367	96	37	133	0.08
Rajshahi	20,432,034	164	200	364	0.17
Rangpur	17,516,298	331	771	1102	0.51
Sylhet	11,511,641	175	258	433	0.49
Total	157,203,941	1,315	1,685	3,000	0.20

Table 10.17. Division-wise leprosy cases (completed MDT) in Bangladesh in 2016

Division	MB (>5 lesions)	PB (1 to 5 lesions)	Total
Dhaka	380	504	884
Barisal	2	0	2
Chittagong	219	142	361
Sylhet	166	206	372
Khulna	81	13	94
Rajshahi	187	198	385
Rangpur	461	861	1,322
Total	1,496	1,924	3,420

gender inequity aggravate the vulnerability. The most important factors that may contribute to a potential HIV epidemic include: high rate of needle-sharing among people who inject drugs (PWIDs), low rate of condom-use, and high prevalence of sexually transmitted infections (STIs) among the key population groups.

HIV prevalence in Bangladesh is higher among key population groups (i.e. female and male sex workers (FSW and MSW), men who have sex with men (MSM), PWID, and Hijra/transgender population), with a concentrated epidemic among the PWID. This situation is similar to other countries in the region.

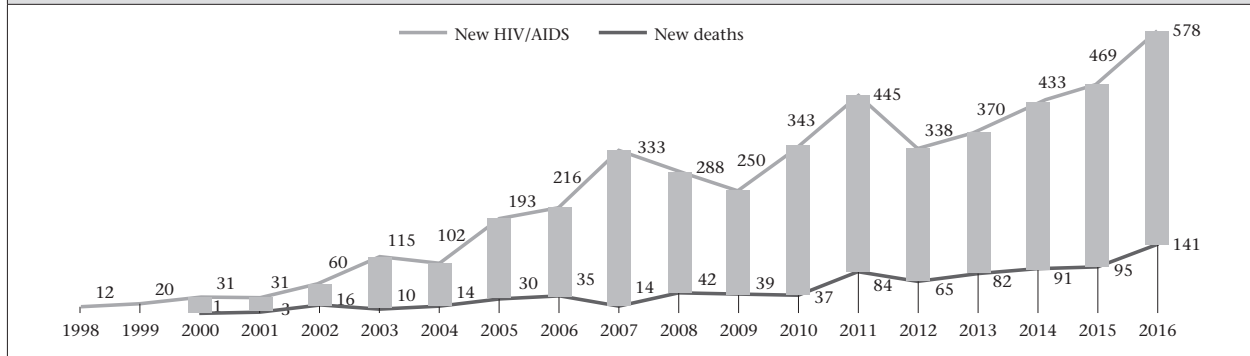
Among PWID, the prevalence rate of HIV in Dhaka was more around 5% in 2011 that has been increased to 22% in 2016. Although it is estimated that less than 0.01% of the total population of 160 million is infected with HIV, a report titled “Assessment of Impact of Harm Reduction Interventions among People Who Inject Drugs (PWID) in Dhaka City” stated the number of HIV cases is increasing rapidly.

Bangladesh has an estimated 33,067 PWID, 102,260 FSW, 101,695 MSM, 29,777 MSW, and 10,199 Hijra (according to the published Mapping Study and Size Estimation of Key Populations in Bangladesh, 2015-2016); 23% of the total population comprise young people. Due to various societal barriers, the young people have limited knowledge about HIV and AIDS.

Precautionary measures are being undertaken by the Government of Bangladesh to limit the spread of HIV infection since the detection of the first HIV-positive case in 1989. The National AIDS Committee (NAC) was formed in 1985 and reconstituted in 2017. The MOHFW is playing the leading role in the prevention of HIV and control of AIDS. AIDS/STD Program (ASP) is implementing HIV and AIDS prevention activities in Bangladesh with the guidance of three functionaries, namely the NAC, MOHFW, and the DGHS. The ASP under the DGHS is responsible for coordinating activities of all stakeholders and development partners involved in the areas of concerns.

Political history and strong commitment of Bangladesh to respond to the HIV issue helped the nation attain a unique position to succeed whereas several other developing countries have not been that successful to keep the AIDS epidemic from expanding beyond the current level. The comprehensive, timely and strategically-viable measures have prevented the spread of HIV from key populations (KPs) to the general population. To a significant extent, this is probably attributable to the willingness of the Government to acknowledge the existence of key populations and risk behaviors, which facilitated the start of effective interventions at an early time, high-quality interventions by NGOs, strong technical support from international and local agencies and communities, and a clear strategic focus by donor agencies, especially the Global Fund extending support to Bangladesh.

In total, 578 new HIV infections have been detected in 2016 (Figure 10.34). Until November 2016, the total number of detected cases was 4,721, of whom 799 people living with HIV (PLHIV) have died, leaving 3,922 known people living with HIV. However, most of the cases are likely to remain undetected; the total national estimate is around 11,700 PLHIV (source: National HIV/AIDS Estimate and Projection Using Spectrum, 2017).

Figure 10.34. New HIV/AIDS-positive cases as estimated and reported by year in Bangladesh (1989-2016)

Surveillance

Data on key population groups most at risk of HIV are being collected to assess the risk behavior and HIV prevalence through a national surveillance system which was set up by the Government of Bangladesh in 1998. The design of the surveillance system in the country was based on the UNAIDS/WHO guidelines for the second-generation HIV surveillance which aims at a flexible system so that it can be adapted to the state of the epidemic in a country and includes both serological surveillance and a behavioral surveillance survey (BSS).

MSM, MSW and TG

During May to September 2015, a cross-sectional survey was conducted to assess changes in risk behaviors and prevalence of HIV and active syphilis among MSM, MSW, and Hijra in selected sites in Bangladesh. In Dhaka, both behavioral and serological surveillance were conducted among all groups but, in Hili, only serological surveillance was conducted.

Data from the present surveillance among MSM, MSW and Hijra showed that, in Dhaka, 0.9% of the sampled Hijra, 0.3% of the sampled MSM, and 0.7% of the sampled MSW were HIV-positive. In Hili, 4.3% of the sampled Hijra were HIV-positive, although the number of sampled Hijra was only 46, and no HIV was found among MSM and MSW. Active syphilis in all groups was below 5% in all sites. The overall prevalence of HIV in Dhaka and Hili

for MSM was 0.2% (1/531), for MSW was 0.6% (3/497), and for Hijra was 1.4% (4/279). The overall prevalence of active syphilis in Dhaka and Hili for MSM was 1.1% (6/531), for MSW was 1% (5/497), and for Hijra was 1.8% (5/279). Six HIV-positive cases were identified in Dhaka; four were referred to care and support services; one was already receiving such services; and one individual could not be traced. In Hili, two HIV-positive cases were identified; one was referred to care and support services while the other could not be reached as she was traveling.

PWID

The HIV risk behaviors were found to be higher among male PWID in two neighborhoods in Dhaka designated as A1 and A2, especially with regard to drug-injecting practices. Those in A1 had injected drugs for a longer time, took more injections, shared their needles/syringes more often, and had more injection-sharing partners. When all male PWID were considered, trends over years (since 2002) showed improvement in almost all key indicators of risk. However, in 2016, 52.4% and 53.1% were still found to be sharing (whether lending or borrowing) their used needles/syringes in the last injection or in the last week respectively. Of the 197 HIV-positive male PWID, >60% borrowed or lent last week, >30% were married or had non-transactional sex partners or bought sex from FSWs; some had multiple sex partners, and <40% used condoms consistently last year with FSWs. Beyond individual risk factors, structural factors can also impact the HIV

epidemic, such as living conditions; 54.7% of HIV-positive PWID in A1 lived on the streets, and fewer compared to HIV-negative PWID lived with families. Such chaotic lifestyles impact negatively on risk-taking behaviors. Given these individual and structural risks and vulnerabilities and the networks of risk through unsterile injections and unsafe sex, further spread of HIV in this population group and beyond may be suspected.

Female sex worker (FSW)

Except the residence-based FSWs in Dhaka and Hili, the BSS was conducted in the other groups of FSWs, which showed encouraging data with significant improvements in condom-use compared to what was seen over the years; in some cases, similar results were seen between 2016 and the last BSS conducted 10 years ago in 2006-2007. Even in brothels and hotels of Dhaka where the HIV prevention services have been irregular or have declined, the last-time condom-use with new clients and regular clients was reported by 61-79% and 72-81% respectively, and consistent condom-use with such clients increased in all groups of FSWs. Fieldnotes of interviewers showed that condoms were made available through NGOs. The NGO activities in brothels on ad-hoc basis and changes in the management structure of hotels suggest that a degree of sustainability of a key ingredient of HIV prevention services has been obtained through the empowerment of community-based organizations of FSWs and by working through the existing structure of the hotel management.

Despite these improvements in risk behaviors, it was noted that FSWs selling sex in hotels of Dhaka were the most vulnerable of all the FSW groups sampled in the last round of surveillance. These FSWs had large numbers of clients, little knowledge about HIV and STIs, and of HIV testing; only 4.7% were tested, counseled, and received their HIV test results last year. Although the hotel management has undertaken responsibility for provision of condoms, the need for other services has not received due attention.

For the first time in Bangladesh, surveillance was designed to sample and analyze data from FSWs younger than 18 years of age. In the hotels of Dhaka, there were approximately equal numbers of FSWs between 15-24 years and 25-49 years while, in other places, fewer younger FSWs were found. Differences in risk behaviors between the two age-groups varied in different areas but, nonetheless, a few indicators highlighted the greater vulnerability of younger FSWs compared to the older ones as more were found to sell sex to new clients (in brothels), had more clients (in hotels), and fewer received HIV prevention services (in brothels). Bangladesh has an HIV risk reduction strategy for most at-risk adolescents, which is pertinent to the group of FSWs among whom it may be considered illegal to provide condoms.

HIV prevalence over the rounds

Over the rounds of surveillance, the overall HIV prevalence has remained at <1%, irrespective of whether the total population is considered or segregated for the key (most at-risk) and bridging populations (Figure 10.35). It is to be noted that bridging population groups (e.g. mainly truck-drivers, dockyard workers, etc.) were not sampled since Round VI of the surveillance.

Cross-border mobility in recent years among FSW, MSM, MSW, and Hijra

Two areas where more than one population group with HIV were detected include: Benapole (female PWID and residence-based FSWs) and Hili (Hijra and casual FSWs); both sites have border with West Bengal of India. It is well-recognized that mobility and migration can enhance vulnerability to HIV, and women are particularly vulnerable (Blanchet, Biswas et al. 2003). Figure 10.36 and 10.37 show the percentages of FSWs, MSM, MSWs, and Hijra living in border areas who crossed the border in the year 2011 and sold sex while abroad. It is clear that cross-border mobility is more common

Figure 10.35. HIV prevalence over the years

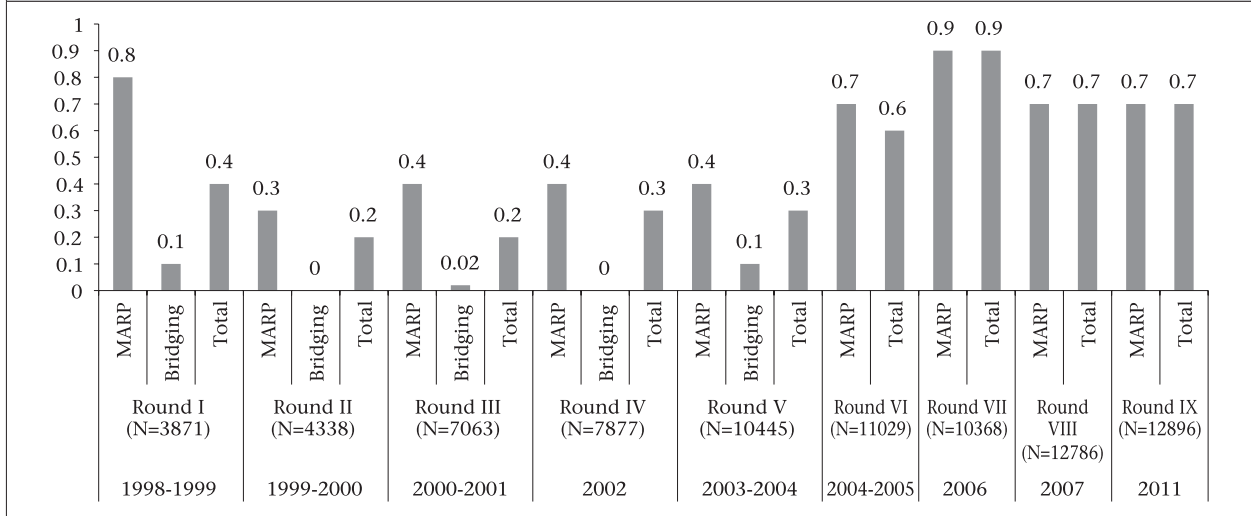


Figure 10.36. Cross-border mobility of different key populations, 2011

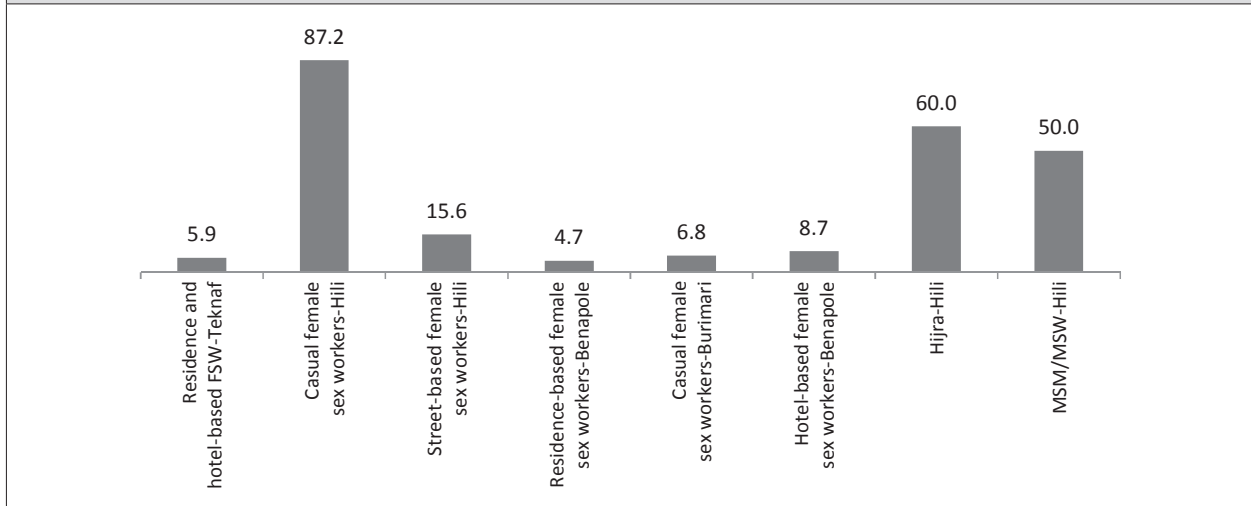
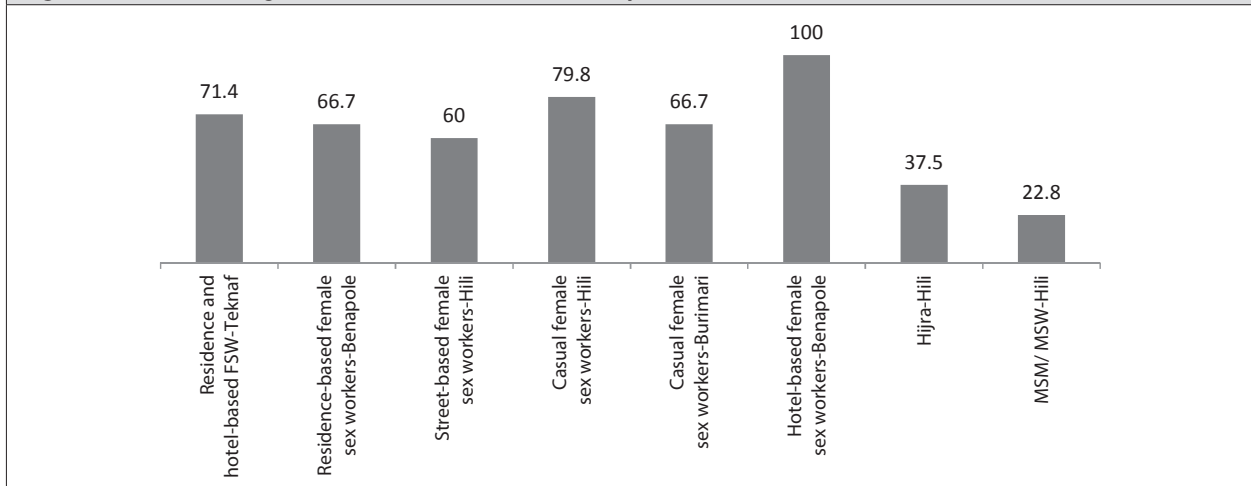


Figure 10.37. Selling sex while abroad in 2016 (by those who crossed the border in 2011)



in Hili. Little is known about the sex workers (male, female, and Hijra) living in these border areas. For evidence-based programming, a better understanding is essential.

Geographical and occupational distribution

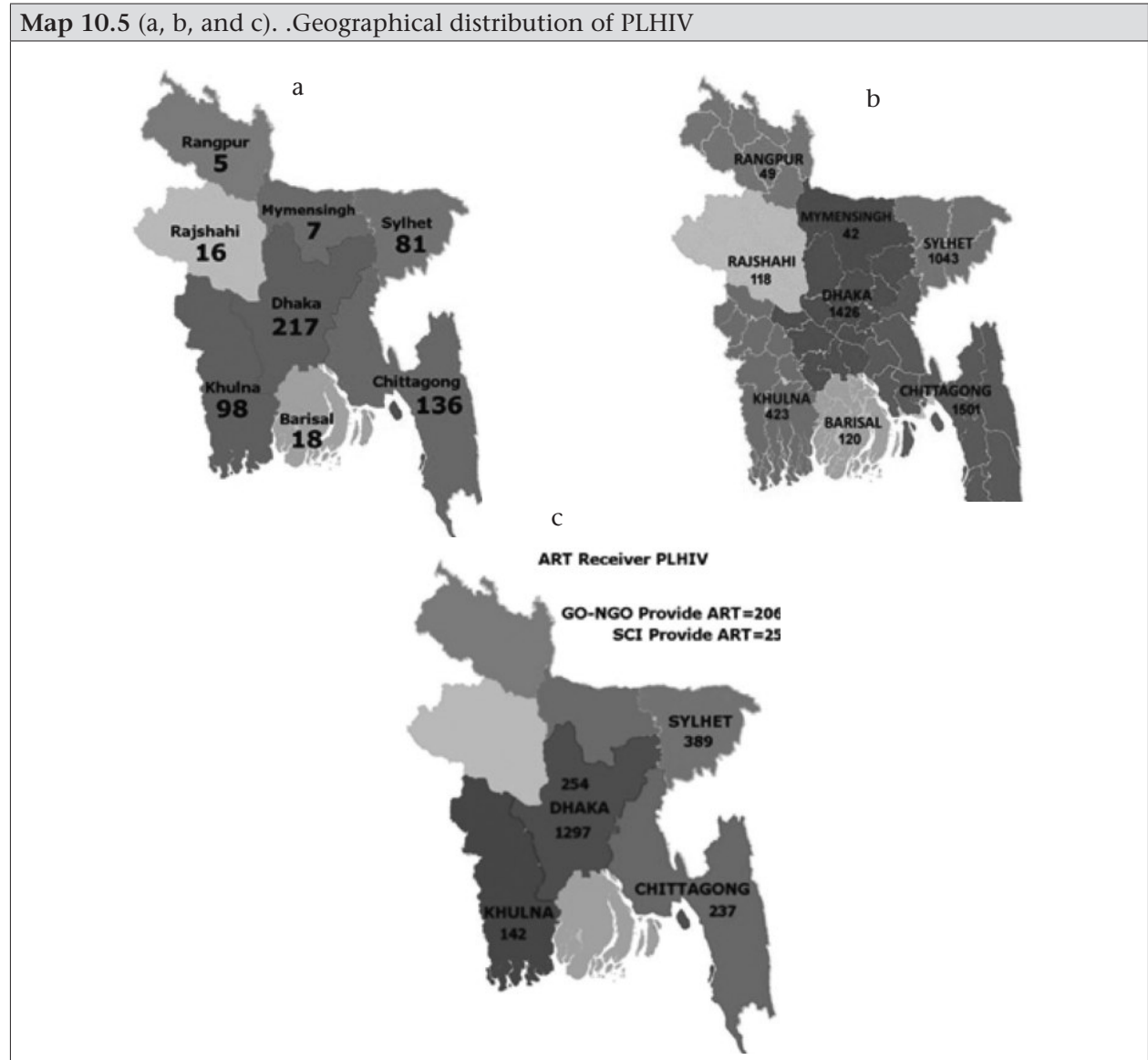
It is evident from regular case reporting that the highest number of PLHIV is recorded in Dhaka but Chittagong and Sylhet has the highest concentration of PLHIV. Map 10.5 (a, b, and c) show the division-wise case reports.

The first map (a) shows the division-wise HIV-positive cases in 2016. In total, 578 cases

were identified. Most of the cases (217) were identified in Dhaka division, 136 cases in Chittagong division, and only 5 cases were found in Rangpur division.

The second map (b) shows the division-wise commutative HIV-positive cases from 1989 to 2016. The highest number of HIV-positive cases (1,501) were identified in Chittagong division, the second highest number (1,426) in Dhaka division, and lowest number (42) in Mymensingh division.

The third map (c) shows that 2,319 HIV-positive cases received ART from different service centers



in the country. The government and NGO facilities jointly provided ART to 2,065 patients, and only 254 patients received ART from Save the Children (Source: AIDS/STD Program (ASP), Directorate General of Health Services).

Table 10.18. Estimated sizes of different key populations vulnerable to HIV/AIDS

Sl. no.	Key population	Estimated size (2015-2016)
1	Street-based FSWs	41,350
2	Residence-based FSWs	39,078
3	Hotel-based FSW	17,976
4	Brothel-based FSWs	3,856
Total FSWs		102,260
5	MSM	101,695
6	MSWs	29,777
Total MSM and MSW		131,472
7	PWID (Male)	32,021
8	PWID (Female)	1,045
Total PWID		33,066
9	TG/Hijra	10,199

Table 10.19. Key populations coverage on size estimation, 2015

Key population	Size estimation 2015	% Covered
Female sex worker (FSW)	102,260	25%
MSM and MSW	131,472	23.6%
Transgender/Hijra	10,199	39.8%
People who inject drugs (PWID)	33,067	35%

Estimated size of key populations

A new estimation of the size of key populations is being planned in Bangladesh. As per existing information, the estimated sizes of the different key populations are shown in Table 10.18.

Health service coverage among the vulnerable population groups

Female sex workers were estimated to be 102,260, of whom only 25% were covered

by health services, MSM and MSWs were estimated to be 131,472, and only 23.6% received health services. Transgender/Hijra population was estimated to be 10,199, and 39.8% of them were covered by health services. The number of PWID was 33,067, with health service coverage of only 35%.

Investment case study

An initiative relating to HIV/AIDS has been taken since January 2015 to conduct an investment case study to explore how limited resource could be used in maximizing impact and to help direct a rapid and sustainable increase in domestic and donor investments. With this backdrop, the 'Investment Case Study' in Bangladesh analyzes the HIV status and response, examines the impact and implications of various future scenarios, and establishes priorities that aim to make the response more effective, efficient, and sustainable towards the global goal of "Ending AIDS by 2030." For developing the study design, the AIDS Epidemic Model (AEM) and programmatic analyses were used.

Care, support, and treatment services

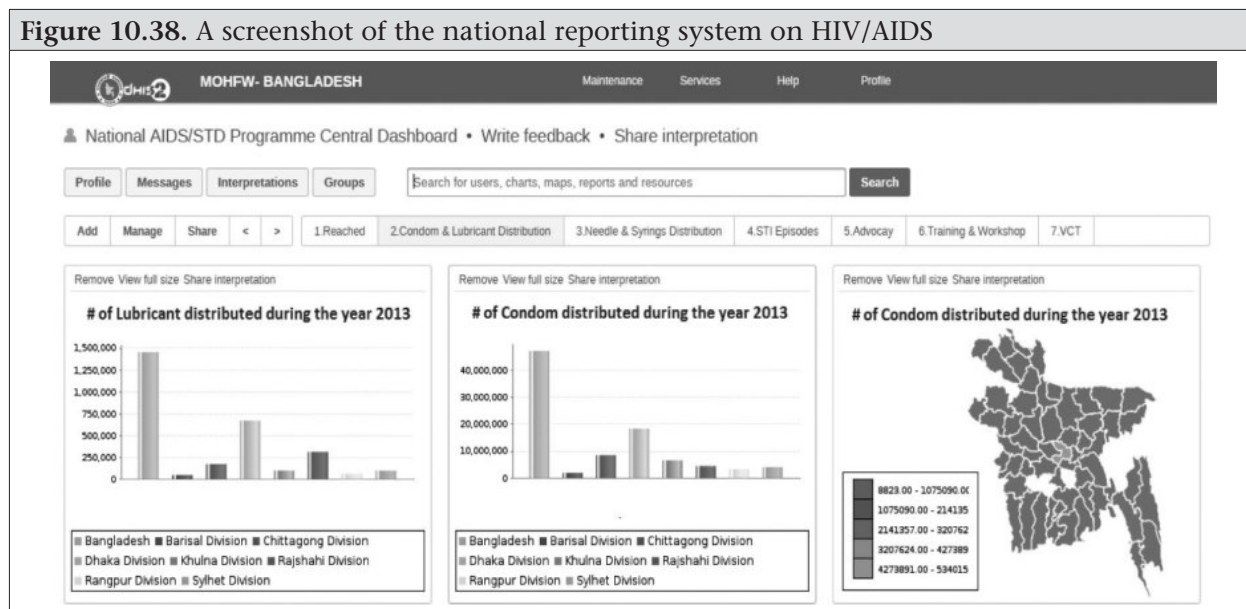
The Government of Bangladesh, under the direct supervision of ASP, has taken an initiative to provide optimum care and treatment to key populations vulnerable to HIV/AIDS and PLHIV through care, support, and treatment (CST) services at the government and NGO facilities.

The Government had a target to provide optimum care to 65% PLHIV by 2014 under the Millennium Development Goal 6 (MDG 6). So, the package of services aimed to take initiative for early detection of HIV through HIV testing and counseling (HTC) to detect more cases and increase the coverage of optimum care for PLHIV.

Government initiative for comprehensive care, support, and treatment to PLHIV

- ASP is procuring 100% ARV drugs from November 2012 onwards

Figure 10.38. A screenshot of the national reporting system on HIV/AIDS



- ARV drugs are dispensed through 5 government health facilities through GO-NGO collaboration under HPNSDP
- Twelve government health facilities are providing other services relating to PLHIV
- Eight NGO facilities are providing BCC, home-based care, community sensitization, drug adherence, opportunistic infections (OIs) management, and capacity-building of health service providers
- Three tertiary-level health institutions are supporting PMTCT (Prevention of mother-to-child transmission) among ANC attendees

In addition to the abovementioned treatment, care and support package, the Government of Bangladesh recognized the need of the key populations: FSWs, MSM, Hijra, and PWID and is providing prevention services for them. The major services covered STI management, BCC and advocacy, HIV testing and counseling (HTC), and community sensitization.

National reporting system for HIV and AIDS

In 2013, a unified online national reporting system for HIV and AIDS was established. This was a collaborative initiative among ASP, icddr,b, MIS of the Directorate General of Health Services, and UNAIDS. Previously, in

assessing the national progress of programs on HIV and AIDS, data were collected manually from each of the organizations conducting the program, which was time-consuming, infrequent, cumbersome, and prone to errors. Using the existing web portal of MIS of the DGHS where the country's overall health information is routinely collected, a unified reporting system for HIV and AIDS was initiated. Through this system, data on HIV and AIDS program relating to key populations are now being collected on output/coverage indicators every six months from all drop-in-centers (DICs) and service delivery points, including HTC centers for the general population. This web-based reporting allows assessment of the national response at a six-month interval, which facilitates ASP to monitor and plan activities in an informed manner. A screenshot of the national online reporting system is shown in Figure 10.38. Efforts are being made to incorporate data on HIV and AIDS from all agencies engaged in HIV and AIDS intervention programs into the online system since June 2013.

Activities of the Institute of Epidemiology, Disease Control and Research

Established in 1976, the Institute of Epidemiology, Disease Control and Research (IEDCR) is

the national institute for conducting disease surveillance and outbreak investigations in Bangladesh. The IEDCR has been engaged in controlling diseases and conducting research on events of public-health importance and developing public-health workforce in relevant fields.

The IEDCR undertook and implemented many important public-health interventions in 2016 on behalf of the Ministry of Health and Family Welfare of the Government of Bangladesh. Some of these interventions are highlighted below.

The IEDCR has eight departments, viz. Biostatistics, Epidemiology, Medical Entomology, Medical Social Science, Microbiology, Parasitology, Virology, and Zoonosis.

National Influenza Centre, Bangladesh

The Institute has been recognized as the National Influenza Center (NIC) of Bangladesh by World Health Organization (WHO) in 2007. All NICs throughout the world are national institutions designated by national ministries of health and recognized by WHO. The NICs form the backbone of the WHO's Global Influenza Surveillance and Response System (GISRS) for prevention and control of this health problem.

All National Influenza Centers (NICs) collect virus specimens in their countries and perform preliminary analysis. They ship representative clinical specimens and isolated viruses to WHO Collaborating Centers for advanced antigenic and genetic analyses. The results form the basis of WHO recommendations on the composition of influenza vaccine each year as well as relevant risk assessment activities.

Through its NIC, the IEDCR is currently conducting several influenza surveillances throughout the country. Some of these are independently run by the IEDCR, and some are done in partnership with icddr, in collaboration with various national and international agencies. These are (i) National

Influenza Surveillance, Bangladesh (NISB) in 10 district hospitals; (ii) Hospital-based influenza surveillance (HBIS) in 12 medical college hospitals; (iii) Community-based Influenza Surveillance in Kamalapur, Dhaka; (iv) Avian Influenza Surveillance among the high-risk groups, and (v) Surveillance of Influenza-like Illness (ILI) among the live bird-handlers in wet markets in different city corporation areas.

The IEDCR's NIC, in recent years, developed laboratory capacity and is regularly testing specimens from surveillance sites for typing and subtyping influenza viruses and sequencing for new/novel strains.

The IEDCR's NIC, in recent years, developed laboratory capacity and is regularly testing specimens from surveillance sites for typing and subtyping influenza viruses and sequencing for new/novel strains. Data are regularly submitted to FluNet and FluID of WHO by the NIC.

A total of 2,803 samples (ILI+ SARI) in 2016 were tested for flutype and subtype. Among these, 270 (9.63%) samples were positive for influenza A/Influenza B. The Influenza AH3 subtype was most prominent throughout the year whereas both Victoria and Yamagata subtypes of influenza B were circulating in the country.

Since its inception, the HBIS surveillance platform collected a total of 32,610 respiratory specimens till December 2016; among these, 4,794 (14.7%) of the specimens

were found positive for influenza virus. Among the influenza-positive cases, infection due to Influenza A was 3,115 (64.9%) and Influenza B was 1,670 (34.8%). Only 9 cases were positive for both Influenza A and B viruses. Figure 10.39 shows the subtypes found in 2016 among the laboratory-confirmed cases tested using rRT-PCR.

Outbreak investigations and responses

Since its inception, the IEDCR has conducted numerous outbreak investigations. From 2007, these are systematically recorded and posted at

IEDCR web site at www.iedcr.gov.bd. Through the National Rapid Response Teams (NRRT), the IEDCR responds to any unusual health events or diseases on an emergency basis. In 2016, the IEDCR conducted 33 outbreak investigations.

Outbreak investigations and responses included acute meningo-encephalitis, cutaneous anthrax, chikungunya, hepatitis E, diarrheal illness, mumps, leptospirosis, avian influenza, mass psychogenic illness, and unknown diseases (Figure 10.40). The IEDCR investigates and controls outbreak of zoonotic diseases through OneHealth approach. The Institute

Figure 10.39. Subtypes of the rRT-PCR-confirmed influenza by month among the samples collected by NISB in 2016

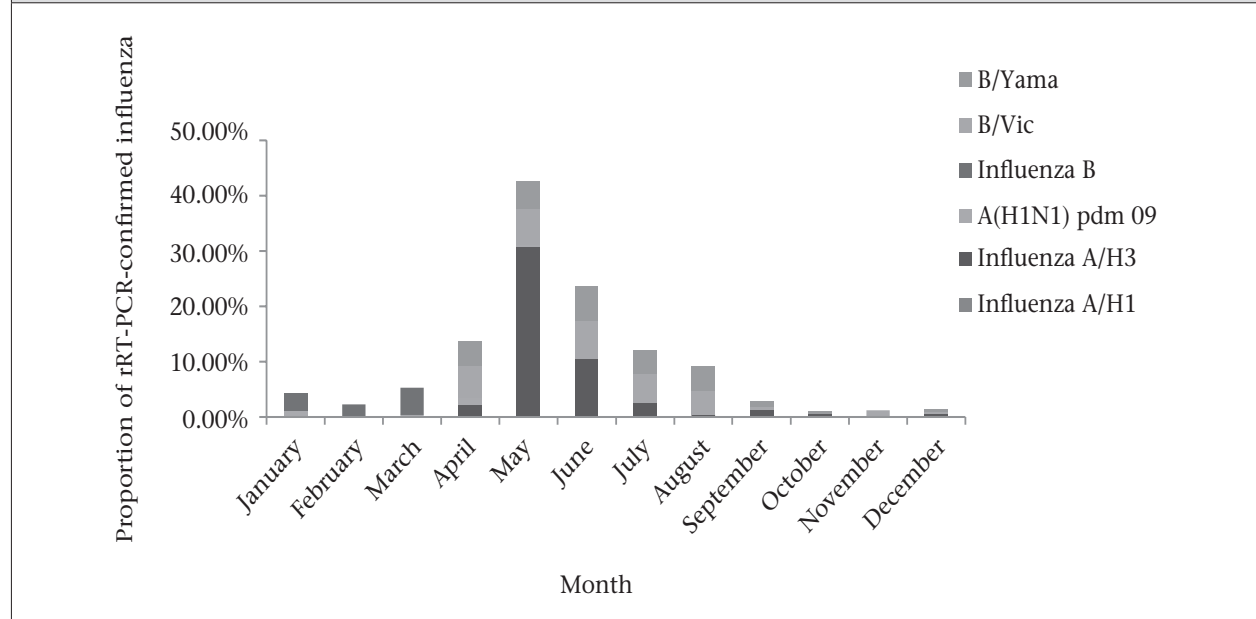
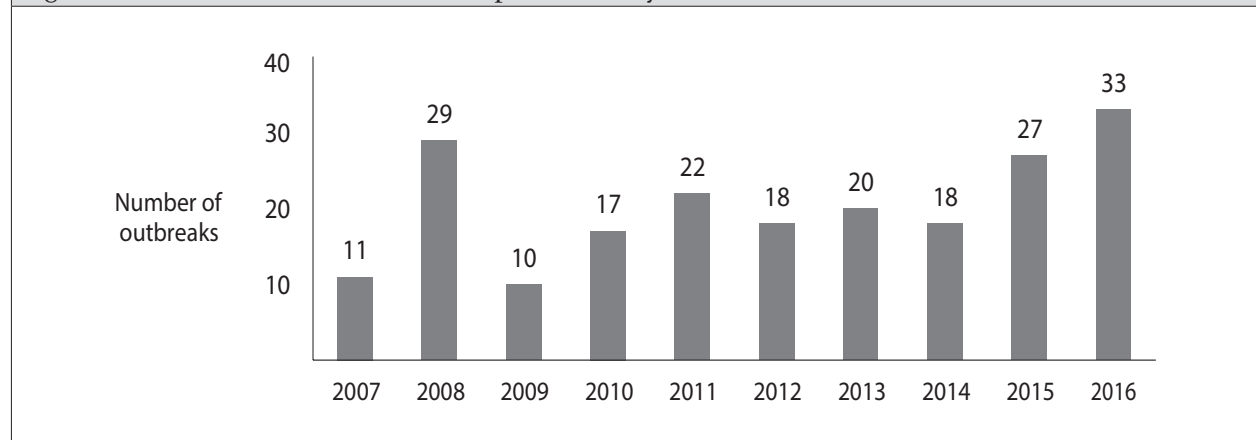


Figure 10.40. Number of outbreaks responded to by the IEDCR from 2007 to 2016



also guides and supervises District Rapid Response Teams (DRRTs) and Upazila Rapid Response Team (URRTs) for local outbreak investigations and responses.

Disease surveillance

One of the main activities of the IEDCR is disease surveillance. Routine and disease-specific surveillances are conducted round the year. The Institute collected data through disease-specific routine surveillances from all upazila health complexes, some sentinel sites, and also from the event-based surveillance, which included 24/7 hotline and media monitoring. Some important surveillances that IEDCR conducted in 2016 were as follows:

1. National Influenza Surveillance, Bangladesh (NISB)
2. Hospital-based Influenza Surveillance (HBIS)
3. Nipah Virus Transmission in Bangladesh
4. Cellphone-based Disease Surveillance System (CPBDSS)
 - a. Non-communicable Diseases (NCD)
 - b. Reproductive Health Surveillance
5. Antimicrobial Resistance (AMR) Surveillance in Bangladesh
6. Child Health and Mortality Prevention Surveillance (CHAMPS)
7. Cholera Surveillance
8. Post-MDA Surveillance for Lymphatic Filariasis Transmission
9. Molecular Xenomonitoring for Detection of Residual *Wuchereria bancrofti* Infection
10. Hospital-based Dengue Surveillance
11. Hospital-based Rotavirus and Intussusception Surveillance (HBRIS)
12. Web-based Integrated Disease Surveillance
13. Web-based Dengue Surveillance
14. Cutaneous Anthrax Surveillance
15. Foodborne Illness Surveillance (FBIS), Bangladesh that included:
 - a. Web-based surveillance
 - b. Cellphone-based surveillance
 - c. Laboratory-based surveillance for diarrhoea, jaundice, and febrile illness (enteric fever and leptospirosis)
16. Media Monitoring
17. HIV Surveillance in Bangladesh
18. Surveillance for Emerging Zoonotic Disease Threats in High-risk Interfaces in Bangladesh
19. Acute Meningo-Encephalitis Syndrome (AMES) Surveillance Focused on Japanese Encephalitis and Nipah
20. Surveillance of Unintentional Acute Pesticide Poisoning among Young Children in Bangladesh

Workforce development

Academic courses

- Two-year MSc in Applied Epidemiology under University of Dhaka and Field Epidemiology Training Program, Bangladesh (FETP,B) in collaboration with CDC, Atlanta, USA: Five fellows graduated, and seven new fellows were enrolled in 2016
- Two-year MPH/MVM in Biosecurity and Fellowship in OneHealth with Massey University, New Zealand: Five fellows graduated in 2016
- Two-year course on Improving Public Health Management for Action (IMPACT) in collaboration with CDC, Atlanta, USA: Six fellows of the first batch were enrolled in 2016
- Three-month Frontline FETP,B course in collaboration with CDC, Atlanta, USA: Two batches (42 government doctors, 32 physicians, and 10 veterinary doctors) completed their graduation in 2016

Table 10.20. List of training programs, with number and type of participants	
Name of training program	Participants
Modified EPI data-collection tools for medical doctors	384 doctors
Emerging diseases surveillance for upazila health and family planning officers	226 upazila health and family planning officers (UHFPOs)
laboratory SOPs, SOPs for sample collection, storage and transportation to NIC for medical doctors and medical technologists	430 doctors and 114 medical technologists
Outbreak investigations for medical doctors	126 doctors
AMR surveillance protocol for medical doctors, nurses and medical technologists	26 doctors, 26 nurses, and 5 medical technologists
Laboratory diagnosis of emerging and re-emerging diseases for laboratory personnel	99 medical technologists

Table 10.20 shows the training programs in 2016.

Research/surveys conducted in 2016

- National Tuberculosis Prevalence Survey, Bangladesh
 - Behavioral Adaptations in live poultry trading and farming systems and zoonoses control in Bangladesh (BALZAC)
 - The effects of climate variability, seasonal variations, and environmental events on drinking-water quality, diarrhea prevalence, and WASH Behavior in Bangladesh
 - Evaluation of mechanism to improve mobile phone survey metrics
 - Investigation of anthrax outbreaks and risk factors for anthrax in humans and livestock in Bangladesh
- Piloting hospital infection control interventions for severe infections spread by respiratory droplets and direct contact routes
 - Estimating the incidence of maternal and neonatal deaths from hepatitis E virus (HEV) in Bangladesh
 - Behavioral risk surveillance and characterization at animal-human interface for zoonotic diseases
 - Understanding the ecology of antimicrobial resistance (AMR) in wildlife
 - Understanding the ecology of Nipah virus in Bangladesh
 - Students' research
 - √ Transmission of avian influenza at the human-animal interface
 - √ Improving weekly reporting of adverse events following immunization
 - √ Viral etiology of under-five SARI patients
 - √ Utilization of road-traffic accident (RTA) reporting system in selected district and subdistrict hospitals of Bangladesh
 - √ Improving tuberculosis control program's data quality by increasing monitoring system
 - √ Detection of first leptospirosis outbreak in Bangladesh
 - √ Characterization of poultry movement and contact patterns associated with transmission of newly-introduced subtypes of avian influenza virus in Bangladesh
 - √ Association of date-palm sap management practices with risk of Nipah virus infection in people in Bangladesh

Laboratory capacity of IEDCR

The IEDCR started its journey with 5 (five) laboratories: (i) Virology, (ii) Parasitology, (iii) Microbiology, (iv) Entomology, and (v) Zoonosis. In recent years, the country has experienced a number of significant outbreaks of emerging

The IEDCR has the national reference laboratories for influenza, Nipah, and HIV.

and re-emerging infectious diseases, including dengue, Nipah virus infection, chikungunya, avian influenza, pandemic influenza H1N12009, Japanese encephalitis, hepatitis E, cutaneous anthrax, etc. In response to IHR (2005), the IEDCR has taken initiative to augment and strengthen its laboratory capacities to identify outbreaks or pathogens responsible for public-health disasters. The IEDCR has the national reference laboratories for influenza, Nipah, and HIV. These laboratories play a significant role in the diagnosis of emerging infections, conduct and assist in training programs for laboratory personnel, and take part in quality assurance program.

Virology Laboratory: Virology laboratories are able to keep pace with the advancements in laboratory technologies, including virological analysis and the use of molecular biological tools for early diagnosis, typing, and characterization of microorganisms. In the Virology Department, there are three reference laboratories of biosafety level 2 (BSL2), i.e. Nipah Laboratory,

Influenza Laboratory as NIC and HIV Laboratory are dealing with diagnosis of respective diseases and surveillance. One common Virology Laboratory, with a wing of cell-culture lab and one BSL3 laboratory contributed to the strengths of the IEDCR. The IEDCR has a well-equipped PCR Laboratory with real-time and conventional PCR facilities. This PCR tools are very useful for early diagnosis of outbreaks, mapping the disease, and for selecting the vaccine strain of influenza). It has helped in taking interventional steps promptly in previous pandemic and outbreaks. These facilities are available since July 2009. The BSL3 laboratory is a prefabricated laboratory bought

from China as a national asset by GOB funds in 2009. This high-containment laboratory is a separate elegant infrastructure of the IEDCR to handle high-risk microorganisms and novel viruses.

In 2016, the IEDCR's virology laboratories tested 188 samples for Nipah virus, 1,294 samples for suspected Japanese encephalitis virus, 242 samples for dengue, 147 samples for chikungunya, 576 samples for screening ZIKV, and 16 samples for suspected MERS CoV.

Microbiology Laboratory: For staining, bacteriological culture, microscopy, and other rapid tests, facilities are available for diagnosis of microbiological diseases. This BSL2 laboratory is capable of diagnosing anthrax, cholera, salmonella, gonorrhoea, syphilis, etc. Laboratory support for investigation of bacterial meningitis is also available. Water-testing facility is functioning. This laboratory is working as a focal laboratory for Antimicrobial Resistance (AMR) Surveillance and Foodborne Illness Surveillance (FBIS).

Parasitology Laboratory: The laboratory is capable of diagnosing malaria, kala-azar, and filariasis by staining, microscopy, and ICT.

Entomology Laboratory: The laboratory of Medical Entomology Department is carrying out biological efficacy tests for different types of insecticides (of public-health importance) supplied by different departments. The insecticides are tested against mosquitoes, houseflies, cockroaches (American and German), and bed-bugs. This department is providing regular services free of charge for many organizations. The Plant Protection Wing of the Ministry of Agriculture sends insecticides for registration purpose, Bangladesh Standard and Testing Institution sends samples for quality control, and other departments send samples for quality assurance of insecticides before purchase.

In 2016, Medical Entomology Department investigated the bio-efficacy of 208 insecticides;

among those, common were coils, adulticides, larvicides, impregnated mosquito nets, aerosol, vaporizer, repellent gel, repellent cream, repellent lotion, cockroach chalk, cockroach gel, cockroach powder, insect growth regulator, etc.

Quality of the IEDCR laboratories has been assessed through parameters, like internal quality control, i.e. availability of SOPs, and participation of laboratories in External Quality Assurance (EQA) program offered by WHO and CDC.

Biosafety Program: Laboratory biosafety program is designed to prevent injury and illness in all laboratory personnel, medical, technical and ancillary staff. As a specialized laboratory dealing with pathogens of highly-infectious nature (Nipah, avian influenza, HIV), the IEDCR has been trying to achieve safe work practices through periodic training on raising awareness, practices, and availability of safety devices.

Collaboration/Referral System: The IEDCR laboratories have established collaboration with the national and international public health laboratories.

Other activities in 2016

Joint External Evaluation (JEE)

This assessment was a joint exercise of Bangladeshi experts and the external team of experts, using the tool of World Health Organization (WHO) International Health Regulation (IHR) Joint External Evaluation (JEE). The multisectoral international External Evaluation Team consisting of individuals selected on the basis of their recognized technical expertise from a number of countries and advisors representing international organizations conducted the assessment. The assessment took place from 8 to 12 May 2016. The IEDCR successfully hosted the evaluation team. Bangladesh is the fifth country to complete the JEE process, following Ethiopia, Tanzania, Mozambique, and Pakistan.

Bangladesh has made great strides in complying with the IHR (2005) but there are opportunities for improvement in each technical area that require the country's highest commitment and support, working closely together with development partners.

International collaboration

The IEDCR is 8th Global Disease Detection (GDD) center for CDC, Atlanta, USA. It is also the focal institute of Global Health Security (GHS) and International Health Regulation (IHR) and Food Emergency Response. The IEDCR is a member of the International Association of National Public Health Institutes (IANPHI). Director of IEDCR is a member of the Executive Board of IANPHI. The IEDCR is a member of the Global Outbreak Alert and Response Network (GOARN). The IEDCR is also a member of the International Network of Food Safety Authorities (INFOSAN), Advisory Committee of Joint External Evaluation (JEE). The IEDCR has collaborative activities with the Centers for Disease Control and Prevention (CDC) of USA, Rockefeller Foundation, icddr,b, and IANPHI. The Institute is supported by World Health Organization (WHO), United Nations Children's Fund (UNICEF), Food and Agriculture Organization (FAO) of the United Nations, United States Agency for International Development (USAID), other United Nations (UN) agencies, and international agencies. The IEDCR also has collaboration with University of Cambridge (UK), Massey University (New Zealand), Johns Hopkins University (USA), Columbia University (USA), and Emory University (USA).

Safe Blood Transfusion

The then Institute of Postgraduate Medicine and Research (IPGMR)—now called Bangabandhu Sheikh Mujib Medical University (BSMMU) started blood transfusion services in 1972. A blood bank was inaugurated by Father of the Nation Bangabandhu Sheikh Mujibur Rahman. From blood banking to transfusion medicine, the journey was not smooth. To

ensure maximum safety for both donors and recipients of blood or blood-derived products, the Safe Blood Transfusion Program (SBTP) was launched in 2000 by Hon'ble Prime Minister Sheikh Hasina. The SBTP was operated under the Health and Population Sector Program (HPSP) 1998-2003, with the assistance of UNDP. Under this program, blood-screening facilities were developed in 99 blood transfusion centers. In 2004, the activities of the SBTP received financial support from the World Bank and DFID through IDA credit. A Memorandum of Understanding (MoU) was signed between

The activities of the Safe Blood Transfusion Program are now being continued under the 4th Health, Population and Nutrition Sector Program (HPNSP) 2017-2021.

the Ministry of Health and Family Welfare and WHO under HIV/AIDS Prevention Project (HAPP), with technical assistance from the latter. This continued till 2007. Since then, the activities were being implemented under the Health, Nutrition and Population Sector Program (HNPSP) 2003-2011. The activities of the Safe Blood Transfusion Program are now being continued under the 4th Health, Population and Nutrition Sector Program (HPNSP) 2017-2022. Previously, it was guided by Director NASP. Now, the Director (HSM) is serving as the line director of SBTP. The rules and regulations of the Safe Blood Transfusion Act 2002 of Bangladesh were circulated in 2008, which are still in place.

Five years' statistics of blood screening

Over the last 5 years (2012 through 2016), the SBTP-supported transfusion centers tested

Table 10.21. Screening report for blood with TTIs, 2012–2016

Year	No. of units tested	No. of units rejected	Causes of rejection with no. and percentages											
			HIV		Hepatitis B		Hepatitis C		Syphilis		Malarial parasites		% of the total	
			%	No.	%	No.	%	No.	%	No.	%	No.		
2012	541,682	6,241	1.152	56	0.010	5,052	0.933	676	0.125	399	0.074	58	0.011	
2013	593,774	6,489	1.093	37	0.006	5,184	0.873	597	0.101	573	0.097	98	0.017	
2014	651,718	6,867	1.054	74	0.011	5,529	0.848	462	0.071	754	0.116	48	0.007	
2015	679,681	6,903	1.016	46	0.007	5,428	0.799	752	0.111	605	0.089	72	0.011	
2016	629,626	6,123	0.972	47	0.007	5,110	0.812	246	0.039	690	0.110	30	0.005	
Total	3,096,481	32,623	1.054	260	0.008	26,303	0.849	2,733	0.088	3,021	0.098	306	0.010	

Table 10.22. Contributions of individual infectious agents as percentage of all rejections during 2012-2016

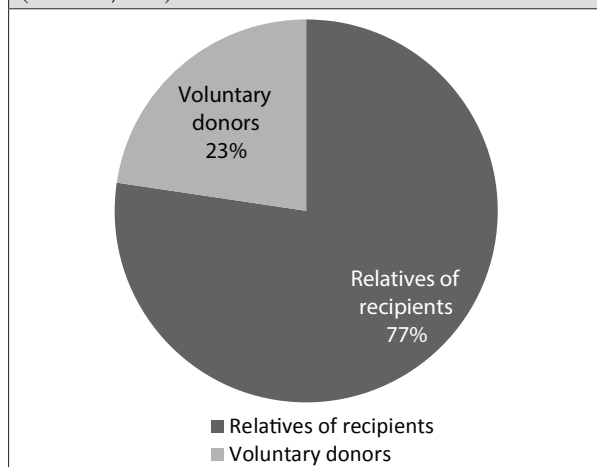
TTIs	% contribution (N=32,623)				
	2012	2013	2014	2015	2016
Hepatitis B	80.95	79.89	80.52	78.63	83.46
Hepatitis C	10.83	9.20	6.73	10.89	4.02
HIV	0.90	0.57	1.08	0.67	0.77
Malarial parasites	0.93	1.51	0.70	1.04	0.49
<i>Treponema pallidum</i> (causing syphilis)	6.39	8.83	10.98	8.76	11.27

3,096,481 units of blood, out of which 32,623 (1.05%) units were declared unacceptable for transfusion. Each of the blood units was tested for 5 types of infectious agents, viz. hepatitis B virus, hepatitis C virus, HIV, malarial parasites,

and *Treponema pallidum* (bacterium causing syphilis). Collectively, they are known as transfusion-transmitted infections (TTIs). The overall percentage of rejection linearly decreased over this 5-year period. Table 10.21 summarizes the year-wise results of the screening.

Hepatitis B virus infection was by far the most prominent among the TTIs causing more than 83% of all rejections in 2016. Table 10.22 shows the year-wise contribution of each of the TTIs as percentage of rejections due to all five of the above causes.

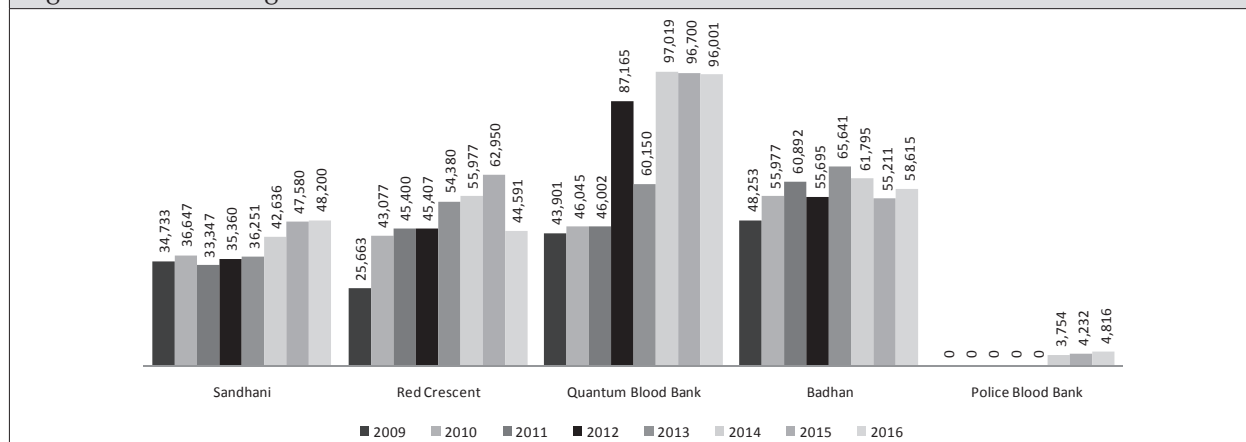
Figure 10.41. Distribution of voluntary and directed relative blood donors in 2016 (N=629,626)



Voluntary blood donations

The Safe Blood Transfusion Program made a good progress over the past years through reduction in the number of paid donors from 70% to 0%, capacity-building for blood screening for HIV, hepatitis B and C, syphilis, and malaria in all blood transfusion centers,

Figure 10.42. Number of blood units collected by different voluntary blood-donation organizations during 2009-2016



and expansion of activities down to the upazila health complex level.

Among the 629,626 units of blood collected in 2016 by the SBTP-supported centers, the contributions of voluntary donors were 142,510 units, and the rest (487,816 bags) were collected from the relatives of the recipients. The percentage distribution of voluntary and directed relative blood donors in the SBTP-supported centers in the same year is shown in Figure 10.41.

In addition to the SBTP-supported centers, a number of voluntary or non-profit organizations also contribute to encouraging healthy donors for donating blood voluntarily. Figure 10.42 shows the year-wise number of blood units collected by the major voluntary blood-donation organizations. It reveals that their contributions to safe blood transfusion in terms of the number of collected bags are steady over the past 8 years (2009 through 2016).

NON-COMMUNICABLE DISEASES

Changing population structure adds to the burden

In the current Health, Population and Nutrition Sector Program (HPNSP) 2017-2022, prevention and control of non-communicable diseases is one of the topmost priority areas of healthcare in the country.

Mostly middle-aged persons and the elderly worldwide are affected with non-communicable diseases (NCDs). The same situation prevails in Bangladesh also. NCDs have a major share of the overall disease burden and mortality. Changing dietary habits and lifestyle, rapid urbanization, growth of commuting, tobacco-use, uncontrolled growth and consumption of processed foods and beverages, indoor air pollution, road-traffic injuries, lack of awareness about healthful behavioral patterns, and psychological pressure are among the important factors responsible for non-communicable diseases. For enhanced life-expectancy, the proportion of population affected with NCDs is on the rise. In the current Health, Population and Nutrition Sector Program (HPNSP) 2017-2022, prevention and control of non-communicable diseases is one of the topmost priority areas of healthcare in the country. The relevant Operational Plan under the ongoing HPNSP 2017-2022

divided non-communicable diseases into 15 components and 2 groups, viz. Major NCDs and Other NCDs.

The first group includes major NCDs, like cardiovascular diseases (CVDs), peripheral vascular diseases (PVDs), cerebrovascular disease (stroke), cancer, diabetes, chronic obstructive pulmonary disease (COPD), renal diseases, etc. The components included in other group are: occupational health; environmental health hazards (originated from water, arsenic, air, and soil); mental health; autism; neurodevelopmental disorders (NDDs); substance-abuse and drinking alcohol at the harmful level; strengthening the prevention and treatment for disability through physical therapy/physiotherapy, especially among elderly people/senior citizens; palliative care; ear care; oral health; prevention of thalassemia; injury, including poisoning and snake-bite; climate change; emergency preparedness and response (EPR); and post-disaster health management.

WHO published NCD Country Profile 2014: it reported that NCDs account for 59% of total deaths in Bangladesh (cardiovascular diseases 17%, chronic respiratory diseases 11%, cancers 10%, injuries 9%, diabetes 3%, and other NCDs 10%).

Population-level studies on NCDs are inadequate. Zaman *et al.* reported that the prevalence of ischemic heart disease among adult population is 3.4%. Prevalence of stroke is 9.4 per 1000 people aged 30 years or older. The national Sample Vital Registration System (SVRS) of the Bangladesh Bureau of Statistics (BBS) estimates that cardiovascular and cerebrovascular diseases are the major causes of death, followed by asthma and respiratory diseases. CVDs have an age-standardized mortality rate of 411 per 100,000 people. CVDs and hypertension have been showing an increasing trend. Data on national-level prevalence of diabetes are hardly available. Approximately 5.5% adults were found to have diabetes in STEPS 2006 survey. IDF Atlas 2014 provides a prevalence of 6.3% in Bangladesh. COPD-related data are rare. Among people aged 30 years or older, the prevalence of COPD is 29.7 per 1,000 people (WHO survey).

According to GLOBOCAN 2012, the number of new cancer cases per year is 122,700. Age-standardized incidence rate is 104.5 per 100,000 people. Five most-frequent cancers in male and female are: cancers of breast (12.1%), esophagus (11.3%), cervix uteri (9.7%), lung (8.8%), and lip and oral cavity (8.7%).

Survey on mental health in Bangladesh revealed that 16.1% of adults and 18.4% of children and adolescents suffer from any form of mental disorders. Common mental illnesses in adults are: anxiety disorders, depression, schizophrenia, and substance-abuse. In children and adolescents, mental retardation is found to be 3.4%, and autism to be 0.8%.

To control NCDs, data collection from population and facilities is very important. Population-based data come from different third-party surveys, like STEPS, GATS, BDHS,

etc. For facility-based data, the Management Information System of the DGHS has created a strong network ranging from community clinics to tertiary hospitals.

Data from community clinics and health facilities from upazila (subdistrict) level and above are entered in DHIS2.

Data from community clinics

- Screening: Fasting blood glucose (use of medication if diabetic); blood pressure (use of medication if hypertensive), screening for malnutrition among under-five children
- Identification for referral: Heart disease, stroke, asthma, renal disease, cancer, nutritional and mental disorders (unspecified)
- Risk factors: Tobacco-use (smokeless or smoking); consumption of alcohol, extra table salt, vegetables, fruits, physical activity
- Measurements: Height, weight, and BMI

Data from facilities at the upazila (subdistrict) level and above

At tertiary hospitals, data on stroke, heart ailments, cancer, and mental illness are kept ward-wise in the records of inpatients; treatment duration, regimens, and outcomes are not reported.

Individual-level ICD-10-coded diagnosis and cause of death of admitted patients are recorded in and reported from all hospitals run by the DGHS. Sorting out NCDs from the diagnoses and causes of death, with age and sex disaggregation, is technically possible.

The Management Information System (MIS) of the DGHS included visualization of the SDG indicators in its online dashboard (Figure 11.1). This dashboard displays both survey data and routine health-related data from more than 14,000 public health facilities in Bangladesh. The routine data come from DHIS2. A near-real-time status of the SDG indicators, including those relating to NCDs, can be visualized from

the dashboard. At present, the indicators are disaggregated into divisional levels but soon it would be possible to drill the indicator values down to the district and upazila (subdistrict) levels.

DHIS provides cross-sectional information on diabetes prevalence (at a point in time). In upazila health complexes, district hospitals, and medical college hospitals, NCD-related data on indoor patients are captured and identified using ICD-10 codes. However, ensuring the quality of ICD-10 coding remains a notable challenge.

Indicators for hypertension and diabetes have been incorporated into results framework of the Health, Population and Nutrition Sector Program (HPNSP) 2017-2022 (Table 11.1).

Summary of data gathered from different specialized hospitals is presented below to understand the volume of patient-loads in the hospitals and the share of national disease burden contributed by NCDs.

National Institute of Cardiovascular Diseases

The numbers of outdoor visits and admissions in the National Institute of Cardiovascular Diseases (NICVD) in the last eight years (2009-2016) are shown in Figure 11.2. The Annex to the Chapter presents more detailed information from 2002 to 2016, with disaggregation of males, females, and children, including average daily outdoor visits and admissions, average length of stay, and bed-occupancy rate.

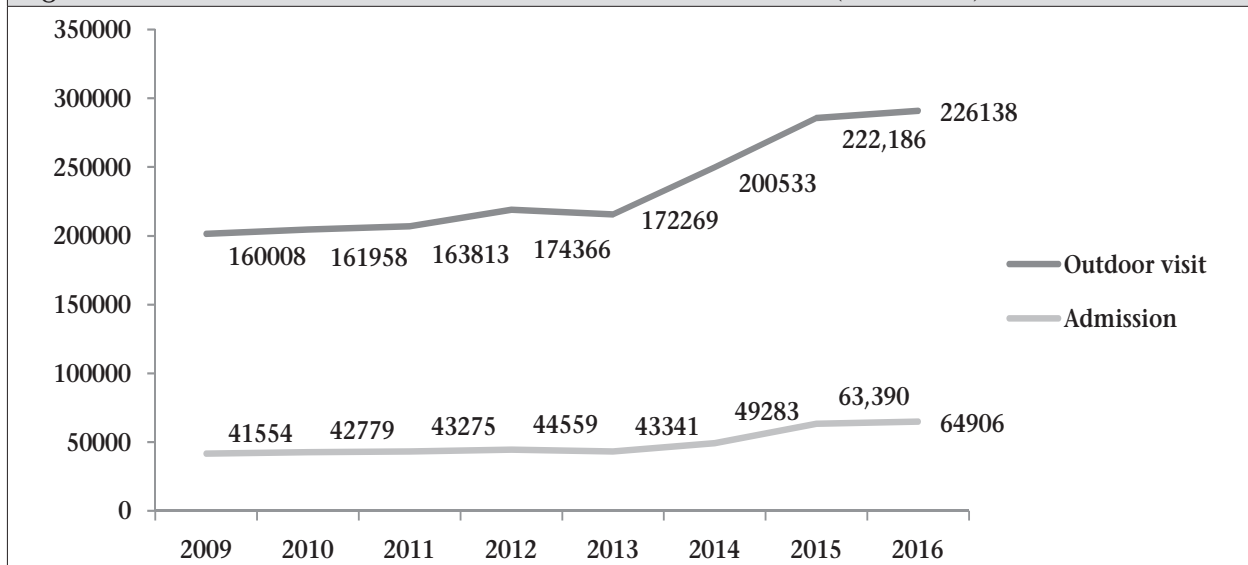
A total of 4,544 exercise tolerance tests (ETTs) were done in the institute during 2016; the

Figure 11.1. SDG dashboard of the DGHS



Table 11.1. Results Framework 2016-2021 of the 4th HPNSP

Disease	Results framework 2016-2021			
	Indicator	Verification	Baseline	Target (2021)
Diabetes	Prevalence of diabetes among women and men aged 35 years and older	BDHS; NCD RF	11.2% BDHS 2011	10%
Hypertension	Prevalence of hypertension among women and men aged 35 years and older	BDHS; NCD RF	31.9% BDHS 2011	30%

Figure 11.2 Numbers of outdoor visits and admissions in NICVD (2009-2016)

recipients of services included 69.67% males (n=3,166) and 30.33% females (n=1,378). Annex to the Chapter provides the detailed data on ETTs from 2001 to 2016.

Figure 11.3 shows the numbers of cath-lab procedures done in the NICVD in 2010-2016. A total of 5,537 coronary angiographies, 163 cardiac cath, 186 other (peripheral/renal) angiographies and 4,804 other procedures were done in 2016. Detailed data on the various cath-lab procedures done in the Institute from 2003 to 2016 are presented in the Annex to the Chapter.

The numbers of heart and vascular surgeries done in the NICVD in 2016 are shown in Table 11.2. These included a total of 995 open-heart surgeries and 1,824 vascular surgeries. Detailed data on heart and vascular surgeries from 2000 to 2016 are presented in Annex to the Chapter.

National Institute of Kidney Diseases & Urology

The National Institute of Kidney Diseases & Urology (NIKDU) is a specialized postgraduate institute and training center. Postgraduate courses, like MD (Nephrology), MD (Pediatric Nephrology), MS (Urology) and postgraduate training on nephrology, urology, pediatric nephrology, radiology and imaging,

biochemistry, histopathology, microbiology, immunology, hematology, and anesthesiology are offered at the Institute.

Figure 11.4 shows the numbers of outdoor and indoor patients treated in this institute from 2012 to 2016. The Annex provides detailed disaggregated data on males, females, and children for 2015 and 2016. In 2016 OPD visits were made by 62,925 males, 38,823 females, and 5,687 children, the total being 107,435.

Among the indoor patients, 3,101 were males, 1,964 were females, and 559 were children, the total being 5,624.

National Institute of Cancer Research & Hospital

As the country's only tertiary-level government hospital, the National Institute of Cancer Research & Hospital (NICRH) has taken a comprehensive approach to tackling cancer through prevention, diagnosis, treatment, and survivorship. Availability of modern equipment made a significant shift of the treatment approach towards more efficient services. With a group of highly-qualified, eminent and visionary personnel, this institute has been offering services to cancer patients. The hospital building already started functioning with 300-bed capacity having all modern

Figure 11.3. Numbers of cath-lab procedures done in the NICVD from 2010 to 2016

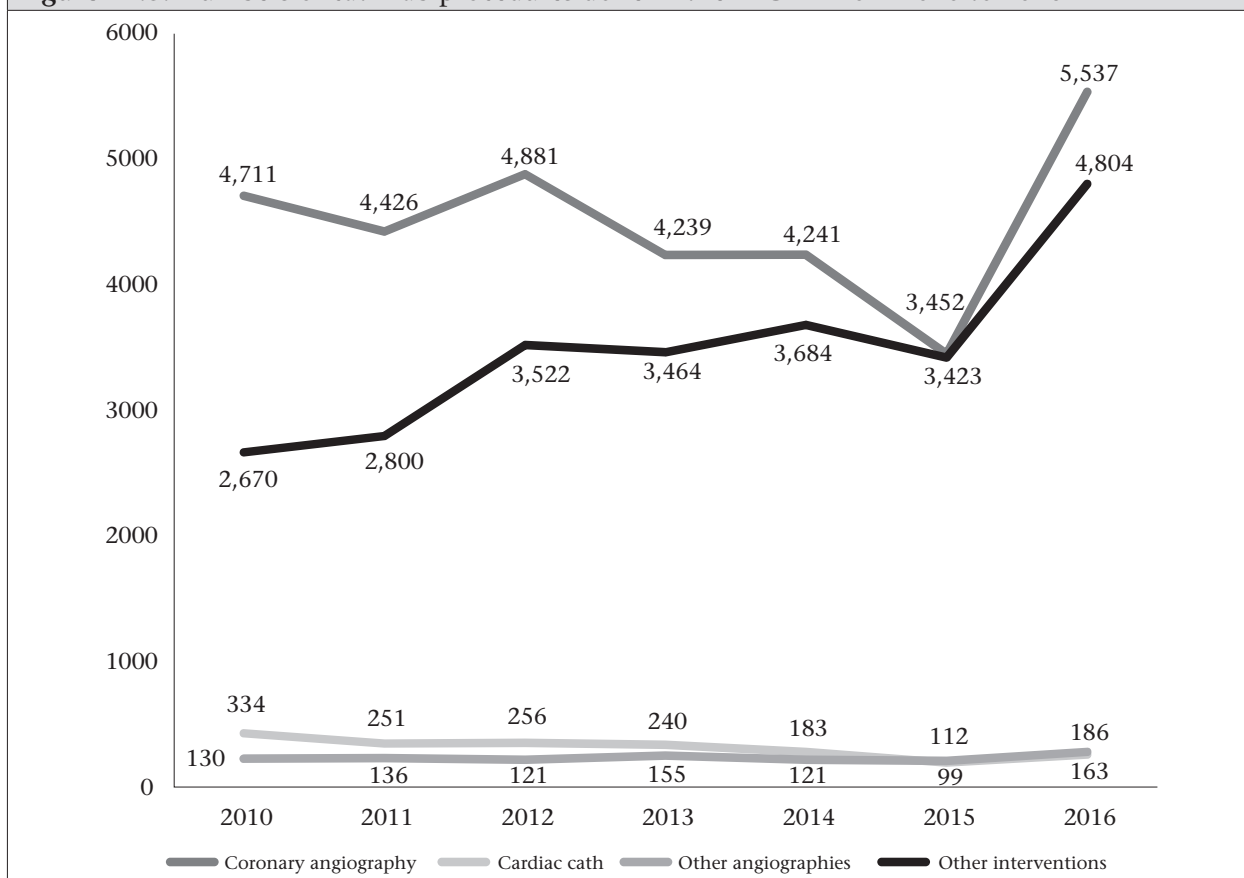
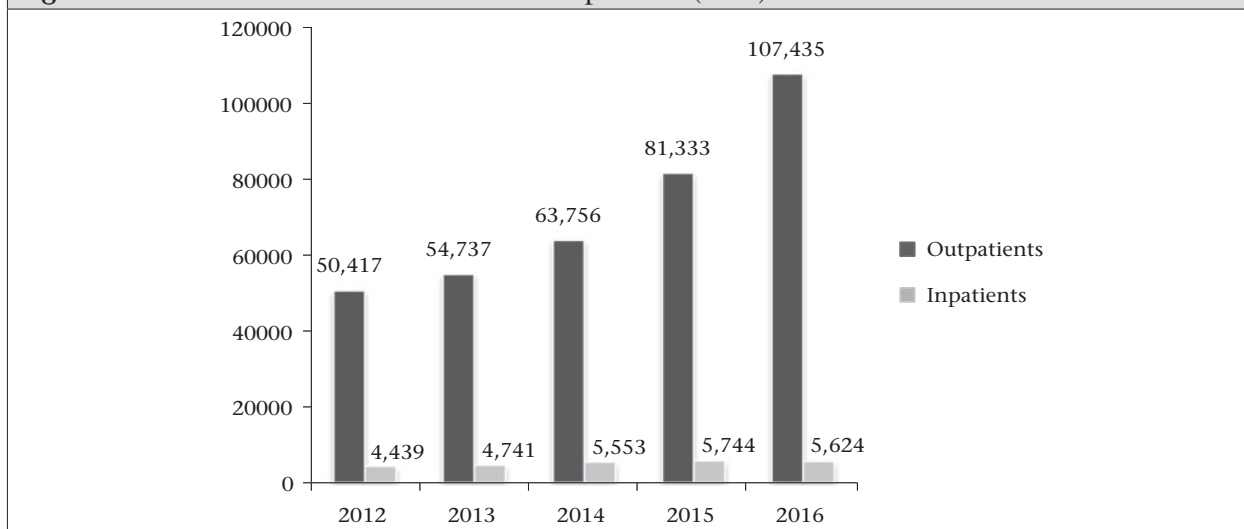


Table 11.2. Heart and vascular surgeries performed at the NICVD in 2016

Year	Open-heart surgery					Vascular surgery		
	CABG	Valve	Congenital	Other	Total	Routine	Emergency	Total
2016	206	226	464	99	995	222	1602	1824

Figure 11.4. Numbers of outdoor and indoor patients (total) at the NIKDU from 2012 to 2016



facilities, and work for further enrichment is going on in full swing. There are 23 full-fledged departments at the NICRH. In 2016, the number of OPD visits was 191,000; 4,813 patients took emergency services; a total of 8,365 patients received inpatient services from different departments. Table 11.3 and 11.4 show the OPD and emergency visits, admissions, and deaths at the NICRH in the last five years. Figure 11.5 presents distribution of patients by age-group (n=26,671). Majority of the patients were from 45-54 years age-group (8,303, 31.1%). The second leading age-group was 55-64 years (4,273, 16.0%). Table 11.5 shows the distribution of admitted cancer patients by department in 2016. Majority (4,165, 49.8%) of the patients were admitted to the Medical Oncology Department, followed by Surgical Oncology (912, 10.9%), Radiation Oncology (849, 10.1%), Pediatric Oncology (842, 10.1%), and Gynecological Oncology (515, 6.2%). Table 11.6 shows the top five

types of cancer according to sites of occurrence among the males and females. These data were extracted from draft cancer registry report of 2016 (n=11015). In males, lung cancer topped the list (26.1%). Cancer of the lymph node and lymphatic system (12.6%) was in the second position. Esophageal cancer (6.1%), stomach cancer (5.0%), and liver cancer (4.8%) occupied the next successive places. Among the females, breast cancer (30.1%) was the leading one, followed by cervical cancer (17.0%), cancer of the lymph node and lymphatic system (6.4%), lung cancer (5.3%) and cheek/buccal mucosa cancer (3.2%).

National Institute of Mental Health and Research

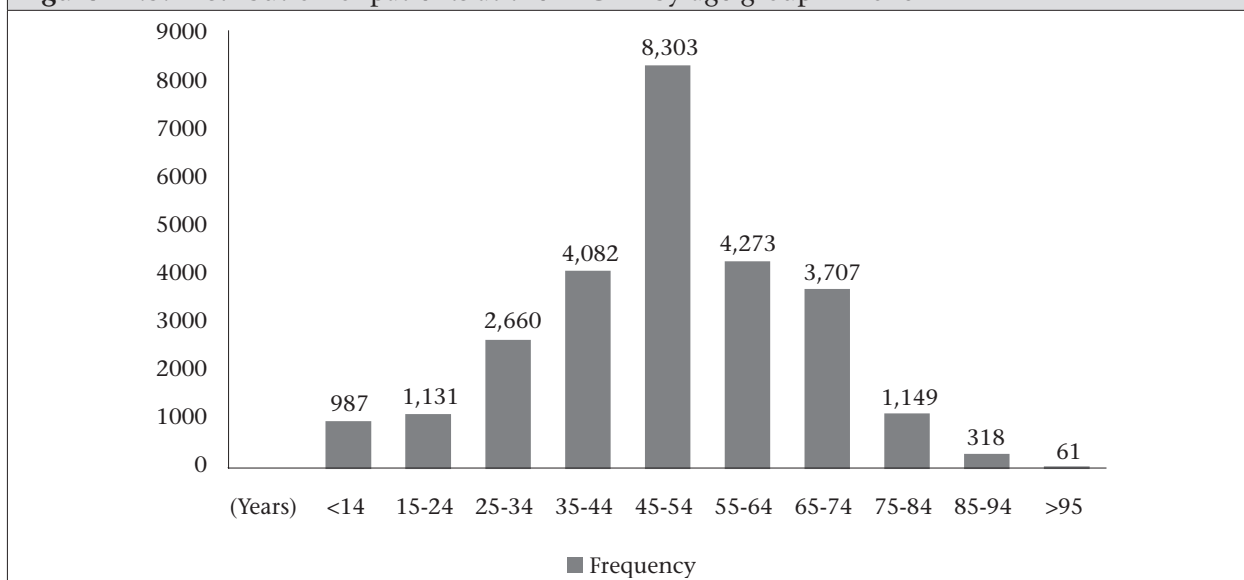
During 2016, the National Institute of Mental Health & Research (NIMHR) provided services to 47,606 outdoor patients, 3,249 emergency patients, and 4,512 indoor patients. Among

Table 11.3. Number of OPD and emergency visits at the NICRH in the last five years (2012-2016)

Year	OPD				Emergency			
	Total (M+F)	Male (M)	Female (F)	Child (Under-5)	Total (M+F)	Male (M)	Female (F)	Child (Under-5)
2012	59,221	33,073	26,148	1,803	3,606	2,305	1,301	177
2013	163,029	81,753	81,276	2,425	3,720	2,220	1,500	107
2014	196,859	97,585	99,274	4,336	4,493	2,530	1,963	105
2015	171,127	86,565	84,562	2,910	4,381	2,545	1,836	98
2016	191,000	98,879	92,121	3,987	4,813	2,599	2,214	129

Table 11.4. No. of admissions and deaths at the NICRH in the last five years (2012-2016)

Year	Admission				Death			
	Total (M+F)	Male (M)	Female (F)	Child (Under-5)	Total (M+F)	Male (M)	Female (F)	Child (Under-5)
2012	3,020	1,731	1,289	481	60	45	15	5
2013	3,045	1,820	1,225	577	115	67	48	3
2014	4,349	2,403	1,946	212	124	86	38	4
2015	7,285	4,318	2,967	415	168	99	69	6
2016	8,365	4,478	3,887	439	225	142	83	5

Figure 11.5. Distribution of patients at the NICRH by age-group in 2016**Table 11.5.** Distribution of admitted cancer patients at the NICRH by department in 2016

Department	Frequency	Percentage
Medical Oncology	4,165	49.8
Surgical Oncology	912	10.9
Radiation Oncology	849	10.1
Pediatric Oncology	842	10.1
Gynecological Oncology	515	6.2
Hematology	337	4.0
Genito-Urinary Surgical Oncology	249	3.0
ENT Oncology	241	2.9
Dental & Faciomaxillary Surgical Oncology	137	1.6
Plastic & Reconstructive Surgical Oncology	118	1.4
Total	8,365	100.0

Table 11.6. Distribution of patients by top five types of cancer according to the site of occurrence at the NICRH in 2016 (n=11,015)

Male (n=5,983)		Female (n=5,032)	
Site	Number (%)	Site	Number (%)
Lung	1,562 (26.1)	Breast	1,516 (30.1)
Lymph node & lymphatic system	752 (12.6)	Cervix	855 (17.0)
Esophagus	365 (6.1)	Lymph node and lymphatic system	320 (6.4)
Stomach	299 (5.0)	Lung	267 (5.3)
Liver	286 (4.8)	Cheek/Buccal mucosa	163 (3.2)

the emergency patients, 1,896 (58.36%) were males, 1,221 (37.58%) females, and 132 (4.06%) were children. Among the indoor patients, 2,770 (61.39%) were males, 1,625 (36.02%) females, and 117 (2.59%) were children. Figure 11.6 shows the month-wise distribution of indoor patients in 2016. Among the outdoor patients, 22,874 (48.05%) were males, 18,626 (39.13%) females, and 6,106 (12.83%) were children. Figure 11.7 shows the outdoor patient visits for the last five years (2012-2016). A detailed profile of patients from 2012 to 2016 is given in the Annex to the Chapter.

Injury situation in Bangladesh

In 2016, the Non-communicable Disease Control Program of the DGHS and the Center for Injury Prevention and Research, Bangladesh (CIPRB) collaborated in the second nationwide injury survey titled “Bangladesh Health and Injury Survey” (BHIS 2016). Data collection was done from March through June 2016 from a nationally-representative sample, with 80,071 households covering a population of 299,216.

Injury-related mortality

The survey showed that injuries accounted for 12.2% of all deaths among all age-groups and, thus, the injury-related mortality rate was found 66.8 per 100,000 population per year for all ages. Figure 11.8 shows the mortality rates in different age groups. The rates were quite high among toddlers (1-4 years) and the older age-groups (over 60 years).

Leading external causes in terms of fatality rates included suicide, transport accidents, drowning, and falls. Figure 11.9 shows mortality rates by external cause or injury-mechanism.

Injury-related morbidity

The injury-related morbidity rate was 12,417 per 100,000 per year in all ages as found in the BHIS 2016. Figure 11.10 shows the rates by age-group. Among the people aged between 40 and 59 years, the injury-related morbidity rate was the highest.

National Health Crisis Management Center and Control Room of the DGHS collect injury

Figure 11.6. Month-wise distribution of indoor patients of the NIMHR from January to December 2016

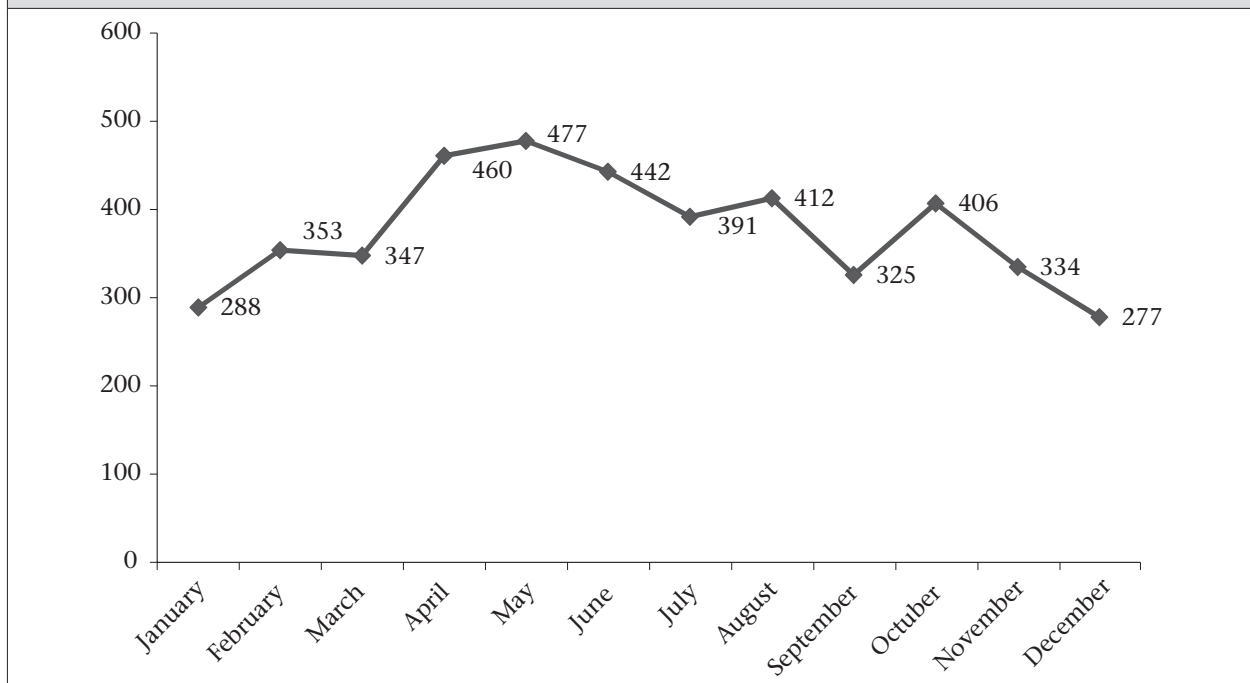


Figure 11.7. Number of outdoor patient visits to the NIMHR (2012 and 2016)

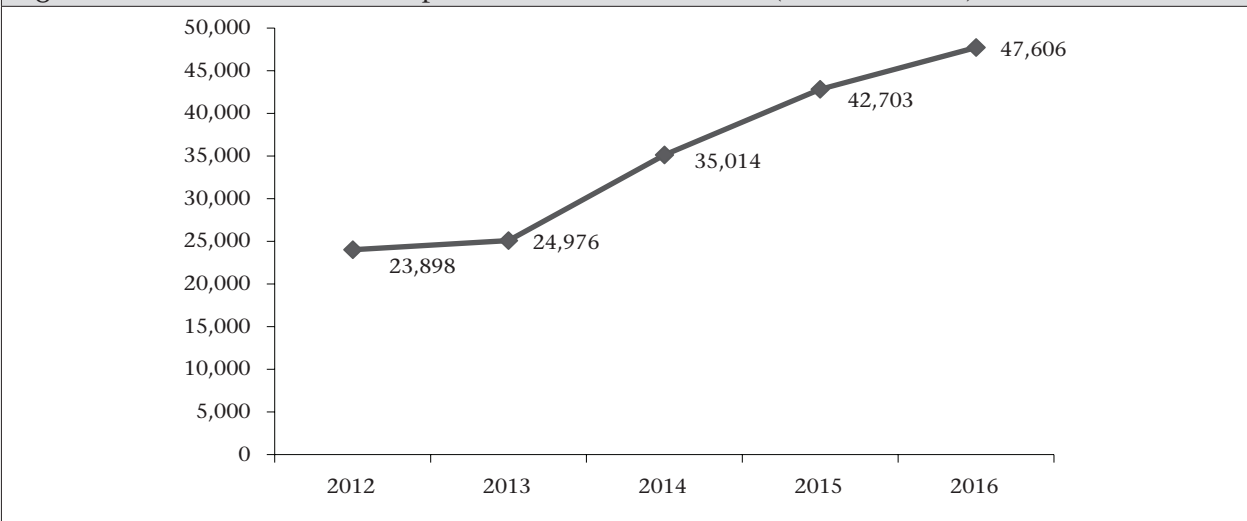


Figure 11.8. Injury-related mortality rate per 100,000 population by age as found in BHIS 2016

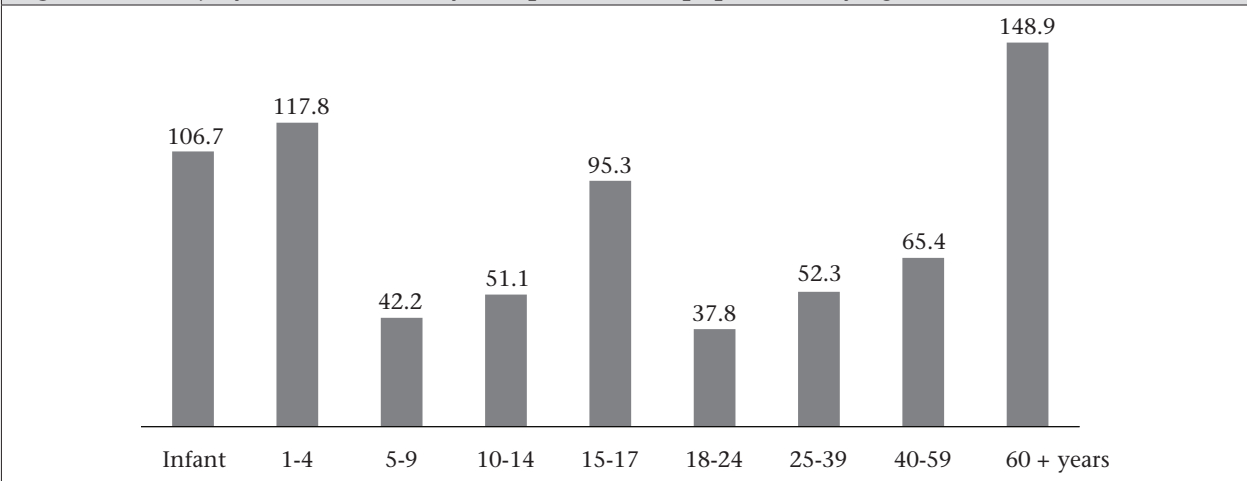
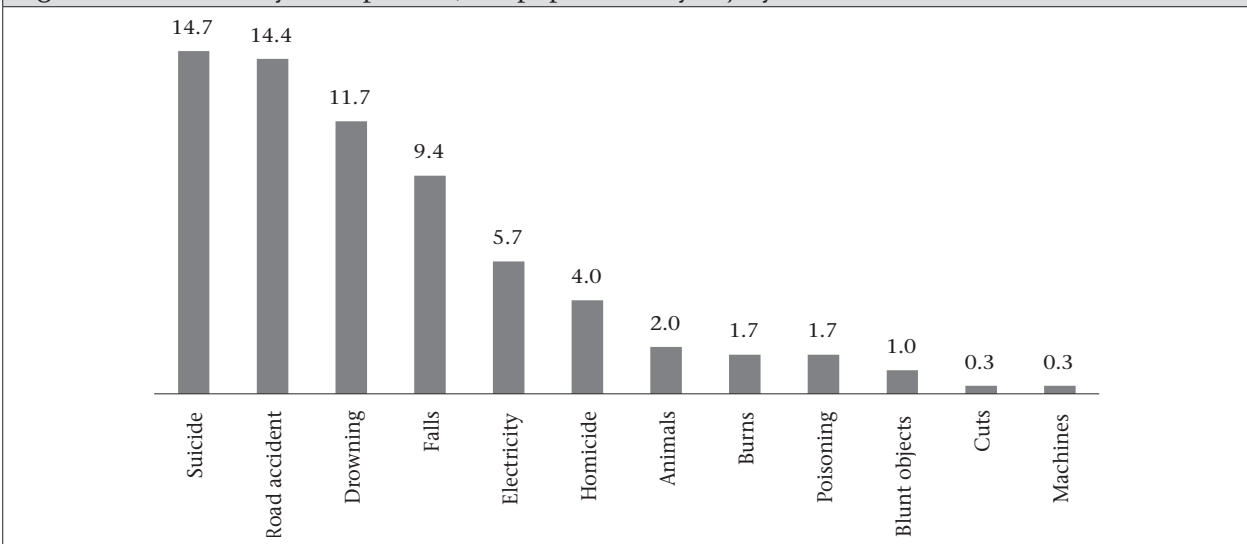


Figure 11.9. Mortality rates per 100,000 population by injury-mechanism as found in BHIS 2016



reports from different places of the country. Figure 11.11 shows data up to September 2017; the number of injuries due to different accidents was 1,277, and the number of deaths was 378.

Table 11.7 shows data for 2017 (up to July); the highest number of accidents occurred in Dhaka city while Chittagong had the second highest number. However, the highest number of injuries from those incidents occurred in Pabna, and the highest number of deaths occurred in Chittagong.

Figure 11.12 shows data on injuries for various causes including road-traffic accidents and others. These are lightning, storm (*Kalboishakhi*, a monsoon storm), and landslide due to heavy rain in the monsoon. The detailed information on different types of injuries are provided in the Annex of the Chapter.

Autism

One of the most intriguing and challenging neurodevelopmental health problems faced by people all over the world is autism spectrum

Figure 11.10. Injury-related morbidity by age-group (BHIS 2016)

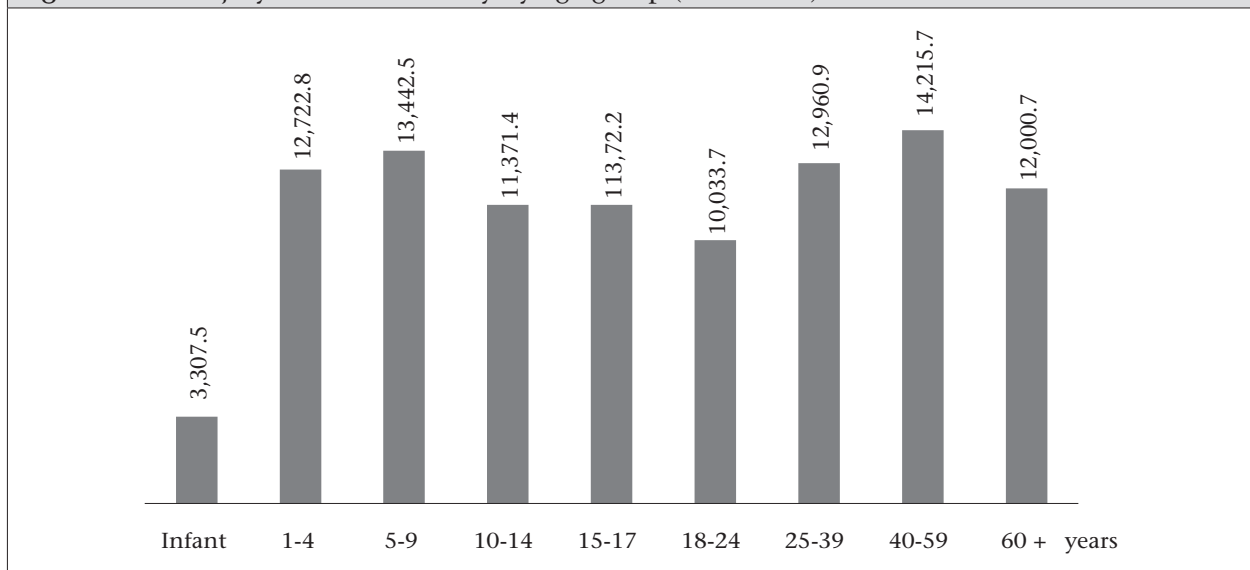


Figure 11.11. Number of injuries and deaths reported for 2013 to 2017 (September).

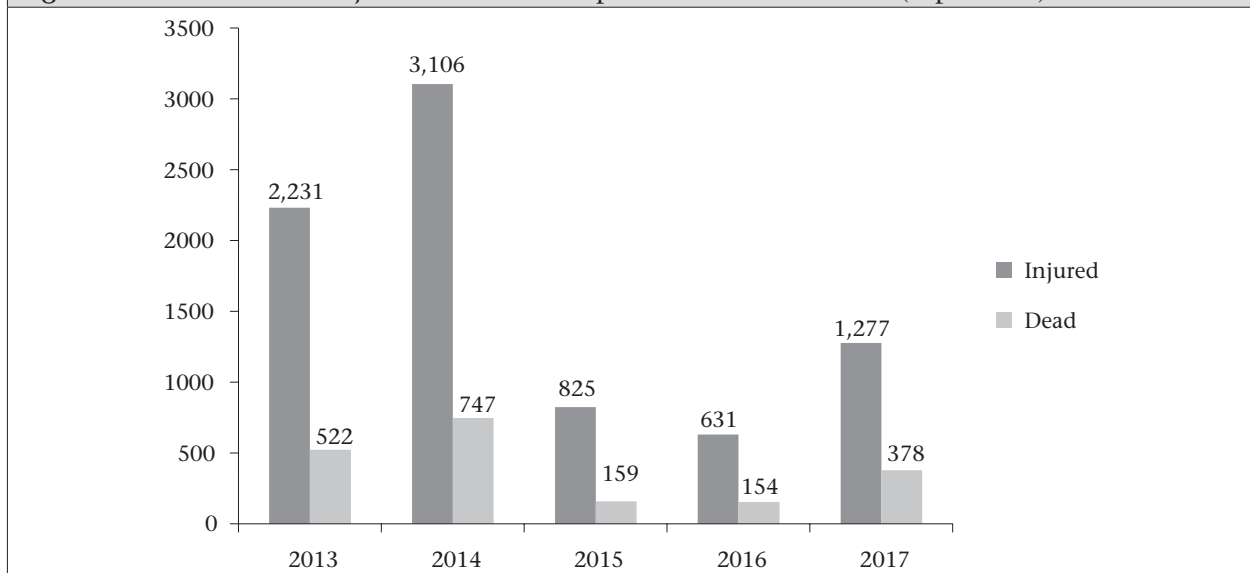


Table 11.7. District-wise distribution of the number of accidents, injuries, and deaths that occurred during January to July 2017

District	No. of incidents	No. of injuries	No. of deaths
Dhaka	12	112	16
Chittagong	9	86	24
Mymensingh	9	78	18
Munshiganj	8	40	6
Comilla	8	32	13
Gaibandha	6	50	11
Manikganj	5	47	3
Magura	5	20	6
Sylhet	5	10	12
Pabna	4	134	6
Sirajganj	4	40	10
Kushtia	4	19	9
Narayanganj	4	11	7
Jessore	3	104	8
Jhenaidah	3	41	3
Narsingdi	3	19	16
Cox's Bazar	3	18	8
Narail	3	1	3
Faridpur	2	40	17
Rajshahi	2	25	6
Tangail	2	23	9
Dinajpur	2	17	9
Gopalganj	2	12	8
Netrakona	2	8	1
Gazipur	2	4	18
Lakshmipur	2	4	2
Bandarban	2	2	11
Lalmonirhat	2	1	3
Madaripur	2	0	2
Rangamati	1	65	23
Feni	1	19	0
Chuadanga	1	14	10
Bagerhat	1	6	5
Brahmanbaria	1	3	2
Patuakhali	1	2	1
Rangpur	1	1	1

Table 11.7. Contd.

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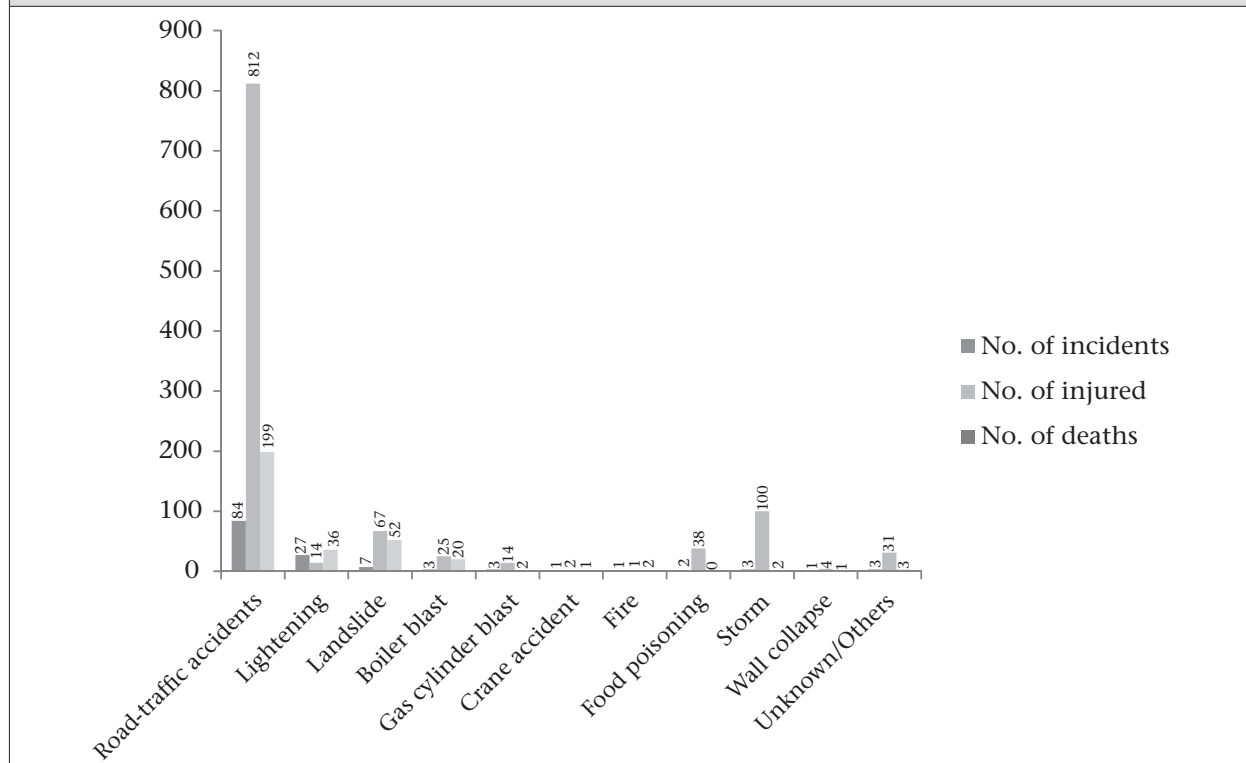
District	No. of incidents	No. of injuries	No. of deaths
Barisal	1	0	1
Bogra	1	0	2
Chapainowabganj	1	0	2
Khagrachhari	1	0	1
Khulna	1	0	0
Kishoreganj	1	0	1
Naogaon	1	0	1
Natore	1	0	3
Total	135	1,108	318

disorder (ASD). It is estimated that 360,000 babies are born every day in the world. Sadly, one in every 68 of them is born with an autism spectrum disorder.

The challenge of autism is compounded by limited financial, professional and technical resources in a developing country like Bangladesh with a population of over 160 million. However, the bigger challenge has been the social stigma and isolation, even more than the lack of services.

Families living in poverty face immeasurable challenges with their autistic child. The following activities have been undertaken since the national health program has identified this problem as a priority area:

1. National Advisory Committee on Autism and Neurodevelopmental Disability, headed by Saima Wazed Hossain, has been constituted
2. A 17-member Autism Technical Guidance Committee has been created
3. A National Steering Committee on autism by involvement of 15 ministries/divisions/organizations has been created
4. A national strategic plan on autism has been formulated, along with a short-term and a long-term action plan
5. Autism has been incorporated in undergraduate medical curriculum
6. Child development centers (Shishu Bikash Kendra) have been established in 15 medical college hospitals

Figure 11.12. Distribution of incidents, injuries and deaths that occurred during January-July 2017 for different causes

7. Piloting of home-based screening of autism and neurodevelopmental disorders in children aged 0-9 year(s) in selected 7 upazilas, one in each division, has been conducted
8. Doctors have been trained on autism
9. IEC materials on autism have been developed, printed, and distributed
10. Center for Neurodevelopment and Autism in children has been established at Bangabandhu Sheikh Mujib Medical University, which is now the Institute of Pediatric Neurodisorder and Autism (IPNA)
11. Study of "Prevalence of maternal depression of children with autism in Dhaka and pilot testing of feasibility of the implementation of household-based training for mothers" has been done
12. 'World Autism Awareness Day 2015' has been observed

Under an initiative of the Bangladesh Government, resolutions on autism have been approved by the United Nations General Assembly

(2012), Regional Committee Meeting of the WHO South-East Asia (2012), and the Executive Board of the WHO (May 2013), thus placing Bangladesh in the leadership and forefront position in global awareness creation on autism.

Shishu Bikash Kendra (SBK)

Neurodevelopmental disorders (NDDs) are considered to be of high priorities in the current Health, Population and Nutrition Sector Program (HPNSP). Several Operational Plans, including Hospital Services Management (HSM), Community-based Healthcare (CBHC) and Non-communicable Disease Control (NCDC), have been chalked out. To address the needs for providing specialized diagnostic and therapeutic services for children with NDDs, the HSM is operating 15 multidisciplinary Child Development Centers (*Shishu Bikash Kendra* in Bangla) in the country. A large number of children with NDDs are benefitting from the service which emphasizes the follow-up visits, with functional improvements in motor, vision, hearing, speech, language

and communication, cognition, behavioral domains, comprehensive management of seizure disorders, and special emphasis on activities of daily living (ADL). Professionals work closely with the families to optimize developmental potential of every child, improve their quality of life and prevent disability. Since the start of the services in 2008-2009, more than 4 lakh children got services from the 15 SBKs.

Five more SBKs will be established in 2017-18.

- Sirajganj
- Kishoreganj
- Patuakhali
- Noakhali
- Rangamati

Services/units in SBKs

Outpatient Department

Psychological Assessment

Well Baby Clinic

Inpatients Department

General Developmental Assessment

Therapeutic Intervention for Autism

Multi-disability Clinic (Motor)

Multi-disability Clinic (Seating Feeding)

Multi-disability Clinic (Low Vision)

Speech, Language and Communication

Development Therapy

Epilepsy Clinic

Mental Health Clinic

From July 2016-June 2017, a total of 43,125 patients attended 15 SBKs. The detailed information on the number of different services provided to the patients during that period is given in the Annex to the Chapter.

National Nutrition Services (NNS)

Malnutrition refers to both undernutrition and overnutrition. The rate of undernutrition is still high in Bangladesh; the rate of overweight and obesity in children and women is also increasing slowly. Malnutrition is caused by a combination of factors, including faulty food consumption, food utilization in poor sanitation, illness, and inadequate healthcare. Although Bangladesh has made significant progress in achieving the MDG targets, the double burden of malnutrition still remains at the highest level among the developing countries, with children and women being the most affected. Furthermore, Bangladesh is mandated to achieve the Sustainable Development Goals (SDGs) which include nutrition in Target 2 of the SDGs that aims to "end hunger, achieve food security and improve nutrition, and promote sustainable agriculture" to ensure access to nutritious food and end all forms of malnutrition.

The Bangladesh National Nutrition Policy 2015 makes comprehensive provisions of nutritious foods to all citizens, focusing on children, adolescents, and women. The policy also warrants the rights of elderly people with a vision of improving nutrition. In line with the nutrition policy, the Bangladesh National Nutrition Council (BNNC) was revitalized in 2015, and the Second National Plan of Action for Nutrition (NPAN2) for 2016-2025 has been formulated. The National Nutrition Services (NNS) Operational Plan (2017-2022) has also been approved; it is being mainstreamed (since HPNSDP 2011-2016) within the comprehensive 4th HPNSP of the Ministry of Health and Family Welfare (MOHFW); it focuses on the 1,000 days approach. The mainstreaming of nutrition services is being done not only within the health sector but also across all relevant sectors.

Public health nutrition program under MOHFW

The MOHFW initiated in 2011 the National Nutrition Services (NNS) to steward

Figure 11.13. Multidisciplinary team engaged in addressing the problems of NDDs

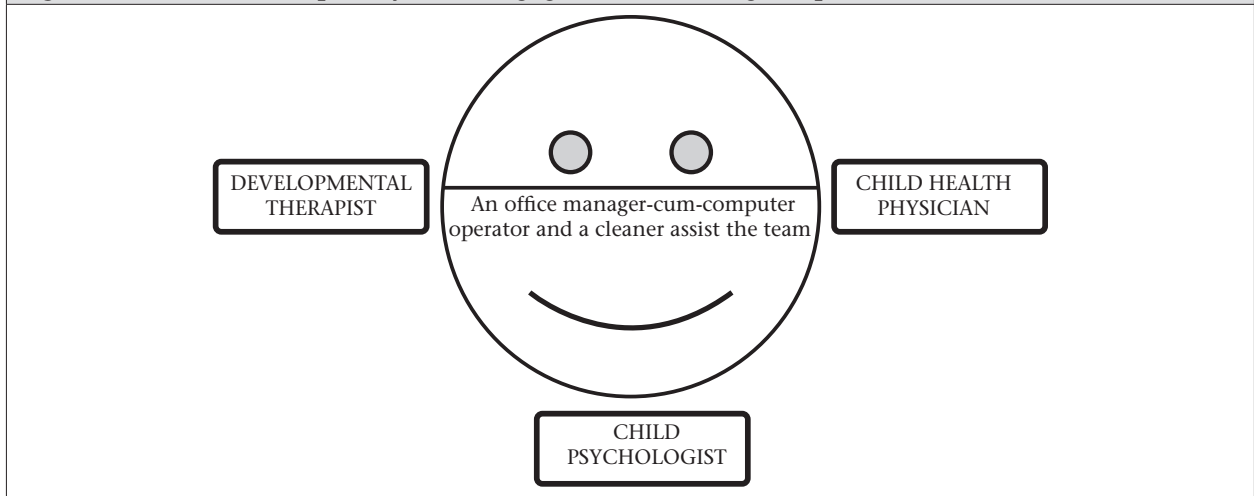
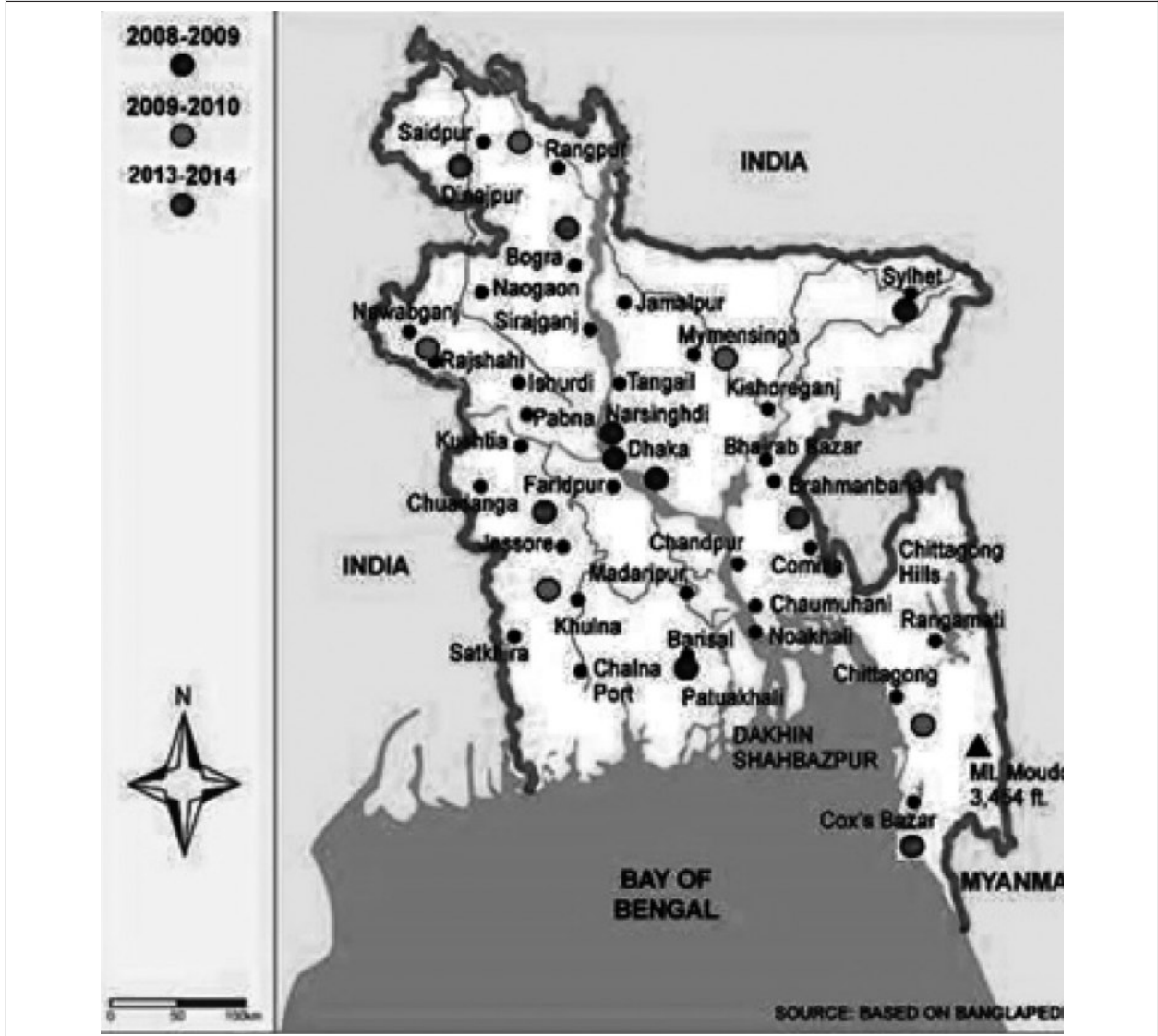


Figure 11.14. Locations of the SBKs



mainstreaming of nutrition into the health, family planning and other sectors. Through the current Health, Population and Nutrition Sector Program (HPNSP) 2017-2022, the Government of Bangladesh is trying to reduce malnutrition among children, adolescent girls, and women by scaling-up the provision of community-based nutrition services throughout the country. This will require the implementation of nutrition-specific and nutrition-sensitive interventions by all relevant sectors. This has resulted in establishing a countrywide cost-effective and comprehensive system for nutrition service delivery. Under the National Nutrition Services (NNS) housed at the Institute of Public Health Nutrition (IPHN), both DGHS and DGFP are streamlining and strengthening their nutrition services by using the frontline government staff in the health sector. The prime functions of the NNS include: (i) training, (ii) facility-based services, (iii) community/area-based nutrition-related activities, (iv) human resource development, (v) providing micronutrients to the target population, (vi) supply of nutrition-related logistics and medicines, (vii) operational research and surveys, (viii) development of nutrition information system, advocacy, and communication. Capacities of the upazila health complexes, district hospitals, community clinics, and facilities under the DGFP, e.g. MCWCs, are now in the process of strengthening. The NNS aim to cater nutrition

services through establishing IMCI and Nutrition Corners in all the health facilities where IMCI Corners are already established. Mass awareness is also being created through behavior change communication (BCC).

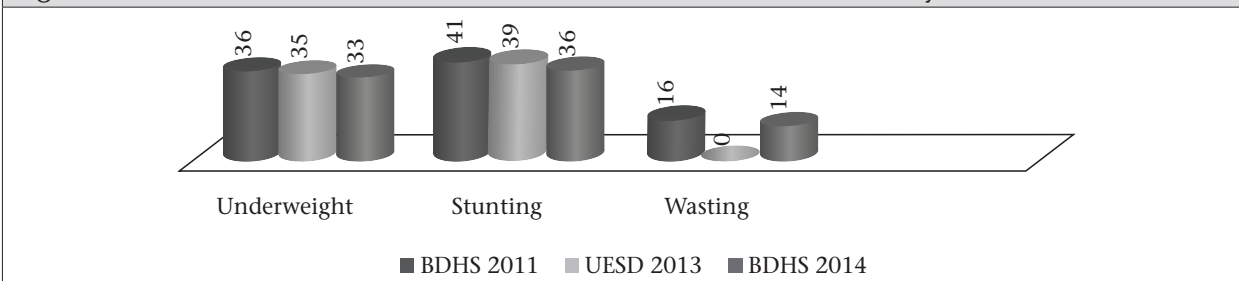
Current nutrition situation in Bangladesh

Although there have been some improvements in the nutritional status of children over the years, malnutrition among children and women still remains one of the major health problems in Bangladesh. According to BDHS 2014, 36% of the under-five children are stunted, with 12% being severely stunted. Stunting is most prevalent in Sylhet (50%) and at the lowest level in Khulna (28%). The prevalence of wasting among the under-five children is 14%. The prevalence of underweight children is 33%. However, the level of stunting has declined from 51% in 2004 to 36% in 2014. Wasting has declined from 17% in 2007 to 14% in 2014. The level of underweight has declined to 33% in 2014 from 43% in 2004. Figure 11.15 shows the trends in nutritional status of under-five children over the years as revealed from BDHS 2011, 2014 and Utilization of Essential Service Delivery Survey Report 2013.

According to the 2013 annual report of Utilization of Essential Service Delivery Survey, the prevalence of wasting is higher in Sylhet (15%) than in other areas/zones (Figure 11.16)

Explicit attention to nutrition is needed as the world seeks to accelerate and sustain recent gains in development and to expand these to include places and people left behind. Without good nutrition, our mind and body cannot function well. When that happens, the foundations of economic, social and cultural life of the society are undermined. Therefore, nutrition needs to be given a prominent role in the Sustainable Development Framework.

Figure 11.15. Trends in nutritional status of under-five children over the years



and even higher than the prevalence (14%) found in BDHS 2014. Dhaka and Khulna had lower rates of wasting than in Rajshahi and Sylhet. Wasting rates in urban areas were markedly lower than in rural areas. Like wasting, Sylhet had also the highest proportion of underweight children in 2013 as was the case in 2012. Less than one-quarter of children in urban areas were underweight while almost one-third of the children in rural areas were underweight. Figure 11.17 shows the prevalence of underweight among children by administrative division

As shown in Figure 11.18, the levels of chronic childhood undernutrition varied greatly by area of residence. Similar to the past results, Sylhet had the highest rates of childhood stunting but Chittagong, Rangpur, and Sylhet had the largest reduction in stunting rates between 2012 and 2013. On an average, urban areas had much lower rates of stunting than rural areas.

Figure 11.19 shows the trends in underweight and acute wasting rates over the rounds of FSNSP. Prevalence of wasting has decreased from 14% in Round 11 to 9% in Round 12, and that is also less than the national prevalence (16%) reported in BDHS 2011. Prevalence of underweight also decreased from 34% in Round 11 to 28% in Round 12, and that is again less than the national rate (36%) reported in BDHS 2011.

The recent National Micronutrients Status Survey (NMSS) 2011-2012, jointly conducted by the Institute of Public Health Nutrition (IPHN), UNICEF, icddr,b, and GAIN, shows that underweight and stunting rates are comparatively higher in the slum area than in the improved urban and rural areas (Figure 11.20).

Low birthweight (LBW)

LBW (low birthweight of <2,500 g) is an important indicator of the overall health of the mother and the newborn. This cut-off value of LBW, defined by the World Health Organization (WHO), is based on epidemiological observations that the odds of

dying for a baby weighing <2,500 g at birth is 20 times greater than for a heavier baby.

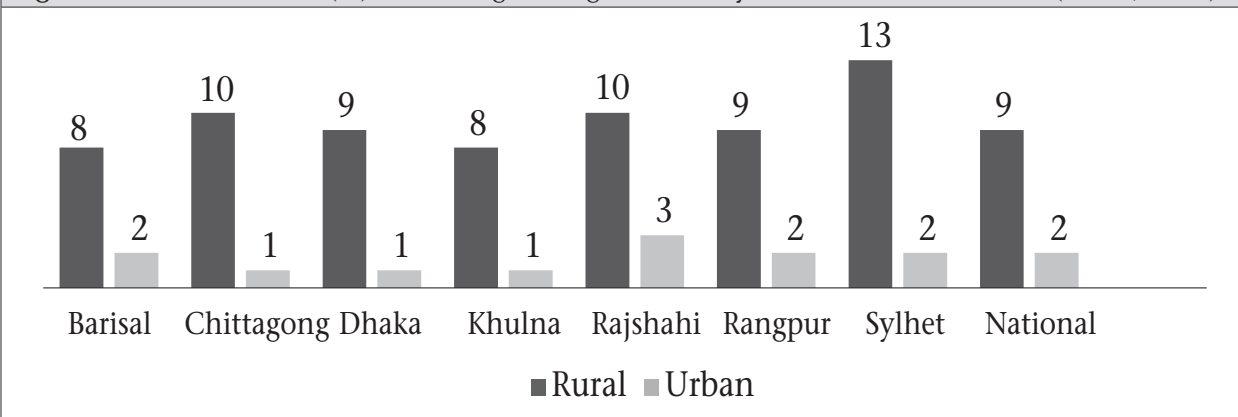
Birthweight of the newborn is a good indicator not only of a mother's health and nutritional status but also the newborn's chances for survival, growth, long-term health, and psychosocial development. Low birthweight carries a range of grave health risks for children. Babies who were undernourished in the womb face a greatly increased risk of dying during their early days, months, and years. Those who survive may have impaired immune function and increased risk of disease; they are likely to remain undernourished with reduced muscle strength throughout their lifetime and suffer a higher incidence of diabetes and heart disease in later life. Children born with low birthweight also have the risk of having lower IQ and cognitive disabilities, affecting their performance in school and their job opportunities as adults.

Findings of BDHS (1996-1997) and MICS (2012-2013) show that LBW increased from 30.5% to 37.7% (Figure 11.21); overall, 35.9% of infants were weighed at birth, and 37.7% of infants are estimated to weigh less than 2500 g at birth, although it was 22% in 2011 (BDHS) and 22.6% in 2015 (NLBWS).

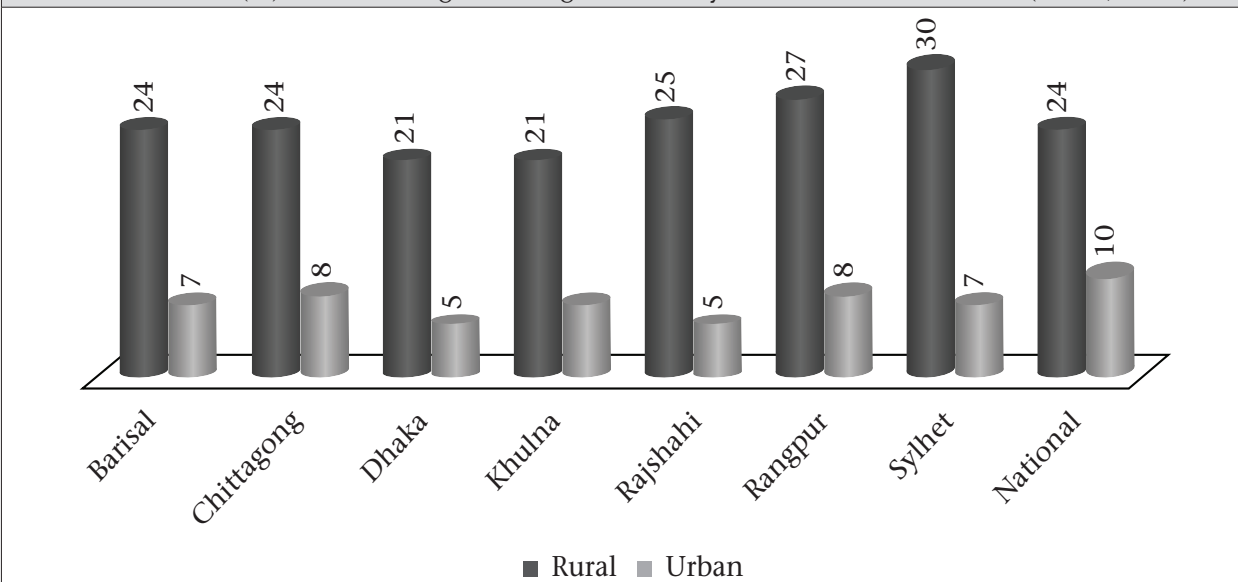
Nutrition status of women and adolescent girls

Figure 11.22 shows that attainment of height among adolescents in Bangladesh is less than what would be expected for a well-nourished population. For example, 4% of adolescent girls were found to be severely short while none would be expected in a well-nourished population. Similarly, 22% of the adolescent girls were moderately short while 2% would be expected in a well-nourished population. In contrast, almost no girls were found to be mildly, moderately, or severely tall for their ages, even though this figure should be 16% according to the reference population. Between FSNSP 2012 and FSNS-NNS 2015, there appears to be a steady decline in the proportion of adolescent girls who are moderately and

Figure 11.16. Prevalence (%) of wasting among children by administrative division (UESD, 2013)



11.17. Prevalence (%) of underweight among children by administrative division (UESD, 2013)



11.18. Prevalence (%) of stunting among children by administrative division (UESD, 2013)

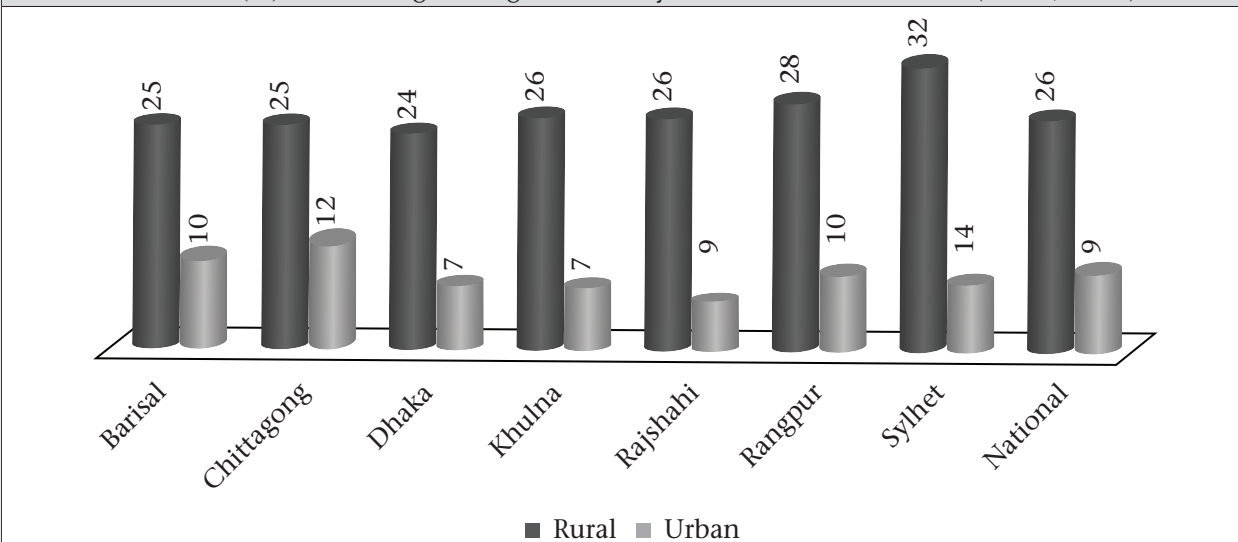
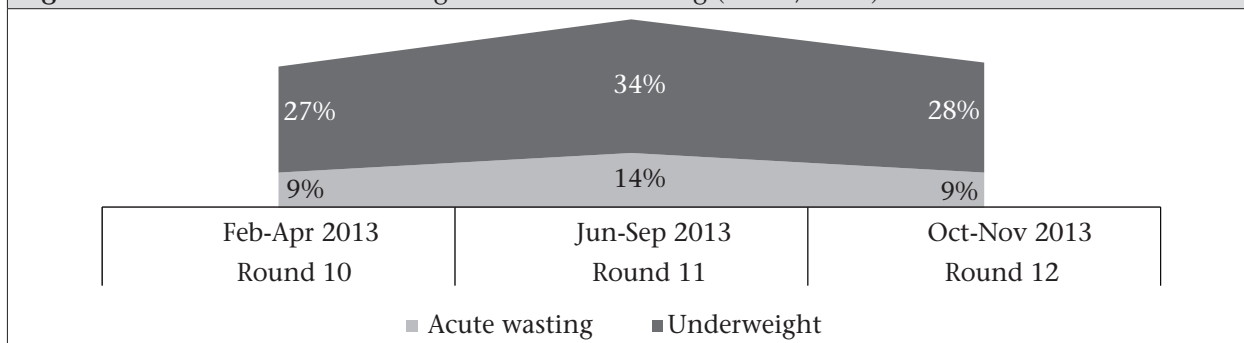
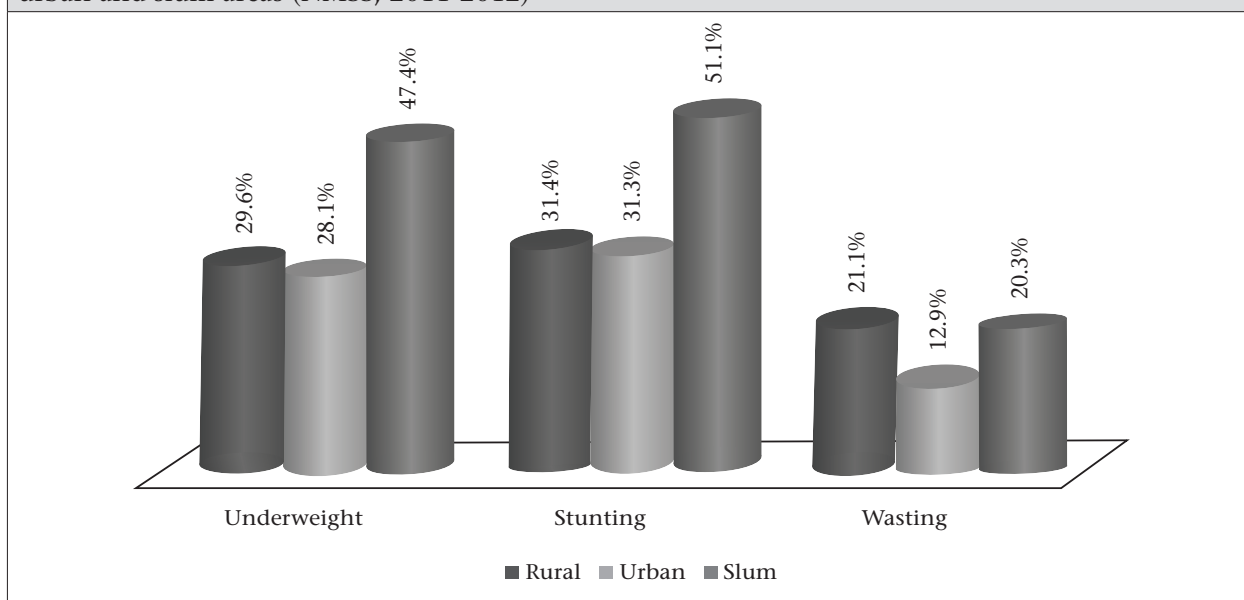
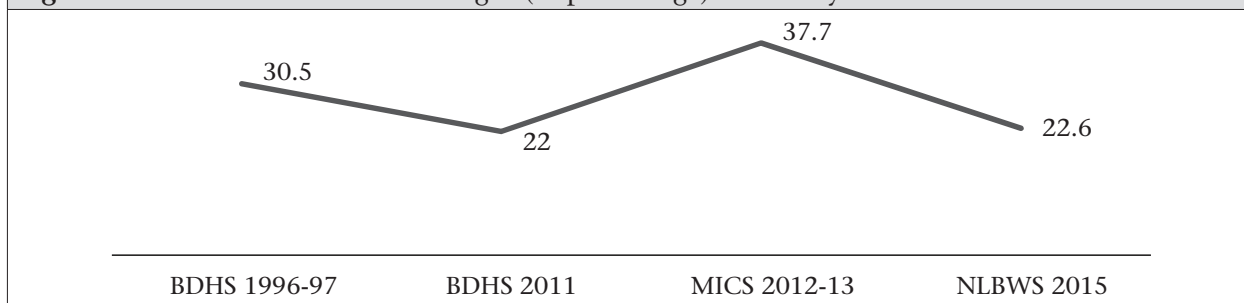


Figure 11.19. Trends in underweight and acute wasting (UESD, 2013)**Figure 11.20.** Prevalence of underweight, stunting, and wasting among under-5 children in rural, urban and slum areas (NMSS, 2011-2012)**Figure 11.21.** Trends in low birthweight (in percentage) over the years

severely short for their ages. For adult women, there is no 'ideal' height structure but the proportion of women with height below 150 cm should approach zero. Among adult women in Bangladesh, 2% were shorter than 140 cm, and one-tenth of adult women were shorter than 145 cm (Figure 11.23).

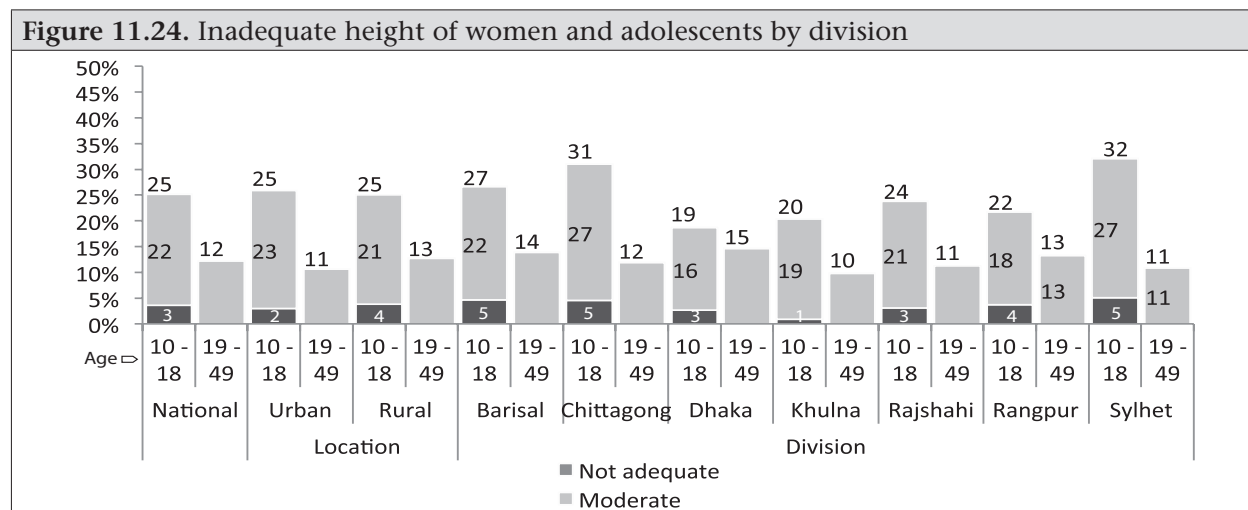
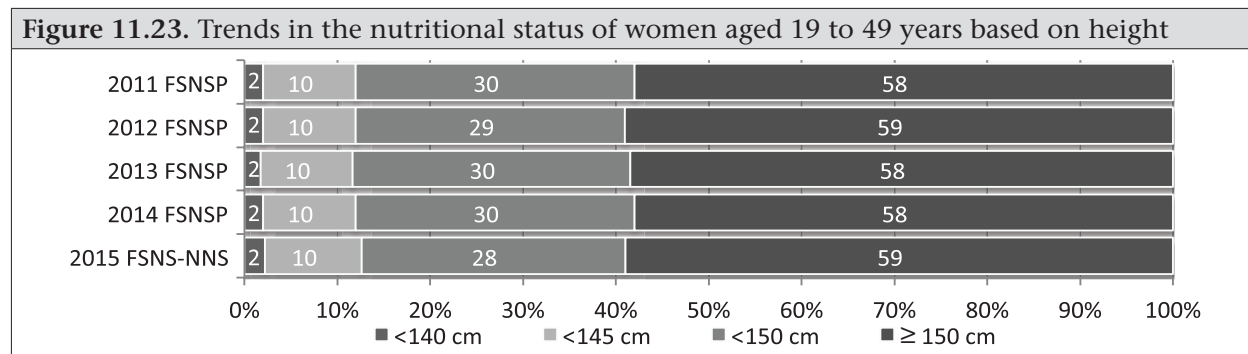
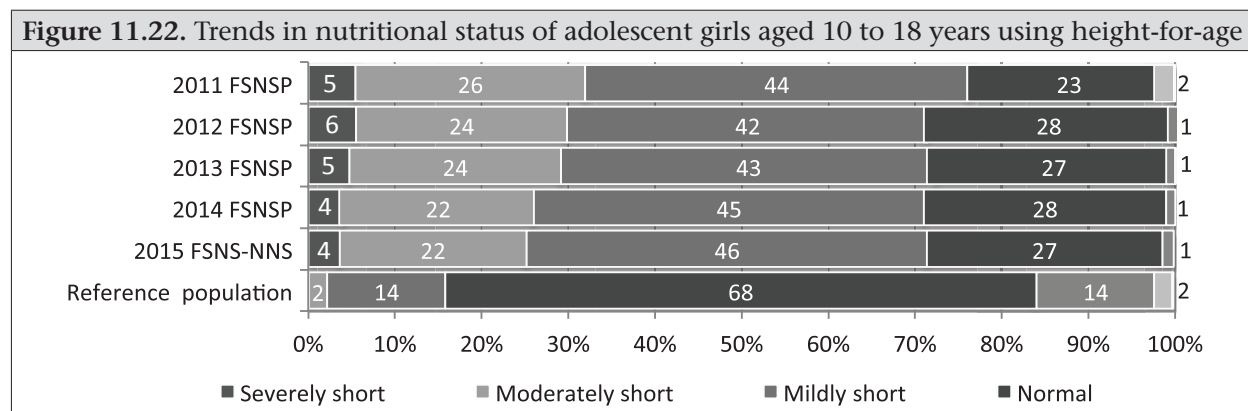
Some variations in both proportion of women at risk during delivery due to the small stature and proportion of adolescents who were very short for their ages are apparent between administrative divisions. Sylhet and Chittagong divisions had the highest rates of stunting among adolescents (32% and 31% respectively).

Interestingly, the prevalence of stunting among adolescent girls was the same across urban and rural areas. Among women aged 19 to 49 years, those in Dhaka district had the highest level of stunting (15%) while those in Khulna had the least (10%) (Figure 11.24).

Nutritional status of females aged 10 to 49 years based on BMI

Using z-scores, figures for Bangladeshi girls

aged 10 to 18 years (upper bars) are juxtaposed against the WHO reference group (lowest bar). This reference indicates that 68% of the population should fall in the normal range, with 16% in underweight and overweight groups on either end. In contrast to this ideal, 57% of the girls in Bangladesh as found in FSNS-NNS 2015, fell in the normal range, and 36% were undernourished below -1SD from the mean, with only a small percentage of overweight (mild 5%, moderate 2%, severe 0%).



This distribution has been more or less static since FSNP 2012, notwithstanding marginal improvements in the lower tail (Figure 11.25).

According to BMI based on Asian cut-off values, 43% of adult women fell into normal category (Figure 11.26). The proportion of overnourished women (41%) was more than the proportion of undernourished women (16%). However, according to BMI categorized by international cut-off values, a different picture emerges: the majority of women (59%) fell into normal category, more than one-fourth fell into overnourished category, and the rest fell into undernourished category (figures not shown).

Figure 11.27 shows that, nationally, 16% of women were underweight, of whom 2% were severely underweight. By contrast, 7% of adolescent girls were underweight, of whom 1% were severely underweight. The proportions of both underweight adolescent girls and women were greater in rural area than in urban area. Among all the divisions, Sylhet had the

highest proportion of underweight women and adolescent girls (respectively 4% and 2% of them were severely underweight).

For remainder of the graphs in this section, the following cut-off values will be used:

Underweight among 10 to 18 years old adolescents:
Severe–BMI z-score less than -3 SD.

Moderate–BMI z-score greater than or equal to -3 SD but less than -2 SD.

Underweight among 19 to 49 years old women:
Severe–BMI less than 16; Moderate–BMI greater than or equal to 16 but less than 17
Mild–BMI greater than or equal to 17 but less than 18.5.

Overweight among 19 to 49 years old women: Mild–BMI greater than 23 but less than or equal to 25; Moderate–BMI greater than 25 but less than or equal to 28; Severe–BMI greater than 28.

Estimated proportions are obtained from the previous FSNP reports, 2011, 2012, 2013, and 2014

Figure 11.25. Trends in the nutritional status of adolescent girls aged 10 to 18 years based on BMI

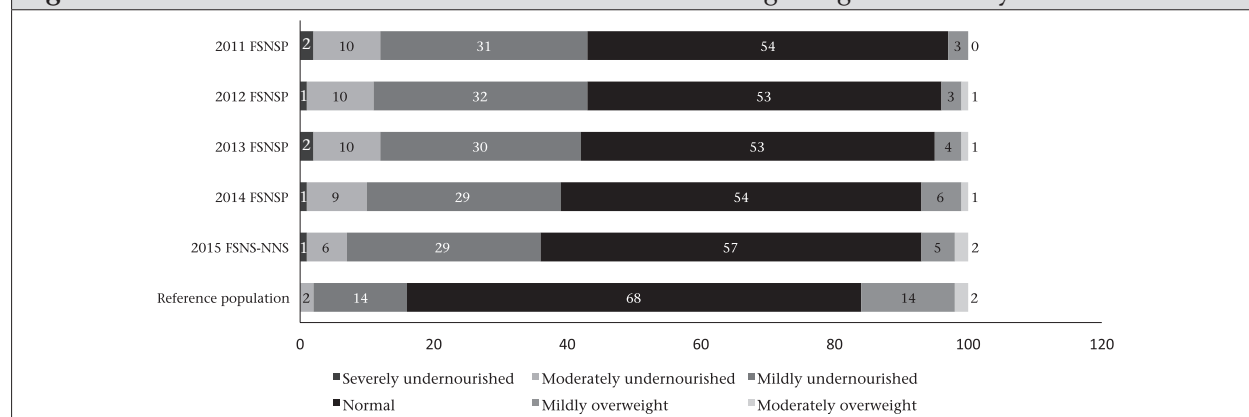
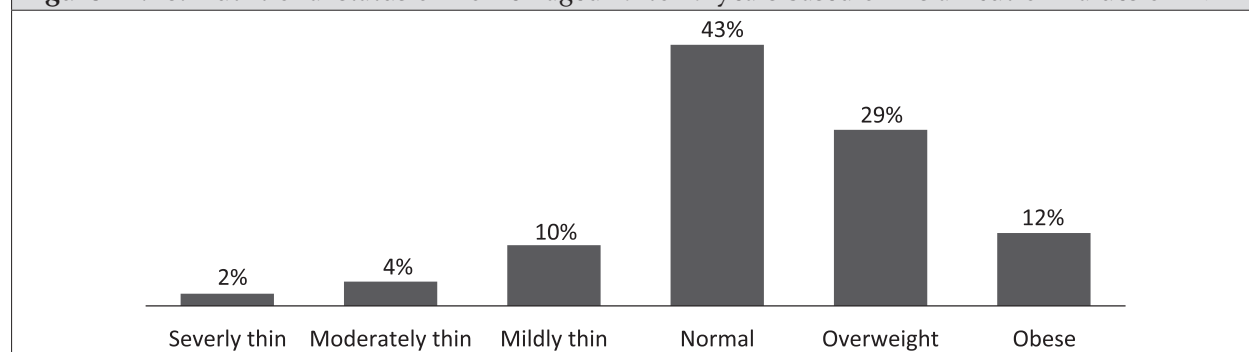


Figure 11.26. Nutritional status of women aged 19 to 49 years based on Asian cut-off values of BMI



Based on Asian cut-off values of BMI, 29% women were overweight, and 12% were obese. In urban areas, the proportions of overweight (35%) and obese (27%) women were substantially larger than rural areas (27% and 8% respectively). Khulna and Chittagong had the highest proportions of overweight women (about 35%), and Chittagong and Dhaka had the highest proportions of obese women (about 18%) (Figure 11.28). However, if international cutoff values of BMI are applied, Chittagong division had the largest proportion of overweight women, followed by Khulna while Dhaka had the largest proportion of obese women, followed by Rajshahi (figures not shown).

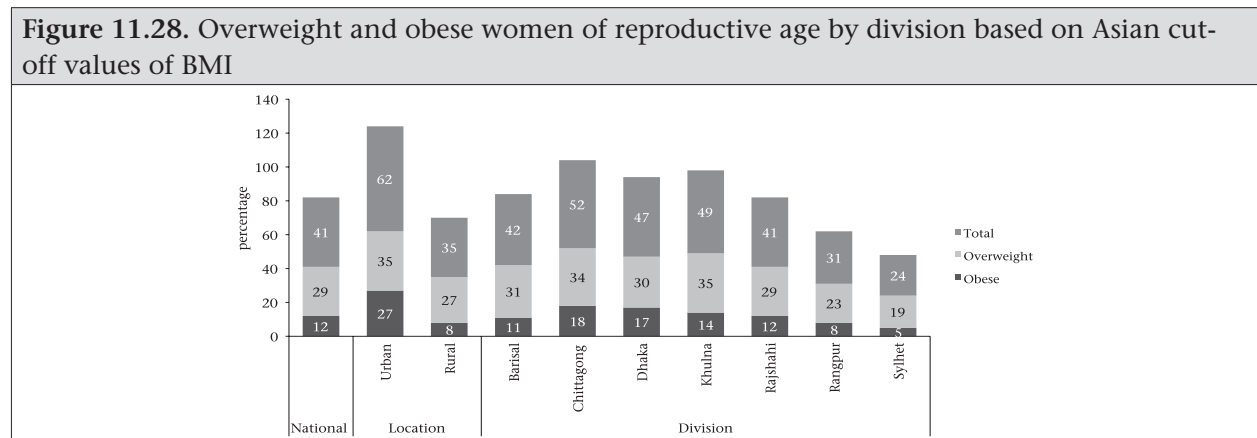
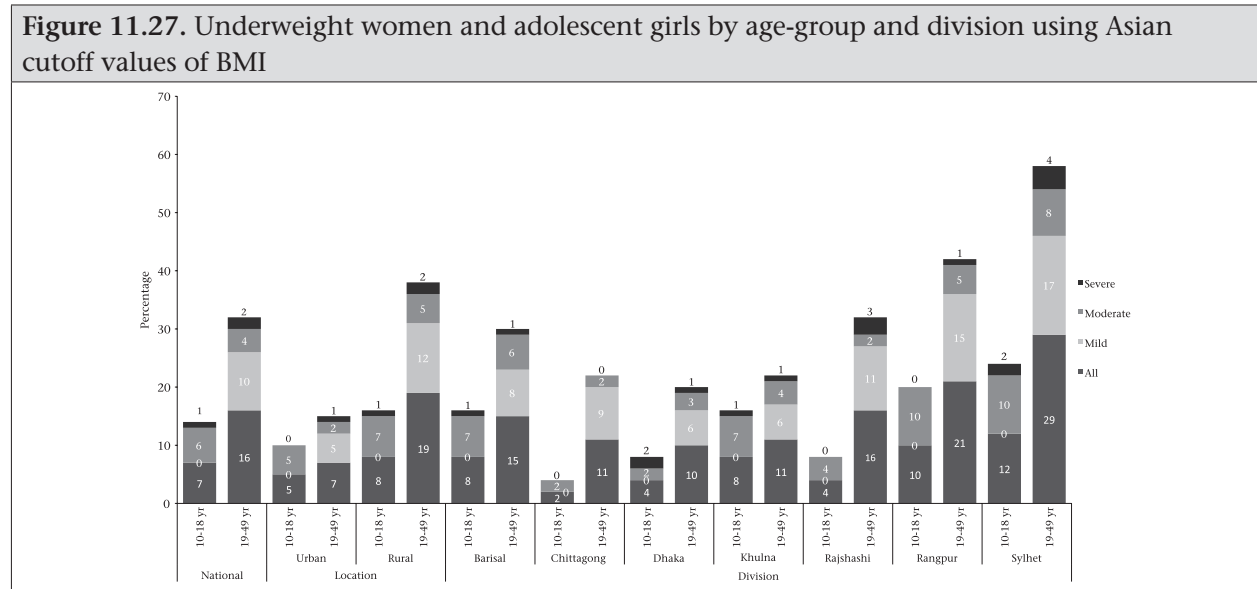
Breastfeeding practices

The exclusive breastfeeding rate for children

below 6 months of age was 55% in 2014. Intensive government programs is being implemented with focus on maternal, newborn and childcare, working in synergy with the health programs undertaken by other stakeholders for improving infant and young child-feeding (IYCF) practices, including exclusive breastfeeding. Findings in the FSNP Annual Report 2013 show that 43% were continuing exclusive breastfeeding but exclusive breastfeeding was 60% as per UESD report 2013.

Infant and young child-feeding practices

Timely initiation of solid, semi-solid or soft foods from six months of age are included in the infant and young child-feeding (IYCF) practices. Overall, 23% of children aged 6-23



months were fed appropriately according to the standard IYCF practices in 2015, and this shows an increase of 2% from 21% observed in 2014. This was far below the HPNSDP target of 52% for 2016. However, the UESD report reveals that 32% of children of 6-23 months were fed as per standard IYCF practices. The FSNSP Annual Report reveals that, in 2013, more than one-third of children were fed minimally-adequate diets. This indicates a considerable increase in children eating minimally-acceptable diets since 2011 but the current level is still far short of the HPNSDP target of 52%.

Micronutrient status: vitamin A supplementation

The Bangladesh Government prioritizes vitamin A supplementation as an important public-health program and is distributing vitamin A capsules to children of 6-59 months through National Vitamin A Campaign (NVAC). Every year, two rounds of vitamin A capsule supplementation to children aged 6-59 months are conducted. Through these campaigns, health workers and volunteers administer vitamin A capsules to around 20 million children at more than 140,000 sites located in health facilities, health centers, and schools as well as in mobile sites (bus, boat, and railway stations) throughout the country.

Success of NVAC and CtC

The first round of NVAC 2017 was held on 5 August 2017 and, subsequently, NI (Nutrition International) supported a more intensive 'Child-to-Child' (CtC) activities carried out in 240 hard-to-reach unions of 46 upazilas under 12 districts from 6-9 August 2017. Figure 11.29 shows that administrative coverage of the first round of vitamin A supplementation (VAS) among children of 6-11 months was 99.2% (2,347,189) and that among children of 12-59 months was 99.3% (18,405,706). However, in *pourashovas* (municipalities), the coverage was slightly lower (96.5% among children of 6-59 months) than CC (99.5%), rural (99.2%), and national (99.3%) coverage.

Figure 11.30 shows the vitamin A supplementation coverage (%) during the last 8 years.

Mainstreaming of NNS and Nutrition Information System (NIS)

The IPHN, through the National Nutrition Services (NNS), is implementing activities under an Operational Plan of the MOHFW's HPNSDP since 2011. Implementation and management of nutrition-related activities throughout the country are done under the umbrella of NNS working closely with the DGHS and the DGFP. The delivery of nutrition

Figure 11.29. NVAC coverage by area and age-group in the first round of 2017

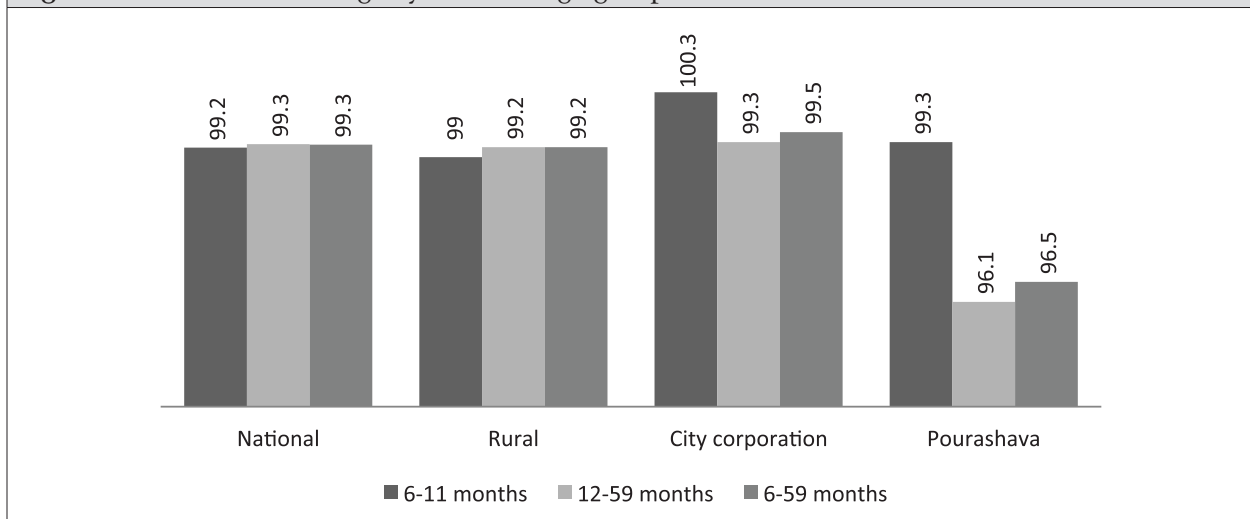
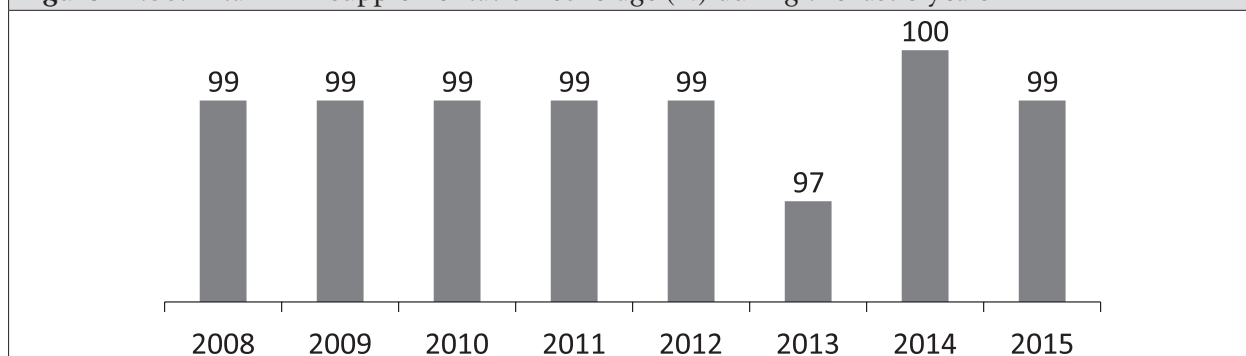


Figure 11.30. Vitamin A supplementation coverage (%) during the last 8 years



services and interventions in collaboration with stakeholders at all levels are run by the NNS. The MIS of the DGHS has incorporated nutrition indicators at the level of community clinic and IMCI format (DHIS2). The DGFP has incorporated indicators on nutrition in their routine MIS forms. The DGHS is going to pilot the forms in 23 upazilas prior to the nationwide scale-up.

The NNS started implementation activities with a concept of 'mainstreaming' with the DGHS and the DGFP. The nutrition-related activities are implemented by field staff of the DGHS and the DGFP. The DGHS, the DGFP, IMCI, and CBHC (Community Clinic Project) work closely with the NNS to include nutrition-related indicators within the existing MIS of the DGHS and the DGFP rather than developing a parallel system.

Standard nutrition indicators to assess effective coverage of interventions were also defined to measure the scale-up and identify gaps; nutrition indicators have been incorporated in service registers and reporting format of IMCI, Nutrition Corner, Community Clinic Project, HMIS, and MIS of the DGFP from where nutrition-related data are extracted by the NNS. The NNS conducted nutrition surveillance all over the country through James P. Grant School of Public Health (JPGSPH) of BRAC University. Harmonizing nutrition information systems among organizations working in urban areas is another function of the NNS with support from bilateral donors. For different nutrition-related activities, standardized supervision checklists were also developed.

Nutrition services at the district and upazila-level facilities

At the district and upazila levels, 424 'baby-friendly hospitals' were established. Also, 200 severe acute malnutrition (SAM) units and 395 IMCI and Nutrition Corners were established. The activities are summarized below.

- Total number of IMCI and Nutrition Corners is 487 (424 at UHCs and 63 at DHs); of the total, 476 corners were reported online whereas 360 were reported to cover nutrition-related activities partly in December 2015
- Currently, more than 13,000 community clinics are providing monthly aggregated online report using HMIS data management software DHIS2
- Out of the 200 SAM facilities, 164 have been providing reports to IPHN through email or web postal. Reporting rate was more than 84% in June 2017
- At the district and upazila levels, 424 'baby-friendly hospitals' were established

Digital Archive at IPHN

Creation of an archive is one of the steps in establishing Digital Bangladesh as declared by the Government of Bangladesh to implement Vision 2021. Following the decisions taken in the meetings on 25 May 2014 and 21 August 2014, the IPHN/NNS, on principle, agreed to establish the Digital Archive at IPHN/NNS in collaboration with Bangladesh Knowledge Management Initiative (BKMI) of the Bangladesh Center for Communication

Programs (BCCP). The IPHN/NNS engaged a dedicated team of personnel for operations of the Digital Archive.

eToolkit

The eToolkit is being used both by fieldworkers and program managers as a very useful digital IPC and counseling material for behavior change communication. A lot of activities are going on surrounding the eToolkit.

Creation of the position of district nutrition officer

The Government created a position of district nutrition officer for all 64 districts.

BCC activities

- *Digital archives:* To strengthen institutional memory and facilitate coordination, the BKMI assisted IPHN to create digital archives. The digital archives allow all stakeholders to have quick, online access to the SBCC (Social and Behavior Change Communication) materials that have been developed by three units. The staff members of the units are being trained and will be responsible for updating and maintaining the digital archives
- *HPN (Health Nutrition and Population) BCC eToolkit for fieldworkers:* The HPN's BCC eToolkit for fieldworkers is a digital library of high-quality print and electronic materials on health, population and nutrition issues. The eToolkit was designed as a resource for fieldworkers while counseling their clients. It is updated annually by the BCC Working Group. The eToolkit is available online at www.dghs.gov.bd and <http://bdsbcc.org/> as well as offline and via Google Play for Android-based mobile devices
- The eToolkit was launched for SBCC Program Managers and Planners
- Eight video-based eLearning courses for fieldworkers were developed, updated, and made available online and via Android OS
- For strategic communication through BCC tools, we developed and are developing different types of poster, brochure, flipchart, booklet, leaflet, and TVC, etc. to bring desired changes in behavior that result in the improvement of nutritional status
- HPN coordination committee and SBCC working group formed a platform where we share, exchange views, and update information among members on the effective use of the BCC activities of the different sectors of the MOHFW as well as other related stakeholders, and, thus, develop a common understanding to address issues relating to behavior change communication across the sectors
- For effective and smooth operation of the BCC activities of the NNS, a BCC team has been formed consisting of 8 members considering this a priority
- *Dissemination of nutrition message through cell phone voice call:* A 29-second voice call was made to disseminate messages on infant and young child feeding (IYCF), maternal nutrition, and service availability to reach 3.95 lakh mothers
- *Develop nutrition-related TV spot, folk song, drama for BTV and Bangladesh Betar:* Two days per week, 30-minute long programs, like drama, folk song, quiz, talk-show, etc. are going to be telecast/broadcast on nutritional issues both in BTV and Betar, with both financial and technical support of NNS/IPHN.
- A flipchart developed on key nutrition messages based on NNS package of services following the basic nutrition module with 7Cs will be used in the BCC session by HA/FWA/CHCP in IPC/counseling for awareness development and sensitization
- Development of a food plate for BCC counseling materials for the mothers on key nutrition messages
- *Development of a cartoon on comic story:* 30,000 (5 sets to 1,000 schools) were distributed where 30 students per day can read this books at a time

- *Development of job-aid on IYCF (Infant and Young Child Feeding):* Mothers/caretakers of children aged 24-59 months) will be included in the BCC session by HA/FWA/CHCP in IPC/counseling for awareness development and sensitization
- *Poster development and distribution:* Five types of poster on different nutritional issues were prepared; 70,000 posters (5 sets/facility) were printed and distributed among all facilities for awareness development and sensitization of the catchment population
- Reviewed and developed BCC materials and messages relating to nutrition for elderly people of Bangladesh
- Reviewed and developed message relating to nutrition for SMS through cell phone
- MoU signed with BTV and Bangladesh Betar for telecasting/broadcasting nutrition-related programs
- Six comic stories were printed
- *Training:* A good number (38,541) of CC workers (CHCP, HA, and FWA) were trained on essential nutrition services delivery

Nutritional surveillance by NNS

The Food Security Nutritional Surveillance-National Nutrition Services (FSNS-NNS), as a continuation of FSNSP, provides nationally-representative estimates of nutritional status and healthcare among children and women, with the aim of reducing malnutrition. Findings from a surveillance in 2015 indicate that Bangladesh is maintaining an impressive track-record of continued progress in nutrition and food security, although some disappointing results are apparent in a number of food consumption indicators and the lack of continued improvement in childhood nutritional status.

Nutrition services through Directorate General of Family Planning

The Directorate General of Family Planning (DGFP), through its MCH Services Unit, has

been providing healthcare to the pregnant mothers and under-5 children since 1975. The DGFP, since then, has also been providing services, like monitoring of maternal weight, IFA supplementation and nutrition education during ANC, growth monitoring of under-5 children, referral of severe malnourished children, and vitamin A supplementation for under-5 children.

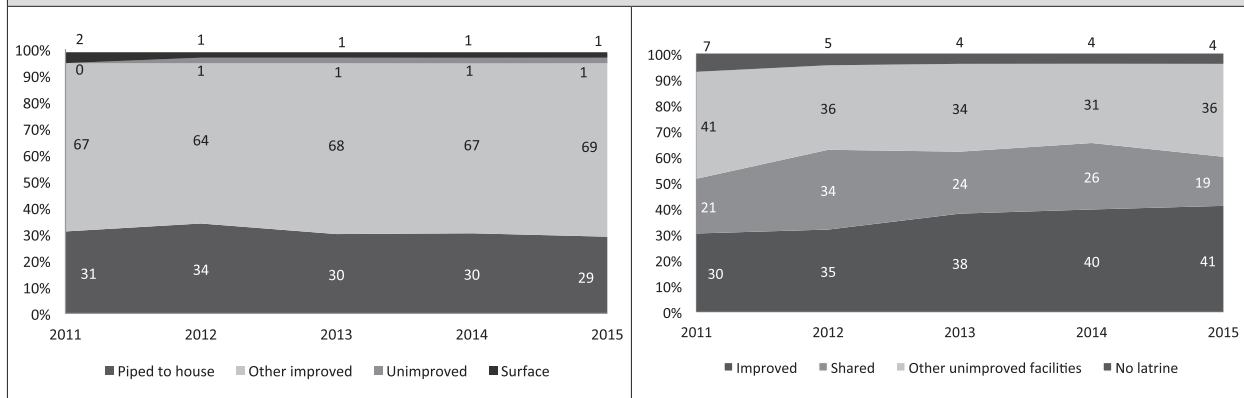
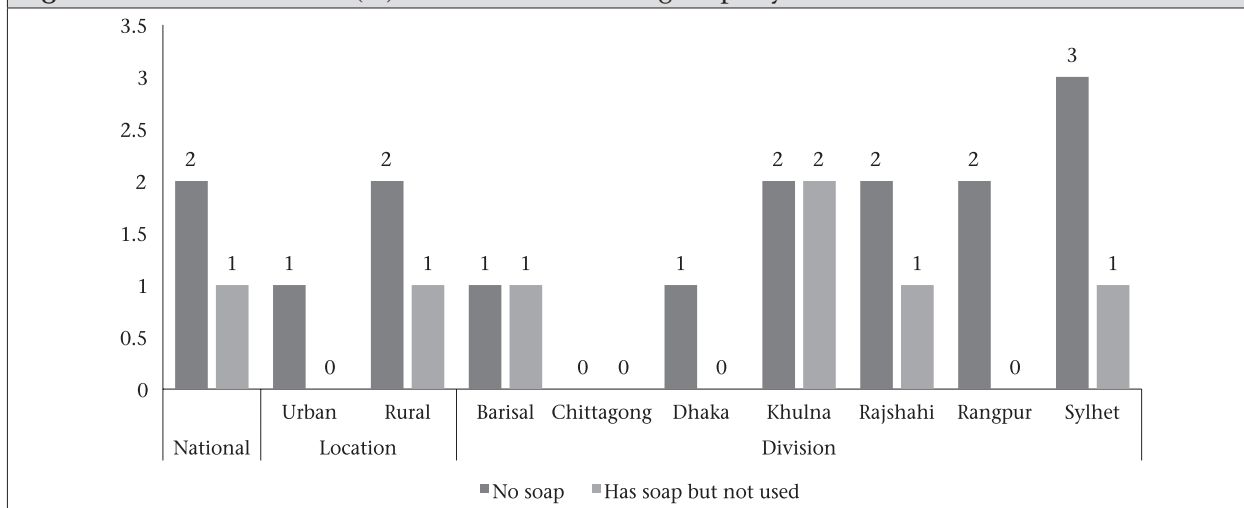
The MCH Services Unit of the DGFP, since 2011, has been implementing MYCNSIA (Maternal and Young Child Nutrition Security Initiatives in Asia) in collaboration with UNICEF in 22 upazilas of 10 districts covering 6,765,910 people. The initiatives taken are: counseling to mothers/caregivers about IYCF, distribution of micronutrient powder (MNP) among 6-23 months old children, counseling to pregnant and lactating mothers on feeding practices and on iron and folic acid (IFA), food security intervention, and handwashing/hygiene practice at the community level.

The MCH Services Unit of the DGFP has trained officials of different levels (both TOT and core training), developed training materials, developed web-based MIS, conducted baseline survey, and procured and distributed MNP sachets, etc., for implementing the MYCNSIA.

The DGFP, through its MCH Services Unit, will scale up nutrition intervention in all upazilas and districts gradually. Service registers and reporting formats were revised to include nutrition information. MIS of the DGFP is currently revisiting nutrition indicators for improvement of the situation.

Drinking-water and sanitation facilities

Based on guidelines of the WHO/UNICEF Joint Monitoring Program for water supply and sanitation, two principal indicators of improved and unimproved water supply were divided into four subgroups: (i) improved sources (ii) other improved sources (iii) unimproved sources and (iv) surface water. Water from 'improved sources' means piped water to dwellings, piped water to yards/

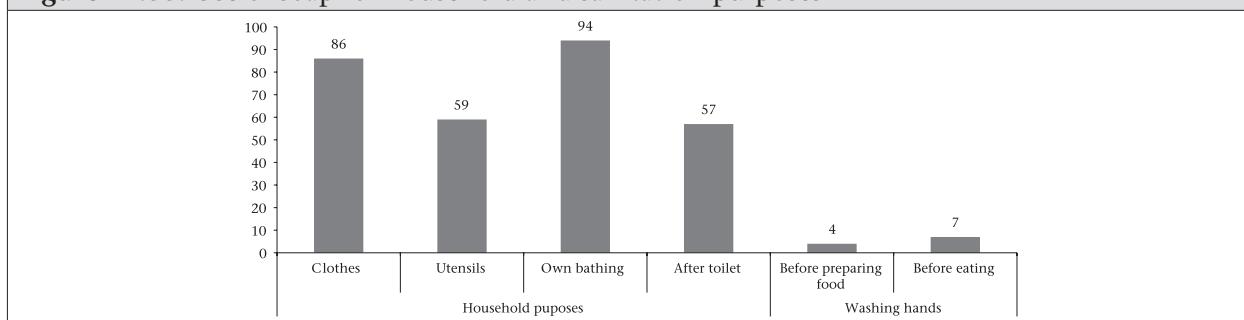
Figure 11.31. Trends in sources of drinking-water (A) and types (B) of latrine, FSNSP 2011- FSNS-NNS 2015**Figure 11.32.** Distribution (%) of households having soaps by division

plots, and water from household tubewells; water from 'other improved sources' means water from public taps, shared tubewells, protected dug-well, and rainwater; water from 'unimproved sources' means water from unprotected dug-well, water-tanker, and spring; 'surface water' means water from ponds, rivers, and other water-bodies.

The proportion of households dependent on piped water declined slightly from 31% to 29% from FSNSP 2011 to FSNS-NNS 2015 (Figure 11.31). However, the proportion of households dependent on 'other improved sources' of water increased from 67% to 69% within the same period. No change in the proportion of households using 'unimproved sources' of water was apparent.

In terms of sanitation indicators, four subgroups are identified: (i) no toilet facility (open defecation), (ii) unimproved facilities which do not ensure hygiene, (iii) otherwise improved facilities which are shared by two or more households and thereby not sanitary, and (iv) improved household facilities which include flush toilets, water-sealed toilets, and closed pit-toilets. From FSNSP 2011 to FSNS-NNS 2015, the proportion of households with access to improved latrines increased from 30% to 41%. Although the proportion of households without access to any latrine decreased from 7% to 4% between 2011 and 2013, no further improvement has been apparent since that time (Figure 11.31 B).

Figure 11.33. Use of soap for household and sanitation purposes



Handwashing behavior

While Bangladesh has made considerable progress in ensuring safer drinking-water and improved toilet facilities for the citizens, other components of a healthy environment are still lagging behind, such as handwashing practices. Beginning in 2012, the FSNSP has integrated handwashing indicators drawing from modules contained in the Maternal Child Health Integrated Program (MCHIP), supplemented by indicators shown to be effective at predicting diarrhea episodes in Bangladesh. Since 2013, these indicators have been collected from all households (not just households with

under-5 children), thus permitting a more comprehensive look into handwashing behavior at the households.

Figure 11.32 shows the percentage of division-wise households having soaps but not used for handwashing. Figure 11.33 shows the percentage of households having soaps and also used for handwashing and other sanitation purposes.

Figure 11.33 shows that 94% of the kitchen managers used soap for bathing and 86% for washing clothes. On the other hand, only 4% of them used soap before preparing food, and 7% used soap for handwashing before eating.

CHAPTER 12

SUCCESS STORIES

Extraordinary achievements

The groundbreaking separation surgery of conjoined twin Tofa-Tohura showcases the progress of health service in Bangladesh.

To achieve something extraordinary, often we need extraordinary resources and infrastructure. We feel proud when we do something remarkable using limited resources; the credit should go to our highly-devoted and skilled healthcare professionals. Here, we present a few of such extraordinary stories that made us proud in the recent years.

Separation of conjoined twin Tofa-Tohura: a triumph of Bangladesh health service

The groundbreaking separation surgery of conjoined twin Tofa-Tohura showcases the progress of health service in Bangladesh. This is the first time our surgeons have successfully separated conjoined twin in Bangladesh. They were born in Bangladesh's Gaibandha district in the northern part of the country, 268 kilometers away from the capital city Dhaka. Concerned civil surgeon made a prompt arrangement for referral to a tertiary-level health facility. A medical officer from the local upazila health complex accompanied them

in a government ambulance. Dhaka Medical College Hospital authority was informed beforehand, and relevant departments started immediate resuscitations on their arrival.

Tofa-Tohura were born on 29 September 2017 in a remote village named Jhinia of Sundarganj upazila in Gaibandha district; the birth was attended by a local midwife. Shahida and her husband Raju Mia were not aware of having the twin since Shahida did not go through any ultrasonography (USG) procedure during her pregnancy. The babies were conjoined, along their spinal columns at their buttocks, known as Pygopagus. They had a single anal canal.

On the eighth day after their birth, Tofa and Tohura were taken to Dhaka Medical College Hospital (DMCH) for treatment. After immediate resuscitations and initial investigations, a 12-member medical board decided for Ileostomy (temporary excretion path) as the babies were born with a single anal canal. After that, a distinctive set of

investigations, including MRI were required for further management planning. Special tests were done until the medical board decided for separation surgery as this was unprecedented in Bangladesh. A separation surgery was planned after six months as weight of the twin was low at that time. They were advised to come to the DMCH for follow-up each month. A press conference was held, and declaration of the separation surgery was made.

The surgical separation of conjoined twin is a delicate and risky procedure requiring extreme precision and care. As the babies were conjoined in the back, there was a chance of many post-operative complications, like paralysis, incontinence of urine, CSF leak, etc. All necessary arrangements, including special operating microscope in OT, two sets of OT with equipment, and ICU bed, were made, and a pre-operative press conference was held on the operation day. After proper counseling, the operation started on 1 August 2017. It took a grueling period of long nine hours for separation of the conjoined twin at their age of 10 months. A team of about 30 doctors from different specialties, under the leadership of Professor Dr. Shahnoor Islam of the Department of Pediatric Surgery, DMCH, was involved in the operation. It was a memorable teamwork of specialists from the field of plastic and reconstructive surgery, neurosurgery, orthopedics, pediatric surgery, anesthesiology, pediatrics, specialty in pediatric ICU management, radiology, specialty in nuclear medicine, pathology, specialty in transfusion medicine, OT nursing, and other associated disciplines. With mercy of the Almighty and skills of our surgeons and anesthetists, the operation was successful; babies started moving their legs just after completion of surgery and reversal of anesthesia; post-operative recovery was uneventful. This happened to be a historic event in the field of surgery in Bangladesh.

Tofa-Tohura's father is a farmer, and all the expenses were met by Social Welfare Department of Bangladesh and Dhaka

Medical College Hospital authority. They were discharged on 10 September from DMCH. Hon'ble Health Minister Mohammed Nasim handed the discharge certificates in a grand ceremony at Dhaka Medical College Hospital. Tofa and Tohura will have to undergo two more surgeries to have a normal life—one to fix their rectum linings and the other on their reproductive organs.

Tofa-Toura's case was a rare pattern of 'Pygopus' twins. About 14 such twins were born in the world. Of the previous 13 cases, 60% have died due to post-operation complications. Tofa-Tohura's successful operation is a milestone in the history of healthcare in Bangladesh. These success stories even reached the UN General Assembly this year and are going to inspire thousands of physicians around the globe in future.

Collaborative response to chikungunya outbreak: a lesson for the future

Recent response to chikungunya outbreak is a milestone in the history of public health services in Bangladesh. Activities ranged from outbreak investigations to door-to-door awareness campaign, clinical management, conveying health message establishing a 24-hour chikungunya Control Room and hotline, publishing daily newsletter, case reporting, and collaboration among Ministry of Health and Family Welfare and city corporations. Chikungunya panic gripped the Dhaka city in June 2017. As a part of outbreak investigators, the Institute of Epidemiology, Disease Control and Research (IEDCR) conducted a survey on re-emerging chikungunya outbreak in Dhaka during December 2016. The Directorate General of Health Services (DGHS) identified 50 areas of Dhaka South City Corporation (DSCC) and Dhaka North City Corporation (DNCC) as hotspots for spreading chikungunya disease, followed by a survey carried out from 1 to 5 June 2017. Based on the recommendations, the chikungunya awareness campaign was designed.



Hon'ble Minister of Health and the whole team are celebrating the discharge ceremony of Tofa-Tohura

Hon'ble Minister for Health and Family Welfare Mohammad Nasim inaugurated the awareness campaign at the lake in Dhanmondi 32 on 17 June, launched jointly by the Directorate General of Health Services and Dhaka South and Dhaka North City Corporations. Twelve thousand medical and dental students, personnel of the health technology institutes, private medical assistant training institutes, nursing institutes, National Institute of Preventive and Social Medicine (NIPSOM), and Platform (Association for Medical and Dental Society) volunteered in 205 groups in 750 spots of 92 wards at the Dhaka city to create awareness about chikungunya. They went from door to door with the prevention-related messages to stop the outbreak of chikungunya. Representatives from the city corporations, with fogger machines and larvicide spray, participated in the campaign to destroy the larvae or pupae of *Aedes* mosquitoes that transmit chikungunya and dengue. Director General of the DGHS Professor Dr. Abul Kalam Azad and Director (Communicable Disease Control Unit) of the DGHS Professor Dr. Sania Tahmina, among others, were present

at launching ceremony of the campaign. Professor Dr. Abul Kalam Azad said, "it is a symbolic campaign to encourage people and create awareness of this issue. If we keep our surroundings clean and remove stagnant water, *Aedes* mosquitoes will not breed." Rallies in 45 wards of the two city corporations, with Imams of mosques, doctors, nurses, and ward councilors, were arranged as part of this campaign. In response to this campaign, Dhaka South City Corporation Mayor Syed Khokon said, "as we had no prior conception about the disease, it is taking more time to manage the outbreak. We hope that, in future, we will be better prepared to prevent any outbreak in the first place, the city corporation increased manpower and medicines to prevent chikungunya virus-transmitter mosquitoes from breeding, or to exterminate them." He added that the budget is being boosted for the purpose.

National Guideline on Clinical Management of Chikungunya Fever was first published on 15 May 2017 by the Communicable Disease Control (CDC) Unit of the DGHS. The



A volunteer is delivering awareness messages on chikungunya in the community [Source: Platform]

IEDCR) played a central role in response to chikungunya outbreak. With the directions of Director General Professor Dr. Abul Kalam Azad, a Public Health Emergency Operation Center (Chikungunya Control Room), with 24/7 working group and a hotline for public queries, was established in the IEDCR. It also provided confirmatory evidence for chikungunya by laboratory tests, like PCR. The IEDCR regularly published health messages and a newsletter on chikungunya for the latest information on chikungunya situation. According to the latest Chikungunya Newsletter (28 September 2017, Issue 56), the number of probable chikungunya cases was 13,814; the number of laboratory-confirmed cases was 1,003, based on samples sent to the IEDCR. Bangabandhu Sheikh Mujib Medical University (BSMMU), along with Dhaka Medical College Hospital (DMCH), provided major clinical services to the chikungunya patients. An arthritis clinic for chikungunya patients was introduced with the help of the Department of Rheumatology in BSMMU on 13 August 2017. Several scientific seminars on chikungunya were arranged by Bangabandhu

Sheikh Mujib Medical University. A scientific seminar titled “Chikungunya: Dhaka Experience” was arranged on 1 August 2017, with Hon’ble Minister for Health and Family Welfare Mohammed Nasim as Chief Guest; The Special Guest in the occasion was Dhaka South City Corporation Mayor Syed Khokon, where Professor Dr. Meerjady Sabrina Flora, Director of the IEDCR and Professor Syed Atiqul Haq presented papers. Prof. Dr. Meerjady Sabrina Flora said, “all the confirmed cases were detected at the IEDCR as no other hospital or health service facility has RT-PCR test and the reagent kit necessary to diagnose the disease. Only a few medical facilities have the equipment to diagnose chikungunya and their charge is as high as Tk10,000 but the IEDCR carries out the test free of charge.”

With an estimated 19 million population, Megacity Dhaka was terrified with sudden attack of chikungunya but coordinated efforts of all the clinicians, public health experts, health administrators, city corporation officials, media personnel, mayors, the Minister, and the personnel of all other concerned institutions

in Bangladesh set an example before the world by tackling a re-emerging disease, like chikungunya.

Operation of Muktamoni: restoration of hope

Muktamoni was denied treatment from Singapore General Hospital. Even amputation of her diseased upper limb was advised to save her life. Physicians from Dhaka Medical College Hospital assured Muktamoni that she would be cured after a few successive operations. She has been recovering from skin grafting, the fifth successful operation on 6 November 2017.

Muktamoni is a 12-year old girl from Satkhira district of Bangladesh, the daughter of a shop-keeper. At the age of 3 years, a marble-like protrusion appeared underneath her armpit, and it gradually increased in size, with unbearable pain and parasitic infection. She was bed-ridden for the last two years. Because of the expenses and confusion over ongoing local treatment of Muktamoni in Khulna, her parents decided not to continue further treatment but Hon'ble Prime Minister Sheikh

Hasina then took the responsibility of her treatment.

Muktamoni was admitted in Dhaka Medical College Hospital (DMCH) on 10 July 2017. She was diagnosed as a patient of hemangioma (a benign tumor of blood vessels) by consecutive medical boards. A video-conference with the Department of Plastic Surgery of Singapore General Hospital was held; the Singaporean surgeons advised not to do the operation but as her pain and sufferings were worsening day by day, the medical board in the DMCH decided to go for biopsy and possible successive operations and skin grafting. Later, a 13-member medical board decided to operate her after examining the biopsy report.

A multidisciplinary surgical team comprising surgeons from Dhaka Medical College Hospital and the National Institute of Cardiovascular Diseases operated her, removing over four kilograms of tumor from her upper limb. Further operations for removing tumors from chest and shoulders are required for complete cure of Muktamoni. Hon'ble Prime Minister Sheikh Hasina thanked the concerned doctors



Muktamoni, a patient with unusual presentation of hemangioma

for her treatment after operation. As a result of the successful surgeries of Muktamoni and Abul Bajandar—another patient whose case is described below, more patients suffering from rare medical conditions are coming to Dhaka Medical College Hospital.

‘Tree Man’ Disease: rare but not incurable

Thanks to the Bangladeshi surgeons who are expecting cure of the Epidermodysplasia verruciformis patient, a rare case in the world. Abul Bajandar is reportedly one of only four persons to be diagnosed with this condition in the world to date. He has undergone 23 operations (latest in July 2017) to remove more than five kilograms of growths from his hands and feet.

Abul Bajandar is popularly known as ‘Tree Man’ because his hands and feet are covered with bark-like warts. The warts began to appear on Bajandar’s limbs when he was 15 years old. Initially, he thought the growths were harmless when he had first spotted them sprouting up on his limbs 10 years ago. Dozens of two-to-

three-inch roots in both hands and some small growth in legs appeared. Within a few years, they proved to be debilitating, causing him immense pain and the eventual impact on his livelihood as he was a rickshaw-puller in Khulna.

Abul Bajandar was admitted in Dhaka Medical College Hospital on 30 January 2016. A nine-member medical board of specialists was formed for the treatment of Abul Bajandar under direct supervision of Professor Dr. Samanta Lal Sen, National Coordinator at the National Institute of Burn and Plastic Surgery. Removal of growth was technically challenging as there were chances of damage to the nerves and emergence of various health problems. Surgeons of Dhaka Medical College Hospital consulted the international experts in the UK and Australia. A biopsy was sent to the USA, and no cancer was found. Abul Bajandar traveled to India for treatment but could not afford the expense of the suggested treatment. The Government of Bangladesh is bearing all the costs, i.e. the total treatment costs till date, including charges for surgeries, medicines, and



Abul Bajandar, after successive surgeries



Hon'ble Health Minister visiting the 'Tree-Man' at Dhaka Medical College Hospital

hospital admission; the cost may be nearly Tk 50 lakh in two years.

A Romanian man was first diagnosed with the disease in March 2007. Another case was reported in Indonesia in November of the same year in a 35-year-old fisherman. The last reported case also occurred in Indonesia in 2009. The Indonesian fisherman, whose case had also received worldwide attention, died in January 30 last year from the complications relating to his condition as the warts began to reappear. Those were surgically removed earlier. According to Professor Dr. Abul Kalam, Head of Department of Burn and Plastic Surgery, DMCH, the hospital is providing appropriate medicines to prevent reappearance of growth in Abul Bajandar's limbs.

Story of Abul Bajandar sparked interest among

international media. Notable international newspapers and electronic media, like The Guardian, CNN, BBC, Telegraph, Time, ABC, Washington Post, Russian Television (RT) Network, and Al-Jazeera, made headlines, published follow-up news and videos regarding success of Tree Man's treatment in Bangladesh.

When Bajandar was admitted in the hospital, his hands were so heavy because of the warts that he could not even move these on his own but now, things have changed. In his own words, "I never thought I would ever be able to hold my kid with my hands... Now I feel so much better...Even after the surgeries began, I was wondering whether I could ever use my hands and legs again...but you see, these are functioning, and I can touch my daughter and play with her sometimes."

ANNEX TO CHAPTER 4

1. List of public hospitals with the number of OPD service given in 2016 distributed among patients of different age-groups

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Total				
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male					
1	Kaptai 10-bed Hospital, Rangamati	278	304	457	330	584	302	1,157	334	319	264	4,329				
2	Kukua 10-bedded Hospital	725	509	800	525	2,379	1,897	3,035	2,315	1,475	1,559	15,219				
3	Aliahah 20-bedded Hospital, Shibganj, Bogra	168	166	527	361	867	679	5,638	1,339	3,682	1,304	14,731				
4	Bibirhat 20-bedded Hospital, Fatikchhari, Chittagong	1,793	1,786	2,056	2,180	2,405	2,008	5,248	3,574	3,178	2,832	27,060				
5	Kaitak 20-bedded Hospital, Chhatak, Sunamganj	560	624	761	642	1,186	389	1,681	634	794	236	7,507				
6	Kuakata 20-bedded Hospital, Kalapara, Patuakhali	636	798	577	657	738	480	1,793	959	644	699	7,981				
7	Nandigram 20-bedded Hospital, Nandigram, Bogra	533	415	1,078	840	2,398	1,283	3,652	1,621	962	765	13,547				
8	Taltoli 20-bedded Hospital, Amtali, Barguna	580	705	759	816	818	410	2,331	946	989	1,231	9,585				
9	Ullapara 20-bedded Hospital, Ullapara, Sirajganj	832	1,037	900	921	878	867	911	917	898	868	9,029				
10	Godagari 31-bedded Hospital, Rajshahi	1,859	2,208	2,858	2,715	4,624	1,850	8,731	2,352	3,189	3,512	33,898				
11	Haragacha 31-bed Hospital, Rangpur	5,853	5,072	8,112	6,632	11,207	9,062	14,093	11,037	15,125	13,144	99,337				
12	Tongi 50-bed Hospital, Gazipur (renamed as Shaheed Ahsanullah Master 250-bedded General Hospital)	7,601	11,719	9,991	6,847	32,911	26,138	20,658	19,922	14,110	25,891	175,788				
13	Abhoynagar Upazila Health Complex	7,742	5,783	8,761	6,180	10,036	6,694	12,898	8,662	10,657	7,367	84,780				
14	Adamdighi Upazila Health Complex	6,455	5,826	3,931	4,108	9,761	4,994	15,046	7,585	12,537	7,140	77,383				
15	Auditmari Upazila Health Complex	2,446	1,590	3,782	2,227	3,849	2,906	6,792	4,933	3,464	2,866	34,855				
16	Agailjhara Upazila Health Complex, Barisal	2,395	2,440	1,946	1,772	2,000	1,808	2,019	1,747	1,739	1,522	19,388				
17	Akhaura Upazila Health Complex	4,650	3,561	5,501	3,584	7,629	3,758	9,144	3,808	5,135	3,554	50,324				
18	Akkelpur Upazila Health Complex	5,774	6,479	3,261	4,110	6,696	3,334	11,381	4,399	4,239	3,057	52,730				
19	Alamdanga Upazila Health Complex	6,336	3,868	3,393	2,298	5,713	4,448	19,399	12,971	7,950	5,764	72,140				
20	Alfadanga Upazila Health Complex	3,284	2,893	3,627	2,908	5,283	4,623	6,990	5,976	2,955	2,950	41,489				
21	Alikadam Upazila Health Complex	706	428	1,472	812	3,329	1,718	9,316	3,082	500	343	21,706				
22	Amtali Upazila Health Complex	2,296	2,215	1,985	2,457	6,380	3,526	3,817	2,386	2,069	1,647	28,778				
23	Anwara Upazila Health Complex	1,311	973	1,416	1,290	1,400	1,242	1,323	1,329	1,594	1,316	13,194				
24	Araihazar Upazila Health Complex	2,719	3,037	12,383	5,227	25,872	18,879	27,241	14,938	15,529	7,906	133,731				
25	Ashuganj Upazila Health Complex	1,389	1,448	1,801	1,546	1,405	571	9,373	2,697	2,598	1,627	24,455				

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
26	Assasuni Upazila Health Complex	2,902	2,453	4,194	3,590	7,170	4,383	15,766	8,490	7,258	6,001	62,207		
27	Atghoria Upazila Health Complex	6,239	7,136	6,076	6,076	9,977	5,490	26,132	9,846	10,483	9,791	97,343		
28	Atpara Upazila Health Complex	1,676	1,721	2,654	1,782	5,494	3,742	6,072	4,245	2,938	2,140	32,464		
29	Atrai Upazila Health Complex	1,430	1,307	1,417	1,686	4,158	2,876	3,745	2,963	2,704	2,279	24,565		
30	Atwari Upazila Health Complex	1,677	1,865	2,250	1,615	2,975	1,968	7,209	4,783	3,827	2,714	30,883		
31	Austagram Upazila Health Complex	2,612	2,860	4,427	4,619	6,708	6,742	7,924	8,517	1,923	1,973	48,305		
32	Azmiriganj Upazila Health Complex	5,558	4,651	7,216	6,337	8,115	7,591	7,192	7,073	4,891	5,340	63,964		
33	Babuganj Upazila Health Complex, Barisal	1,643	1,022	3,503	2,846	3,834	1,978	4,149	2,216	5,872	2,455	29,518		
34	Badalgachi Upazila Health Complex	1,821	1,635	2,308	1,666	4,189	2,026	4,922	2,655	2,886	2,172	26,280		
35	Badarganj Upazila Health Complex	3,843	3,106	4,484	3,663	4,938	4,103	4,897	4,563	5,695	4,878	44,170		
36	Bagatipara Upazila Health Complex	5,251	5,662	4,601	5,356	6,521	4,657	22,071	11,138	15,246	7,812	88,315		
37	Bagherpara Upazila Health Complex	2,346	3,106	6,538	1,257	6,807	1,527	7,035	1,786	8,133	2,483	41,018		
38	Bagha Upazila Health Complex	5,129	6,871	4,408	4,778	10,625	3,689	24,376	6,217	17,829	7,455	91,377		
39	Baghaichari Upazila Health Complex	932	873	1,562	1,274	1,808	1,426	2,266	1,824	1,082	833	13,880		
40	Bagmara Upazila Health Complex	547	442	1,074	677	2,001	1,055	2,434	1,014	215	135	9,594		
41	Bahubal Upazila Health Complex	7,446	7,764	11,563	11,173	11,665	11,695	10,900	11,998	5,948	8,036	98,188		
42	Bajitpur Upazila Health Complex	4,133	5,127	6,506	6,096	9,004	5,669	19,521	5,303	10,545	7,389	79,293		
43	Bakerganj Upazila Health Complex, Barisal	2,519	1,626	4,115	2,476	7,537	5,108	15,693	10,154	5,285	4,135	58,648		
44	Bakshiganj Upazila Health Complex	2,758	2,715	7,738	6,842	10,922	10,323	12,991	12,847	5,812	7,593	80,541		
45	Balaganj Upazila Health Complex	1,928	1,373	5,443	5,542	6,375	3,609	14,802	7,209	5,721	3,503	55,505		
46	Baliadangi Upazila Health Complex	19	0	3,437	2,192	1,222	2,577	532	741	19	248	10,987		
47	Baliakandi Upazila Health Complex	2,617	1,545	4,328	3,156	5,541	4,256	7,116	5,334	4,707	3,591	42,191		
48	Bamna Upazila Health Complex	1,302	1,798	1,124	1,293	1,258	932	5,120	2,767	2,608	4,278	22,480		
49	Banaripara Upazila Health Complex	5,292	5,252	3,151	3,423	5,211	3,038	13,204	4,036	4,556	4,183	51,346		
50	Bancharampur Upazila Health Complex	3,258	3,081	3,791	3,482	4,211	3,833	5,735	4,966	4,744	4,549	41,650		
51	Bandar Upazila Health Complex	3,682	3,512	4,085	3,564	2,640	1,771	25,735	11,087	2,960	2,130	61,166		
52	Baniachong Upazila Health Complex	5,769	5,954	14,403	13,080	17,704	9,283	19,497	11,773	10,620	9,036	117,119		
53	Banshkhali Upazila Health Complex	7,336	6,236	5,810	4,342	8,033	4,582	7,115	5,017	7,753	5,709	61,933		
54	Baraigram Upazila Health Complex	5,881	5,052	7,472	6,249	10,149	8,398	11,607	9,923	11,542	9,453	85,726		

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
55	Barhatta Upazila Health Complex	2,494	2,343	3,459	3,567	6,157	3,382	16,000	5,939	5,368	5,357	5,368	5,939	5,368	5,357	54,066
56	Barkol Upazila Health Complex	225	235	461	665	697	698	1,547	1,471	367	495	367	1,471	367	495	6,861
57	Barlekha Upazila Health Complex	4,592	4,675	3,823	3,613	7,050	4,369	8,636	4,970	2,449	2,934	2,449	4,970	2,449	2,934	47,111
58	Barura Upazila Health Complex	2,764	2,517	3,037	2,769	9,544	3,413	11,249	3,832	8,242	5,345	8,242	3,832	8,242	5,345	52,712
59	Batiaghata Upazila Health Complex	1,103	992	1,450	1,347	5,008	3,037	11,266	6,394	5,634	4,114	5,634	6,394	5,634	4,114	40,345
60	Bauphal Upazila Health Complex	4,228	3,546	5,831	4,987	6,836	6,121	7,412	7,033	5,052	5,306	5,052	7,033	5,052	5,306	56,352
61	Beanibazar Upazila Health Complex	4,469	4,026	5,356	5,308	8,378	6,601	22,304	11,422	3,153	3,323	3,153	11,422	3,153	3,323	74,340
62	Begumganj Upazila Health Complex	3,109	2,988	1,834	1,586	5,431	1,871	20,238	4,678.20	6,343	3,368	6,343	4,678.20	6,343	3,368	51,446.20
63	Belabo Upazila Health Complex	6,348	4,132	7,953	5,127	15,829	5,940	23,677	7,146	8,595	5,379	8,595	7,146	8,595	5,379	90,126
64	Belaichari Upazila Health Complex	644	689	1,258	1,375	1,285	1,215	1,287	1,274	729	842	729	1,274	729	842	10,598
65	Belkuchi Upazila Health Complex	4,043	4,411	5,307	4,925	8,129	4,655	16,294	8,206	7,226	6,501	7,226	8,206	7,226	6,501	69,697
66	Bera Upazila Health Complex	4,805	5,756	2,695	3,615	4,207	4,276	10,311	7,414	5,063	6,204	5,063	7,414	5,063	6,204	54,346
67	Betagi Upazila Health Complex	1,071	1,289	947	1,119	1,355	752	3,349	1,369	1,763	2,286	1,763	1,369	1,763	2,286	15,300
68	Bhairab Upazila Health Complex	3,784	3,265	5,277	4,124	8,430	4,334	8,566	4,580	5,473	3,897	5,473	4,580	5,473	3,897	51,730
69	Bhatuka Upazila Health Complex	873	728	2,846	2,352	3,661	3,354	3,171	3,381	2,334	2,452	2,334	3,381	2,334	2,452	25,152
70	Bhandaria Upazila Health Complex	2,244	1,595	3,285	2,138	2,933	1,708	9,371	3,334	3,029	3,870	3,029	3,334	3,029	3,870	33,507
71	Bhanga Upazila Health Complex	9,116	9,134	1,933	3,121	4,260	2,313	4,351	2,543	3,778	2,467	3,778	2,543	3,778	2,467	43,016
72	Bhangura Upazila Health Complex	6,172	4,600	2,472	1,636	6,730	3,569	22,228	16,276	6,374	4,146	6,374	16,276	6,374	4,146	74,203
73	Bhedarganj Upazila Health Complex	3,696	2,884	3,096	2,207	4,376	2,686	5,200	3,458	5,172	3,775	5,172	3,458	5,172	3,775	36,550
74	Bheramara Upazila Health Complex	10,257	9,756	4,218	1,940	6,788	3,128	26,370	12,083	5,107	2,353	5,107	12,083	5,107	2,353	82,000
75	Bholahat Upazila Health Complex	2,005	1,567	3,704	3,018	5,274	4,322	6,998	5,865.80	9,034	7,405	9,034	5,865.80	9,034	7,405	49,192.80
76	Bhuapur Upazila Health Complex	3,058	3,229	4,259	4,313	4,714	4,516	4,045	4,232	2,658	3,005	2,658	4,232	2,658	3,005	38,029
77	Bhurungamani Upazila Health Complex	2,262	1,695	3,226	2,884	5,262	3,303	7,955	6,296	9,593	7,926	9,593	6,296	9,593	7,926	50,402
78	Birampur Upazila Health Complex	3,486	1,883	3,838	2,405	4,917	4,726	6,895	5,397	5,599.30	5,417	5,599.30	5,397	5,599.30	5,417	44,563.30
79	Birganj Upazila Health Complex	2,279	2,155	3,085	2,755	4,799	3,736	9,040	6,746	4,224	4,771	4,224	6,746	4,224	4,771	43,590
80	Birol Upazila Health Complex	2,626	2,723	2,931	2,931	3,933	3,341	6,308	5,154	4,799	4,728	4,799	5,154	4,799	4,728	39,474
81	Biswambarpur Upazila Health Complex	6,486	6,490	7,015	6,683	12,640	9,429	16,540	12,627	12,384	9,880	12,384	12,627	12,384	9,880	100,174
82	Biswanath Upazila Health Complex	6,416	5,455	5,761	4,040	9,901	6,030.90	13,167	7,162	11,201	8,201	11,201	7,162	11,201	8,201	77,334.90
83	Boalkhali Upazila Health Complex	8,212	8,911	7,457	7,971	10,447	4,752	21,621	7,821	5,669	5,956	5,669	7,821	5,669	5,956	88,817

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
84	Boalmari Upazila Health Complex	8,418	10,493	5,708	5,931	7,932	4,644	16,850	8,151	8,237	6,685	83,049		
85	Bochaganj Upazila Health Complex	2,354	1,892	2,854	2,291	3,380	2,769	9,484	8,119	5,391	4,701	43,235		
86	Boda Upazila Health Complex	3,757	4,935	3,756	3,633	4,069	3,601	3,648	3,830	3,344	3,568	38,141		
87	Borhanuddin Upazila Health Complex	1,414	1,826	2,734	3,930	3,351	2,153	7,184	4,751	3,320	1,961	32,624		
88	Brahmanpara Upazila Health Complex	2,793	3,481	1,735	2,035	2,305	1,003	5,304	1,394	2,013	1,298	23,361		
89	Burichong Upazila Health Complex	2,107	1,590	2,059	1,620	1,857	1,574	2,104	1,693	2,256	1,801	18,661		
90	Chauddagram Upazila Health Complex	8,333	4,576	10,862	6,540	15,073	10,581	29,285	22,612	13,303	9,368	130,533		
91	Chakaria Upazila Health Complex, Cox's Bazar	3,815	4,326	3,258	2,948	3,041	2,476	4,986	2,789	1,579	2,377	31,595		
92	Chandanaish Upazila Health Complex	4,468	5,198	4,039	4,629	5,583	2,949	12,838	4,289	4,091	3,990	52,074		
93	Chandina Upazila Health Complex	4,970	5,886	2,894	2,935	4,798	2,744	8,684	3,976	4,067	4,066	45,020		
94	Charbhadrason Upazila Health Complex	2,089	2,014	2,111	2,101	2,256	2,189	2,210	2,238	2,431	2,363	22,002		
95	Charfession Upazila Health Complex	8,505	10,284	4,629	5,290	7,897	3,341	19,523	5,845	4,002	7,505	76,821		
96	Charghat Upazila Health Complex	2,223	2,086	2,664	2,441	5,558	3,541	6,638	4,312	7,185	4,922	41,570		
97	Chatkhil Upazila Health Complex	1,695	1,526	2,805	2,221	6,061	4,451	7,449	6,504	10,158	7,729	50,599		
98	Chatmohar Upazila Health Complex	7,428	7,095	6,403	6,661	8,983	4,045	23,850	10,465	7,318	4,240	86,488		
99	Chhagalnaya Upazila Health Complex	4,723	3,844	7,253	6,447	6,520	5,932	7,916	7,374	9,381	6,716	66,106		
100	Chhatak Upazila Health Complex	3,089	4,214	4,743	4,117	6,495	3,206	12,629	6,317	3,034	1,769	49,613		
101	Chilmari Upazila Health Complex	1,165	1,308	1,941	2,795	2,752	4,341	3,532	6,349	1,128	1,919	27,230		
102	Chirribandar Upazila Health Complex	6,416	6,727	6,385	10,416	6,772	7,256	6,581	7,134	6,378	6,966	71,031		
103	Chitaimari Upazila Health Complex	3,701	1,364	5,909	2,388	10,116	3,893	11,014	3,989	6,916	2,833	52,123		
104	Chowgacha Upazila Health Complex	11,110	12,359	8,523	5,067	13,103	6,552	17,351	8,061	9,277	6,621	98,024		
105	Chowhali Upazila Health Complex	1,531	1,380	1,619	1,676	5,799	4,324	7,424	6,021	3,104	2,646	35,524		
106	Chunarughat Upazila Health Complex	2,658	2,458	2,584	2,555	4,022	2,590	6,311	4,351	3,444	4,267	35,240		
107	Comilla Sadar Daxin Upazila Health Complex	1,677	1,284	1,272	1,131	2,594	1,591	4,977	2,519	987	905	18,937		
108	Companiganj SH Upazila Health Complex	4,981	4,693	4,188	3,857	3,826	3,512	10,207	7,530	3,240	2,827	48,861		
109	Companiganj Upazila Health Complex	12,856	13,002	7,244	7,124	8,287	6,541	15,559	13,400	6,748	7,798	98,559		
110	Dacope Upazila Health Complex	1,510	1,587	1,566	1,518	2,936	1,363	7,848	3,207	3,527	6,398	31,460		
111	Daganbhuiya Upazila Health Complex	6,269	3,004	4,306	1,861	5,025	2,182	8,819	3,662	2,064	1,181	38,373		
112	Dakhin Surma Upazila Health Complex	1,675	1,173	1,982	1,468	2,919	2,123	7,098	4,057	843	466	23,804		

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
113	Damudya Upazila Health Complex	4,417	3,669	9,195	6,602	10,216	7,438	10,465	7,658	6,194	5,441	71,295		
114	Damurhuda Upazila Health Complex	6,384	4,739	7,758	6,066	7,606	6,191	8,123	6,355	8,637	6,389	68,248		
115	Dashmina Upazila Health Complex	1,991	2,273	1,545	1,497	2,677	1,225	5,089	2,266	2,517	2,629	23,709		
116	Daudkandi Upazila Health Complex	12,475	14,315	7,380	8,009	13,252	4,095	21,963	7,346	5,924	5,222	99,981		
117	Daulatkhan Upazila Health Complex	4,624	4,562	2,700	2,454	4,598	1,847	6,469	3,258	3,743	4,080	38,335		
118	Daulatpur KT Upazila Health Complex	1,717	2,001	1,842	2,287	7,816	2,646	13,899	5,474	5,013	3,851	46,546		
119	Daulatpur Upazila Health Complex	5,602	6,549	21,183	8,715	12,660	7,967	9,053	9,364	2,922	2,921	86,936		
120	Debhata Upazila Health Complex	3,017	1,570	2,831	1,721	3,880	1,883	3,022	2,100	2,342	1,786	24,152		
121	Debidwar Upazila Health Complex	10,349	14,690	6,446	4,450	8,887	6,250	18,563	8,326	9,907	7,381	95,249		
122	Debiganj Upazila Health Complex	3,284	4,348	3,055	4,527	10,832	6,523	11,347	11,568	4,265	7,046	66,795		
123	Delduar Upazila Health Complex	2,818	2,453	3,452	3,050	4,536	4,465	4,448	4,792	3,031	3,588	36,633		
124	Derai Upazila Health Complex	1,770	1,683	1,681	1,824	1,969	1,801	3,655	3,184	3,196	3,322	24,085		
125	Dewanganj Upazila Health Complex	3,457	3,079	4,141	3,420	3,944	3,691	3,034	3,239	2,659	2,789	33,453		
126	Dhamairhat Upazila Health Complex	2,199	2,044	2,513	2,323	6,414	5,945	7,334	6,168	4,094	4,584	43,618		
127	Dhamrai Upazila Health Complex	15,277	15,386	11,661	7,288	14,506	9,180	30,512	15,731	18,705	10,522	148,768		
128	Dhanbari Upazila Health Complex	854	566	1,117	599	2,908	981	8,850	2,725	3,586	2,435	24,621		
129	Dharmapasha Upazila Health Complex	2,471	2,145	3,726	2,875	3,666	4,002	2,544	3,005	1,536	2,028	27,998		
130	Dhubaura Upazila Health Complex	2,451	2,804	2,329	2,208	4,605	1,944	8,712	3,156	2,987	2,516	33,712		
131	Dhunat Upazila Health Complex	3,784	3,398	7,869	5,822	11,221	8,721	11,786	9,394	2,403	2,746	67,144		
132	Dhupchachia Upazila Health Complex	1,723	523	4,111	1,393	15,549	6,075	15,139	12,490	2,395	1,309	60,707		
133	Dighalia Upazila Health Complex	4,640	2,940	5,754	3,784	6,890	4,450	9,961	6,336	6,879	4,595	56,229		
134	Dighinala Upazila Health Complex	2,692	2,291	2,429	2,229	2,807	2,640	3,340	3,185	2,861	3,204	27,678		
135	Dimla Upazila Health Complex	1,719	134	3,936	2,995	6,748	5,674	6,776	7,053	3,277	5,460	43,772		
136	Doarabazar Upazila Health Complex	3,332	3,102	2,741	2,469	2,520	2,117	15,816	12,421	1,956	1,567	48,041		
137	Dohar Upazila Health Complex	10,506	10,498	6,102	6,088	7,333	4,400	13,082	4,435	4,445	4,041	70,930		
138	Domar Upazila Health Complex	1,705	1,620	2,641	2,181	3,003	2,834	3,072	3,131	3,563	2,610	26,360		
139	Dumki Upazila Health Complex	693	700	1,727	1,198	2,815	1,114	1,982	926	1,728	894	13,777		
140	Dumuria Upazila Health Complex	4,629	3,306	5,615	3,738	5,976	3,995	7,964	4,459	6,885	4,751	51,318		
141	Durgapur Upazila Health Complex, Netrakona	4,921	4,722	4,358	4,631	7,915	4,056	20,092	6,843	8,072	8,803	74,413		

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
142	Durgapur Upazila Health Complex, Rajshahi	4,089	3,952	5,871	4,984	10,217	6,075	13,457	6,458	6,615	4,879	66,597		
143	Fakirhat Upazila Health Complex	7,359	5,450	7,771	5,591	5,240	3,658	7,531	5,793	9,686	5,202	63,281		
144	Faridganj Upazila Health Complex	2,320	2,099	2,510	2,225	2,893	2,531	3,539	3,026	3,298	3,113	27,554		
145	Faridpur Upazila Health Complex	1,813	1,350	6,163	5,599	11,246	8,442	11,674	8,827	2,107	1,917	59,138		
146	Fatikchhari Upazila Health Complex	6,022	4,796	6,500	5,666	6,389	3,465	11,125	5,223	4,365	3,337	56,888		
147	Fenchuganj Upazila Health Complex	4,664	3,976	3,273	1,862	3,347	1,848	7,196	1,914	1,756	2,649	32,485		
148	Fulbari DP Upazila Health Complex	2,487	2,174	2,342	2,456	13,136	9,514	13,895	10,472	11,126	7,942	75,544		
149	Fulbari KG Upazila Health Complex	1,496	1,338	1,299	1,135	2,504	1,851	7,273	5,511	2,082	1,943	26,432		
150	Fulbaria Upazila Health Complex	3,978	4,630	3,590	3,907	5,560	3,144	12,517	4,842	4,647	4,533	51,348		
151	Fulchhari Upazila Health Complex	1,640	1,330	1,791	1,419	2,350	1,900	4,279	3,410	3,396	2,528	24,043		
152	Fulpur Upazila Health Complex	1,821	1,392	2,170	2,035	2,228	2,224	2,141	2,251	2,183	2,086	20,531		
153	Fulgazi Health Complex, Feni	1,700	2,536	1,837	1,959	3,643	1,971	4,598	2,955	3,145	2,703	27,047		
154	Fultala Upazila Health Complex	2,222	2,670	2,794	2,857	4,459	1,950	11,082	3,693	5,475	4,241	41,443		
155	Gabatali Upazila Health Complex	2,665	2,930	3,045	1,984	6,598	3,811	9,795	4,837	6,346.60	3,426	45,437.60		
156	Galachipa Upazila Health Complex	2,584	2,526	1,119	1,244	2,720	627	7,102	2,208	2,317	2,082	24,529		
157	Gangachara Upazila Health Complex	1,239	1,221	2,874	2,371	4,215	4,086	5,227	5,537	4,447	5,502	36,719		
158	Gangni Upazila Health Complex	6,906	5,468	14,381	9,565	22,907	16,133	25,430	18,413	7,042	5,413	131,658		
159	Gazaria Upazila Health Complex	9,011	11,198	4,671	3,979	10,650	7,039	17,028	11,837	6,929	6,635	88,977		
160	Ghatail Upazila Health Complex	4,008	2,077	3,423	3,316	5,850	3,273	9,565	5,681	8,966	5,536	51,695		
161	Ghior Upazila Health Complex	3,933	2,917	4,516	3,370	5,008	3,770	13,302	7,360	4,297	3,247	51,720		
162	Ghoraghat Upazila Health Complex	2,813	2,541	5,228	4,579	7,499	6,795	12,809	11,879	7,219	6,680	68,042		
163	Goalanda Upazila Health Complex	7,335	7,760	3,517	3,286	5,427	3,705	13,175	5,449	5,137	4,404	59,195		
164	Gobindaganj Upazila Health Complex	3,924	4,258	1,912	1,804	8,001	1,511	16,233	5,050	6,823	4,116	53,632		
165	Godagari Upazila Health Complex	2,007	3,073	2,308	3,102	4,007	1,704	9,103	2,693	3,769	3,219	34,985		
166	Gofargaon Upazila Health Complex	8,495	5,620	10,626	8,726	12,239	10,475	13,406	11,507	9,121	11,705	101,920		
167	Golapganj Upazila Health Complex	5,287	7,339	6,444	6,251	8,500	8,368	8,302	7,797	9,223	10,014	77,525		
168	Gomastapur Upazila Health Complex	3,213	3,118	5,104	4,257	6,801	6,083	8,062	7,628	7,095	7,127	58,488		
169	Gopalpur Upazila Health Complex	2,894	2,897	2,346	3,884	11,043	8,193	13,949	12,755	9,339	8,070	75,370		
170	Gouripur Upazila Health Complex	6,428	5,537	8,021	6,666	12,069	7,231	16,339	9,786	13,415	8,145	93,637		

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male					
171	Gournadi Upazila Health Complex	5,562	4,971	4,201	3,707	4,263	3,889	6,925	4,580	5,003	3,864	46,965				
172	Gowainghat Upazila Health Complex	6,231	4,931	8,367	7,054	10,640	9,160	12,385	11,637	14,210	13,007	97,622				
173	Gurudashpur Upazila Health Complex	4,011	2,447	7,465	4,101	11,747	6,494	23,146	13,657	2,869	1,794	77,731				
174	Haimchar Upazila Health Complex	1,408	841	1,519	1,002	2,031	1,340	2,964	2,023	3,493	3,349	19,970				
175	Hakimpur Upazila Health Complex	3,271	3,494	3,539	3,654	6,451	4,104	11,831	5,301	7,458	6,132	55,235				
176	Haluaghat Upazila Health Complex	1,864	1,869	1,998	1,815	9,594	3,599	9,900	3,847	1,979	1,260	37,725				
177	Harinakunda Upazila Health Complex	5,259	5,690	3,673	3,789	5,175	2,860	18,114	6,078	7,937	4,855	63,430				
178	Haripur Upazila Health Complex	267	276	290	325	331	339	352	402	322	288	3,192				
179	Harirampur Upazila Health Complex	1,425	1,365	1,277	1,245	1,790	1,951	2,332	2,938	2,924	4,727	21,974				
180	Hathazari Upazila Health Complex	5,170	4,372	5,688	4,850	6,034	5,208	8,661	6,992	9,815	4,204	60,994				
181	Hatibandha Upazila Health Complex	1,717	1,466	2,863	2,569	4,216	3,730	4,779	4,415	4,614	4,592	34,961				
182	Hatiya Upazila Health Complex	2,789	3,466	2,883	3,050	3,761	2,019	10,648	3,538	3,355	3,709	39,218				
183	Haziganj Upazila Health Complex	2,808	2,168	1,901	1,447	2,261	1,428	7,467	2,614	2,339	1,697	26,130				
184	Hijla Upazila Health Complex	625	565	1,212	729	1,705	924	1,873	949	943	633	10,158				
185	Honna Upazila Health Complex	5,313	5,805	3,534	3,485	6,023	2,296	10,524	3,771	4,513	3,776	49,040				
186	Hossainpur Upazila Health Complex	5,304	7,731	3,315	3,774	7,398	3,795	13,635	4,553	4,808	4,911	59,224				
187	Islampur Upazila Health Complex	4,559	3,765	4,488	3,542	17,208	5,320	16,485	9,145	12,724	6,985	84,221				
188	Iswardi Upazila Health Complex	6,349	8,029	2,644	3,399	6,813	1,912	12,381	3,579	5,790	3,772	54,668				
189	Iswarganj Upazila Health Complex	4,085	3,032	7,891	5,276	10,882	6,144	11,062	6,117	7,779	4,984	67,252				
190	Itna Upazila Health Complex	4,754	3,954	8,506	6,597	11,841	9,763	14,215	11,752	14,901	11,908	98,191				
191	Jagannathpur Upazila Health Complex	2,847	2,707	3,458	3,472	4,209	4,032	18,422	4,701	5,679	3,329	52,856				
192	Jaldhaka Upazila Health Complex	4,189	3,767	4,076	3,830	4,459	4,196	4,185	4,207	3,141	3,433	39,483				
193	Jamalganj Upazila Health Complex	11,640	9,660	12,037	10,793	11,751	10,749	11,477	11,566	11,600	10,635	111,908				
194	Jhenaigati Upazila Health Complex	156	203	179	196	268	140	956	324	324	287	3,033				
195	Jhikargacha Upazila Health Complex	3,081	2,396	4,574	3,661	12,617	4,637	18,482	5,536	4,207	2,832	62,023				
196	Jibannagar Upazila Health Complex	492	227	7,775	3,482	13,011	3,772	32,401	15,012	730	1,508	78,410				
197	Jointapur Upazila Health Complex	2,925	2,173	3,550	3,514	5,390	3,704	6,742	6,331	5,268	6,014	45,611				
198	Juraichari Upazila Health Complex	364	460	79	93	113	91	1,597	1,689	522	439	5,447				
199	Juri Upazila Health Complex	152	75	1,139	443	1,633	1,470	1,974	1,755	2,396	2,144	13,181				

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
200	Kabirhat Upazila Health Complex	4,910	4,583	9,147	3,377	6,358	6,870	3,392	2,572	6,019	5,284	52,512				
201	Kachua BH Upazila Health Complex	3,470	3,367	3,326	2,503	7,903	2,042	10,189	2,670	6,223	5,074	46,767				
202	Kachua Upazila Health Complex	2,316	2,520	3,064	2,830	3,650	3,160	9,648	3,599	3,682	3,767	38,236				
203	Kahaloo Upazila Health Complex	6,738	8,048	6,758	6,794	6,337	6,307	6,421	6,342	6,324	6,357	66,426				
204	Kaharol Upazila Health Complex	2,999	3,504	3,620	4,197	6,375	4,669	15,445	9,326	5,482	6,033	61,650				
205	Kalai Upazila Health Complex	5,399	5,974	3,765	3,683	7,911	3,060	21,957	7,621	10,017	7,177	76,564				
206	Kalapara Upazila Health Complex	3,410	4,082	2,359	2,765	4,067	1,638	10,660	4,703	3,408	4,091	41,183				
207	Kalaroa Upazila Health Complex	439	427	558	522	1,188	763	2,272	1,474	994	979	9,616				
208	Kalia Upazila Health Complex	4,028	5,346	3,473	4,579	11,617.50	4,409	12,801	5,151	8,035	4,969	64,408.50				
209	Kaliakair Upazila Health Complex	8,847	7,999	5,025	5,131	11,868	8,871	17,580	13,281	6,775	5,607	90,984				
210	Kaliganj GZ Upazila Health Complex	8,357	13,341	4,942	7,188	23,442	14,509	12,412	9,368	7,712	6,240	107,511				
211	Kaliganj JD Upazila Health Complex	4,395	5,186	4,985	5,255	8,916	3,665	20,910	7,793	9,291	5,181	75,577				
212	Kaliganj LH Upazila Health Complex	610	573	1,426	1,280	1,375	1,384	1,338	1,428	1,558	1,592	12,564				
213	Kaliganj SK Upazila Health Complex	2,476	2,283	1,993	1,862	4,888	1,743	12,943	5,098	5,541	5,012	43,839				
214	Kalihati Upazila Health Complex	5,679	7,841	3,416	3,840	7,092	2,919	19,212	7,065	7,306	7,509	71,879				
215	Kalkini Upazila Health Complex	4,433	2,697	5,657	3,520	6,865	4,436	7,990	5,321	9,232	6,227	56,378				
216	Kalmakanda Upazila Health Complex	1,185	1,009	801	411	1,793	974	1,854	1,135	1,329	765	11,256				
217	Kamaliganj Upazila Health Complex	3,210	2,828	9,559	2,701	5,787	3,537	7,546	4,252	7,319	5,439	52,178				
218	Kamarkhanda Upazila Health Complex	5,714	4,970	5,956	5,152	6,711	5,821	10,455	8,872	4,839	3,817	62,307				
219	Kamolnagar Upazila Health Complex	6,035	4,768	10,298	8,401	13,565	11,907	16,390	12,732	6,032	7,927	98,055				
220	Kanaighat Upazila Health Complex	8,904	6,331	3,257	3,224	6,237	2,903	13,061	6,128	3,626	3,813	57,484				
221	Kapasia Upazila Health Complex	9,892	9,830	6,283	6,299	7,312	6,333	24,784	24,955	8,501	9,293	113,482				
222	Kaptai Upazila Health Complex	1,726	1,968	1,743	1,888	2,800	1,482	5,929	2,966	2,195	2,386	25,083				
223	Karimganj Upazila Health Complex	5,688	5,482	4,475	3,665	5,425	3,737	7,872	4,207	8,472	3,876	52,899				
224	Kashiani Upazila Health Complex	526	447	561	525	762	634	966	859	976	1,007	7,263				
225	Kathalia Upazila Health Complex	602	458	834	404	2,470	2,726	5,344	5,295	3,207	2,505	23,845				
226	Katiadi Upazila Health Complex	12,468	15,825	8,033	6,188	12,430	10,421	18,225	9,810	9,608	9,109	112,117				
227	Kawkhali Upazila Health Complex, Pirojpur	2,828	3,062	3,131	3,105	5,286	2,344	13,973	5,894	5,605	6,711	51,939				
228	Kawkhali Upazila Health Complex, Rangamati	1,165	1,015	1,857	1,639	2,849	2,353	3,916	3,513	1,768	1,559	21,634				

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
229	Kazipur Upazila Health Complex	1,862	2,175	3,420	3,170	7,140	5,729	16,399	12,153	8,698	7,968	68,714				
230	Kendua Upazila Health Complex	370	337	519	484	1,140	998	1,421	1,227	1,153	999	8,648				
231	Keraniganj Upazila Health Complex	7,432	8,016	6,331	6,372	13,369	4,676	24,374	6,606	8,378	5,872	91,426				
232	Keshabpur Upazila Health Complex	5,698	4,612	4,414	3,390	13,861	10,847	12,350	10,206	5,920	5,456	76,754				
233	Khansama Upazila Health Complex	2,763	2,403	4,994	3,934	11,384	7,921	24,948	13,814	8,898	7,407	88,466				
234	Khetlal Upazila Health Complex	4,583	4,375	5,715	3,644	10,953	6,438	16,285	9,579	4,312	3,143	69,027				
235	Khoksha Upazila Health Complex	4,035	3,493	2,766	2,400	4,142	2,603	4,149	2,802	3,871	2,807	33,068				
236	Kishoreganj Upazila Health Complex	1,752	1,373	2,121	1,880	2,086	2,026	2,186	2,196	2,300	2,305	20,225				
237	Kotalipara Upazila Health Complex	4,617	4,055	4,231	4,361	7,112	4,489	12,858	8,552	6,249	5,076	61,600				
238	Kotchandpur Upazila Health Complex	6,743	8,060	3,576	4,071	6,398	3,530	18,546	7,021	8,209	6,627	72,781				
239	Kownia Upazila Health Complex	4,990	4,641	6,570	6,149	6,605	6,538	6,736	6,731	7,036	6,694	62,690				
240	Koyra Upazila Health Complex	1,380	1,225	1,480	1,400	1,396	1,432	1,267	1,394	1,169	1,266	13,409				
241	Kulaura Upazila Health Complex	8,147	8,348	7,220	6,354	9,883	5,580	16,028	8,360	6,303	6,791	83,014				
242	Kuliarchar Upazila Health Complex	1,251	1,336	1,211	1,216	1,228	1,216	1,005	1,066	818	1,213	11,560				
243	Kumarkhali Upazila Health Complex	4,955	5,760	2,959	2,485	5,856	2,626	10,596	4,365	4,800	3,768	48,170				
244	Kutubdia Upazila Health Complex	3,748	4,095	4,027	4,163	4,903	4,162	8,254	6,625	4,233	5,965	50,175				
245	Lakhai Upazila Health Complex	7,707	5,231	6,941	5,277	8,094	6,029	7,303	6,048	4,167	4,918	61,715				
246	Laksham Upazila Health Complex	3,468	3,081	2,368	1,890	2,143	1,813	2,361	2,203	5,327	3,112	27,766				
247	Lakshmichari Upazila Health Complex	11	12	30	31	65	56	83	101	11	14	414				
248	Lalmohan Upazila Health Complex	4,669	4,850	4,021	3,950	4,213	2,230	6,010	2,780	7,426	3,853	44,002				
249	Lalpur Upazila Health Complex	4,338	5,089	3,577	3,742	9,561	4,409	15,669	5,716	7,268	4,611	63,980				
250	Lama Upazila Health Complex	6,131	6,037	4,688	3,277	4,400	2,819	9,912	4,075	3,738	2,274	47,351				
251	Langadu Upazila Health Complex	2,301	2,803	2,459	2,632	3,351	1,874	7,781	4,260	3,202	4,062	34,725				
252	Lohagara Upazila Health Complex, Narail	2,775	1,947	3,322	2,362	4,292	2,935	13,161	6,941	5,386	4,521	47,642				
253	Lohagara Upazila Health Complex, Chittagong	4,935	4,190	5,899	5,635	6,326	5,913	6,191	5,806	6,089	4,992	55,976				
254	Louhajang Upazila Health Complex	3,027	3,837	2,316	3,038	3,290	1,370	7,768	2,689	3,282	2,567	33,184				
255	Madan Upazila Health Complex	948	1,073	901	1,098	961	756	3,149	1,523	1,811	2,084	14,304				
256	Madarganj Upazila Health Complex	2,187	1,892	3,219	2,749	4,198	3,633	4,760	4,063	5,153	4,182	36,036				
257	Madhabpur Upazila Health Complex	4,226	3,970	4,578	3,873	5,446	4,169	4,985	4,305	3,051	3,168	41,771				

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
258	Manda Upazila Health Complex	3,958	2,730	4,840	4,232	10,848	5,935	6,602	11,706	6,880	68,457			
259	Manikchari Upazila Health Complex	828	526	1,459	1,248	2,853	1,269	1,364	68	23	12,565			
260	Manpura Upazila Health Complex	4,115	3,851	5,787	4,552	7,912	4,888	4,759	4,256	3,904	52,584			
261	Mathbaria Upazila Health Complex	1,796	1,917	1,420	1,558	1,540	702	1,641	1,505	2,389	19,133			
262	Matiranga Upazila Health Complex	351	346	600	560	1,070	945	1,179	1,032	1,067	8,355			
263	Matlab (Daxin) Upazila Health Complex	5,023	4,533	4,173	3,705	5,246	2,457	4,470	4,921	4,899	52,225			
264	Matlab (Uttar) Upazila Health Complex	9,673	9,568	9,669	9,755	9,578	9,607	9,453	8,894	9,258	94,781			
265	Meghna Upazila Health Complex	988	872	907	907	915	914	899	731	675	8,687			
266	Mehendiganj Upazila Health Complex	4,902	3,240	6,049	3,412	5,748	3,134	3,384	2,923	1,970	40,288			
267	Melandaha Upazila Health Complex	5,711	6,892	15,143	10,138	12,526	8,421	6,650	10,501	6,142	92,432			
268	Mirarsarai Upazila Health Complex	5,622	5,790	5,608	5,896	6,279	6,021	7,495	3,658	4,204	62,545			
269	Mirpur Upazila Health Complex	3,256	2,847	3,562	2,873	5,338	2,831	5,452	6,658	4,467	51,006			
270	Mirzapur Upazila Health Complex	12,121	259,040	13,010	11,328	15,972	14,364	16,620	10,706	10,053	378,535			
271	Mithamoin Upazila Health Complex	4,376	4,995	6,964	4,835	6,862	5,233	7,117	6,335	6,188	59,015			
272	Mithapukur Upazila Health Complex	4,693	4,195	5,770	3,816	7,583	3,947	4,477	4,784	3,784	52,985			
273	Modhukhali Upazila Health Complex	5,251	5,795	4,254	4,489	6,585	4,016	6,301	9,018	9,053	68,435			
274	Modhupur Upazila Health Complex	5,075	7,268	4,760	4,447	6,819	5,727	7,867	12,268	10,364	76,767			
275	Mohadevpur Upazila Health Complex	4,275	4,291	3,910	4,304	5,275	3,406	6,669	6,927	5,282	63,426			
276	Mohalchari Upazila Health Complex	534	532	1,323	967	2,041	1,322	2,253	689	644	11,946			
277	Mohammadpur Upazila Health Complex	1,846	2,763	1,882	1,393	3,493	1,351	7,858	2,924	2,195	27,520			
278	Mohanganj Upazila Health Complex	2,509	3,024	848	1,080	2,488	4,736	7,736	2,517	3,069	38,142			
279	Mohanpur Upazila Health Complex	7,192	5,953	9,291	8,625	14,060	12,753	14,186	17,099	15,712	120,160			
280	Moheshkhali Upazila Health Complex	5,148	4,443	2,798	2,564	1,732	1,520	3,722	2,205	1,873	41,530			
281	Moheshpur Upazila Health Complex	3,517	4,522	3,193	2,907	5,560	5,019	5,895	7,410	7,554	60,996			
282	Mollahat Upazila Health Complex	4,712	5,637	3,532	2,573	5,019	2,155	2,721	5,562	3,281	47,592			
283	Mongla Upazila Health Complex	3,232	3,709	996	383	3,692	2,320	4,430	5,275	4,146	41,586			
284	Monirampur Upazila Health Complex	5,480	4,221	5,219	4,017	9,777	3,355	4,593	6,011	3,982	62,630			
285	Monohardi Upazila Health Complex	5,784	6,432	5,996	5,687	10,634	4,710	14,835	4,920	4,775	68,393			
286	Monoharganj Upazila Health Complex	1,272	993	1,555	940	3,113	1,747	3,895	912	681	16,920			

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
287	Morrelganj Upazila Health Complex	3,871	3,620	2,548	2,524	850	3,764	2,043	9,582	4,237	4,864	37,903				
288	Mujibnagar Upazila Health Complex	4,185	4,295	4,786	3,283	6,558	3,483	21,707	8,675	10,451	7,314	74,737				
289	Mukshedpur Upazila Health Complex	6,051	5,181	9,707	6,234	11,376	6,322	12,028	6,740	12,803	6,240	82,682				
290	Mukttagacha Upazila Health Complex	10,930	8,495	14,685	4,249	22,389	4,719	23,716	5,959	8,428	3,200	106,770				
291	Muladi Upazila Health Complex	820	1,004	582	639	935	444	1,723	730	790	884	8,551				
292	Muradnagar Upazila Health Complex	5,778	4,044	5,856	3,923	6,245	3,937	13,850	6,157	7,811	4,781	62,382				
293	Nabiganj Upazila Health Complex	3,737	2,858	6,244	4,841	9,044	7,694	11,556	10,320	14,024	12,928	83,246				
294	Nabinagar Upazila Health Complex	5,375	3,911	4,171	3,996	5,947	5,175	7,476	5,068	5,826	6,674	53,619				
295	Nachol Upazila Health Complex	3,126	3,627	3,220	3,891	5,517	3,813	11,299	6,026	3,305	4,018	47,842				
296	Nagarkanda Upazila Health Complex	2,732	1,551	3,193	2,520	4,157	2,273	6,245	2,656	3,436	3,504	32,267				
297	Nagarpur Upazila Health Complex	1,432	1,226	2,902	2,270	5,339	4,123	10,032	6,585	20,474	9,676	64,059				
298	Nageswari Upazila Health Complex	2,486	2,120	4,378	2,914	15,783	12,472	14,898	12,636	10,965	10,375	89,027				
299	Naikhongchari Upazila Health Complex	3,489	4,953	3,603	3,570	3,674	3,447	3,280	3,524	2,589	3,149	35,278				
300	Nakla Upazila Health Complex	3,519	4,987	3,321	3,434	4,771	5,513	12,053	12,360	6,285	6,984	63,227				
301	Nalchithi Upazila Health Complex	1,886	1,076	4,287	3,200	6,682	5,725	7,284	7,257	6,230	6,813	50,440				
302	Nalatabari Upazila Health Complex	2,989	4,082	3,082	3,086	4,972	2,664	13,973	5,664	6,464	6,021	52,997				
303	Nandail Upazila Health Complex	5,496	6,799	7,558	5,686	7,636	5,732	7,685	5,948	7,658	5,903	66,101				
304	Nandigram Upazila Health Complex	2,196	1,508	3,707	2,844	8,604	5,206	10,952	6,352	8,661	5,641	55,671				
305	Nangolkot Upazila Health Complex	2,647	2,671	2,711	2,598	3,463	3,283	2,760	3,158	2,665	2,810	28,766				
306	Naniarchar Upazila Health Complex	1,098	1,250	1,960	1,382	2,331	1,530	2,396	1,714	1,633	1,143	16,437				
307	Naria Upazila Health Complex	3,563	2,806	4,603	3,782	5,252	4,286	5,735	4,663	5,902	4,822	45,414				
308	Nasirnagar Upazila Health Complex	3,215	2,414	5,678	3,375	8,908	5,450	10,863	7,843	4,002	3,687	55,435				
309	Nawabganj DP Upazila Health Complex	3,356	3,641	4,089	4,529	6,499	4,044	17,588	9,559	6,147	8,526	67,978				
310	Nawabganj Upazila Health Complex	7,372	6,139	7,855	6,742	8,393	7,386	8,510	7,728	7,981	7,260	75,366				
311	Nazirpur Upazila Health Complex	2,165	2,297	2,029	2,022	3,580	1,629	7,867	3,025	3,658	3,980	32,252				
312	Nesarabad Upazila Health Complex	3,056	2,918	2,881	3,526	4,487	2,184	15,495	3,973	7,190	6,489	52,199				
313	Niamatpur Upazila Health Complex	2,152	2,436	1,973	2,185	4,152	2,483	10,253	4,345	4,587	3,929	38,495				
314	Nikli Upazila Health Complex	1,010	972	918	890	1,465	1,081	2,514	1,659	1,301	1,363	13,173				
315	Paba Upazila Health Complex	7,394	7,011	8,132	7,475	20,183	8,711	20,385	8,769	17,223	8,049	113,332				

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
316	Paikgacha Upazila Health Complex	2,450	1,949	1,267	1,042	4,151	1,488	5,826	2,415	5,465	2,225	28,278		
317	Pakundia Upazila Health Complex	6,103	5,249	7,978	6,715	7,749	6,024	10,280	8,033	8,369	6,986	73,486		
318	Palash Upazila Health Complex	3,177	3,946	2,814	1,622	3,136	1,841	18,811	5,698	5,920	2,369	49,334		
319	Palashbari Upazila Health Complex	2,873	2,976	4,709	5,523	7,897	5,303	16,067	6,035	9,642	4,410	65,435		
320	Panchari Upazila Health Complex	2,488	2,454	1,773	1,700	3,252	821	6,656	1,867	2,503	1,759	25,273		
321	Panchbibi Upazila Health Complex	1,648	2,292	3,295	2,153	4,069	2,590	13,730	5,747	4,338	4,453	44,315		
322	Pangsha Upazila Health Complex	3,103	4,156	3,009	3,176	6,285	3,379	12,091	5,472	3,950	4,091	48,712		
323	Parbatipur Upazila Health Complex	4,119	4,055	3,923	4,051	3,748	3,556	3,438	3,765	3,427	3,556	37,638		
324	Parsuram Upazila Health Complex	9,688	6,670	8,911	6,494	6,398	4,961	7,488	4,609	4,570	3,711	63,500		
325	Patgram Upazila Health Complex	2,115	1,668	3,002	3,271	4,612	3,648	5,489	4,577	4,466	3,821	36,669		
326	Patharghata Upazila Health Complex	1,324	1,348	1,532	1,414	1,878	1,427	3,917	2,044	1,958	2,410	19,252		
327	Patiya Upazila Health Complex	1,821	1,667	1,907	1,700	1,950	1,761	1,934	1,880	1,734	1,629	17,983		
328	Patnitala Upazila Health Complex	3,119	2,983	3,444	3,129	5,750	2,559	16,994	6,940	5,092	4,135	54,145		
329	Pekua Upazila Health Complex	1,729	1,611	2,088	1,341	2,554	1,206	3,093	1,140	527	358	15,647		
330	Pirgacha Upazila Health Complex	1,407	1,334	2,822	2,713	9,766	6,027	8,422	4,965	2,615	1,414	41,485		
331	Pirganj RP Upazila Health Complex	6,347	6,009	6,808	6,651	6,689	6,702	6,771	6,744	6,259	6,415	65,395		
332	Pirganj TG Upazila Health Complex	1,792	1,288	3,519	1,937	4,210	1,413	10,507	4,376	5,481	2,322	36,845		
333	Porsha Upazila Health Complex	4,680	4,140	4,049	3,719	4,871	2,957	13,007	6,151	2,719	1,700	47,993		
334	Purbadhala Upazila Health Complex	1,510	1,431	1,961	1,326	2,603	1,762	3,207	2,070	1,440	1,671	18,981		
335	Puthia Upazila Health Complex	4,809	3,523	7,357	5,976	14,999	11,629	14,749	11,336	12,173	9,706	96,257		
336	Raiganj Upazila Health Complex	0	0	6,472	4,833	9,367	7,335	9,591	8,090	3,933	3,702	53,323		
337	Raipur Upazila Health Complex	11,339	6,366	11,082	5,828	12,889	6,533	15,051	5,902	12,022	5,097	92,109		
338	Raipura Upazila Health Complex	5,332	5,339	3,848	4,641	3,429	3,531	3,407	3,450	2,142	3,328	38,447		
339	Rajapur Upazila Health Complex	3,675	3,172	4,686	4,322	4,723	4,499	4,721	4,786	3,798	4,214	42,596		
340	Rajarhat Upazila Health Complex	2,519	2,413	2,962	2,721	3,142	3,102	2,946	3,046	2,584	2,809	28,244		
341	Rajasthali Upazila Health Complex	961	1,079	1,236	1,310	1,486	1,045	2,991	2,089	788	1,052	14,037		
342	Rajibpur Upazila Health Complex	1,522	1,146	3,437	2,546	4,136	4,459	7,301	5,199	5,263	4,991	40,000		
343	Rajnagar Upazila Health Complex	5,091	4,580	6,702	6,091	13,280	8,353	15,605	9,471	8,722	4,931	82,826		
344	Rajoit Upazila Health Complex	2,692	1,454	4,461	1,114	8,685	3,210	10,294	3,654	1,887	1,128	38,579		

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
345	Ramganj Upazila Health Complex	4,290	4,233	4,453	4,213	10,912	5,542	12,579	6,462	8,392	5,365	66,441				
346	Ramgarh Upazila Health Complex	109	82	87	74	105	77	198	126	143	91	1,092				
347	Ramgati Upazila Health Complex	4,303	4,211	5,398	4,519	5,989	5,548	6,999	6,139	5,669	5,647	54,422				
348	Rampal Upazila Health Complex	2,972	3,057	1,844	1,445	5,796	1,840	14,415	2,610	4,798	6,033	44,810				
349	Ramu Upazila Health Complex	13,708	8,463	9,836	5,724	7,564	4,037	6,391	3,386	4,616	2,372	66,097				
350	Rangunia Upazila Health Complex	3,142	2,393	3,158	3,131	3,370	3,303.50	2,968	3,018	2,629	2,682	29,794.50				
351	Raninagar Upazila Health Complex	6,561	4,845	3,981	2,606	7,315	2,838	19,462	9,118	5,332	2,656	64,714				
352	Ranisankhail Upazila Health Complex	1,344	1,087	2,372	2,226	4,476	2,762	5,163	3,443	2,789	2,296	27,958				
353	Rowangchari Upazila Health Complex	493	689	741	1,112	674	636	1,957	1,804	646	901	9,653				
354	Rowmari Upazila Health Complex	6,135	5,716	7,093	6,551	7,734	7,673	9,163	8,635	7,299	8,739	74,738				
355	Ruma Upazila Health Complex	740	830	1,099	1,180	939	988	2,176	2,235	971	1,182	12,340				
356	Rupganj Upazila Health Complex	5,702	4,539	6,688	5,296	17,794	6,441	22,264	9,027	8,775	5,283	91,809				
357	Rupsha Upazila Health Complex	2,116	2,705	2,024	3,512	3,824	3,121	9,972	4,709	5,550	5,128	42,661				
358	Sadarpur Upazila Health Complex	3,293	1,276	3,582	1,645	3,849	1,355	8,122	3,025	2,369	1,003	29,519				
359	Sadullapur Upazila Health Complex	2,210	2,243	2,407	2,048	3,710	2,703	13,999	11,813	3,119	2,640	46,892				
360	Saharasthi Upazila Health Complex	2,946	3,303	2,327	2,649	5,383	1,507	9,264	2,807	3,911	3,258	37,355				
361	Saidpur Upazila Health Complex	23	17	30	35	64	70	191	99	56	55	640				
362	Sakhipur Upazila Health Complex	6,227	5,799	2,968	3,107	4,593	2,149	11,368	4,008	3,986	4,049	48,254				
363	Sandwip Upazila Health Complex	23	17	71	53	136	93	176	94	33	20	716				
364	Santhia Upazila Health Complex	5,576	7,943	4,833	4,577	7,500	4,022	19,126	5,869	7,252	7,291	73,989				
365	Sapahar Upazila Health Complex	2,326	2,178	3,413	2,420	4,936	3,649	9,474	7,014	3,206	2,863	41,479				
366	Sarail Upazila Health Complex	725	695	3,513	2,990	7,276	5,534	10,191	9,352	5,435	5,188	50,899				
367	Sarankhola Upazila Health Complex	2,474	2,386	2,594	2,199	3,821	3,946	3,223	3,354	2,763	3,170	29,930				
368	Sariakandi Upazila Health Complex	5,933	4,679	3,937	2,542	7,013	4,286	9,438	6,824	12,678	7,963	65,293				
369	Sarishabari Upazila Health Complex	2,587	2,425	3,984	3,215	6,454	4,618	7,355	5,263	3,447	3,031	42,379				
370	Sarsa Upazila Health Complex	6,836	6,886	4,766	3,925	7,716	4,163	28,077	6,842	7,691	6,613	83,515				
371	Satkania Upazila Health Complex	2,537	2,226	3,287	3,141	3,480	3,357	3,325	3,493	689	731	26,266				
372	Saturia Upazila Health Complex	3,895	4,880	2,519	2,211	3,719	2,918	14,329	5,761	11,737	8,478	60,447				
373	Savar Upazila Health Complex	3,833	2,601	5,678	4,071	8,468	6,241	14,813	10,157	3,238	2,339	61,439				

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
374	Senbag Upazila Health Complex	3,026	3,048	2,960	3,667	6,160	3,679	5,936	3,661	5,614	3,578	41,329		
375	Serajikhon Upazila Health Complex	8,335	7,077	6,751	5,511	9,359	4,322	22,515	7,391	10,791	5,756	87,808		
376	Shaghata Upazila Health Complex	6,068	5,502	7,859	7,355	8,255	8,106	7,967	8,055	7,471	7,691	74,329		
377	Shahzadpur Upazila Health Complex	2,400	1,329	4,424	1,918	10,567	6,656	15,829	8,462	2,516	2,921	57,022		
378	Shailkupa Upazila Health Complex	6,586	5,585	6,074	3,704	7,460	4,359	9,133	5,103	8,539	5,149	61,692		
379	Shajahanpur Upazila Health Complex	2,598	2,265	5,202	1,907	8,361	3,143	17,527	4,648	7,700	2,902	56,253		
380	Shailkha Upazila Health Complex	2,766	2,800	2,665	1,492	4,028	2,198	5,253	3,319	4,445	2,913	31,879		
381	Sherpur Upazila Health Complex	4,030	3,907	5,856	4,529	15,495	15,900	18,004	16,046	23,894	17,631	125,292		
382	Shibalaya Upazila Health Complex	4,400	3,400	8,073	3,178	8,691	3,526	8,518	3,389	6,433	2,650	52,258		
383	Shibchar Upazila Health Complex	5,098	4,552	3,343	2,809	5,357	3,110	7,179	5,306	5,543	6,104	48,401		
384	Shibganj Bogra Upazila Health Complex	2,316	1,813	3,265	2,598	8,286	3,619	9,918	4,423	11,451	5,355	53,044		
385	Shibganj NG Upazila Health Complex	11,405	10,732	1,984	3,726	5,100	4,105	12,718	7,404	5,709	5,696	68,579		
386	Shibpur Upazila Health Complex	4,637	3,961	3,311	3,078	7,203	2,766	17,974	4,379	5,862	5,918	59,089		
387	Shyamnagar Upazila Health Complex	6,054	5,933	5,485	5,332	5,016	4,692	3,904	4,006	3,504	3,589	47,515		
388	Singair Upazila Health Complex	4,382	3,822	3,957	3,030	6,260	3,829	9,878	5,210	6,313	4,811	51,492		
389	Singra Upazila Health Complex	4,253	4,227	4,188	3,234	6,509	4,480	20,702	8,630	7,882	6,841	70,946		
390	Sitakunda Upazila Health Complex	8,599	5,843	9,105	6,292	9,417	6,745	9,938	6,965	10,464	7,100	80,468		
391	Sonagazi Upazila Health Complex	7,990	7,188	7,206	5,570	9,134	6,550	9,427	6,686	3,632	4,341	67,724		
392	Sonargaon Upazila Health Complex	2,256	2,144	4,531	3,356	8,321	5,542	16,679	7,773	3,418	3,897	57,917		
393	Sonatala Upazila Health Complex	2,953	2,944	2,677	2,690	6,390	4,017	7,350	4,634	9,703	6,156	49,514		
394	Sreemangal Upazila Health Complex	2,742	2,151	4,711	3,748	6,982	5,520	11,189	9,505	10,346	8,919	65,813		
395	Sreenagar Upazila Health Complex	846	938	844	964	1,074	1,364	1,129	1,648	775	1,299	10,881		
396	Sreepur MG Upazila Health Complex	2,516	2,531	2,192	2,033	3,307	2,156	12,164	5,180	4,322	4,338	40,739		
397	Sreepur Upazila Health Complex	9,502	10,014	4,343	4,476	10,667	4,416	20,912	8,752	6,608	5,682	85,372		
398	Sribordi Upazila Health Complex	924	746	920	1,078	1,652	1,462	2,415	2,113	2,289	1,591	15,190		
399	Subarnachar Upazila Health Complex	1,283	1,333	2,671	2,650	4,508	2,325	5,457	2,476	716	511	23,930		
400	Sujanagar Upazila Health Complex	4,140	3,478	1,331	725	3,232	1,658	11,727	4,641	2,665	1,868	35,465		
401	Sulla Upazila Health Complex	2,094	2,209	2,282	2,244	2,059	2,110	2,476	2,654	1,838	1,926	21,892		
402	Sundarganj Upazila Health Complex	744	736	836	758	867	821	768	799	641	725	7,695		

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
403	Taherpur Upazila Health Complex	1,167	1,640	3,567	4,069	7,341	7,874	13,434	14,104	11,261	11,901	76,358				
404	Tajumuddin Upazila Health Complex	5,300	3,496	9,572	7,432	13,513	11,586	17,442	15,187	2,382	2,565	88,475				
405	Tala Upazila Health Complex	487	501	325	489	589	922	1,182	1,462	861	819	7,637				
406	Tanore Upazila Health Complex	3,375	2,820	6,448	5,445	9,351	7,809	20,276	11,944	3,444	3,682	74,594				
407	Taraganj Upazila Health Complex	3,777	3,400	4,590	4,233	7,865.70	6,248	11,958	9,869	10,121	9,822	71,883.70				
408	Tarail Upazila Health Complex	5,197	4,659	3,613	3,630	4,308	4,652	5,357	5,252	5,031	4,610	46,309				
409	Tarash Upazila Health Complex	8,061	7,186	3,738	2,387	7,372	4,510	19,724	12,221	4,067	2,158	71,424				
410	Teknaf Upazila Health Complex	6,343	6,392	5,762	5,503	7,299	4,711	8,696	4,846	8,108	4,877	62,537				
411	Terakhada Upazila Health Complex	0	0	5,258	2,570	5,104	2,873	16,451	9,864	6,391	4,490	53,001				
412	Tetulia Upazila Health Complex	4,353	3,976	2,390	3,519	5,650	2,998	8,065	7,054	3,813	6,677	48,495				
413	Thanchi Upazila Health Complex	268	201	217	223	357	85	986	690	446	427	3,900				
414	Titas Upazila Health Complex	3,771	2,965	5,313	4,269	8,038	5,598	9,589	6,336	5,723	4,579	56,181				
415	Trisal Upazila Health Complex	9,589	8,269	10,741	10,704	10,965	10,621	10,027	10,163	6,818	7,902	95,799				
416	Tungibari Upazila Health Complex	1,296	1,526	1,120	1,151	1,975	991	4,571	2,146	1,596	1,940	18,312				
417	Tungipara Upazila Health Complex	5,998	6,200	5,434	4,976	8,024	5,959	10,874	8,015	6,487	7,869	69,836				
418	Ukhyia Upazila Health Complex	11,176	6,083	12,829	11,746	18,570	9,431	15,396	9,001	2,684	1,674	98,590				
419	Ulipur Upazila Health Complex	3,142	2,492	4,241	3,724	5,800	4,932	8,946	7,567	4,906	5,944	51,694				
420	Ullapara Upazila Health Complex	4,214	3,681	3,386	2,868	4,161	3,368	17,232	6,999	7,904	4,556	58,369				
421	Wazirpur Upazila Health Complex	2,207	2,174	1,957	1,838	3,535	2,347	3,627	2,493	3,041	2,637	25,856				
422	Zanjira Upazila Health Complex	8,693	8,182	5,578	3,679	8,146	4,293	18,021	4,810	7,047	3,639	72,088				
423	Zianagar Upazila Health Complex	119	87	235	180	314	226	346	266	252	222	2,247				
424	Zakiganj Upazila Health Complex	3,357	4,015	5,311	4,755	6,719	2,442	12,763	4,759	4,640	5,084	53,845				
425	Basail UHC, Basail	7,170	6,096	9,245	7,873	11,848	10,048	14,550	12,334	12,693	10,833	102,690				
426	Goshairhat UHC	3,572	2,322	3,634	2,188	3,119	1,917	7,618	4,036	4,081	2,644	35,131				
427	100-bed Hospital, Saidpur, Nilphamari	7,297	5,317	8,354	5,569	12,853	8,033	11,219	7,414	10,497	7,107	83,660				
428	B. Baria District Hospital, B. Baria	24,881	23,297	26,070	30,777	27,368	42,561	28,514	45,644	28,023	44,183	321,318				
429	Bagerhat District Hospital, Bagerhat	8,941	11,378	5,290	6,714	17,649	10,027	30,233	12,521	15,381	11,370	129,504				
430	Bandarban District Hospital, Bandarban	5,484	5,946	4,812	6,436	8,538	6,306	17,313	9,339	5,239	6,075	75,488				
431	Barguna District Hospital, Barguna	4,845	3,577	6,907	4,841	9,699	7,027	12,306	9,028	8,370	5,931	72,531				

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
432	Barisal District Hospital, Barisal	1,456	829	1,491	825	1,758	895	2,579	1,293	1,112	709	12,947				
433	Bhola District Hospital, Bhola	10,201	8,368	5,717	5,788	9,059	7,257	24,840	11,180	15,974	10,012	108,396				
434	Chandpur District Hospital, Chandpur	7,175	4,877	10,882	6,962	9,492	10,192	13,968	14,547	6,618	6,973	91,686				
435	Chuadanga District Hospital, Chuadanga	12,844	18,046	12,184	12,076	12,289	20,836	12,128	24,047	19,390	17,025	160,865				
436	Comilla District Hospital, Comilla	7,145	6,860	8,237	7,236	13,073	8,752	13,865	9,238	13,353	8,679	96,438				
437	Cox's Bazar District Hospital, Cox's Bazar	23,258	21,198	21,981	17,910	30,650	20,479	39,281	20,143	15,705	10,669	221,274				
438	Dinajpur District Hospital, Dinajpur	10,893	9,241	14,631	13,270	20,072	14,471	14,802	14,879	13,263	13,995	139,517				
439	Feni District Hospital, Feni	6,937	7,327	7,113	6,767	7,806	7,209	8,158	7,628	7,040	6,599	72,584				
440	Gaibandha District Hospital, Gaibandha	15,275	13,910	12,803	11,632	9,899	9,298	19,956	16,306	7,981	7,319	124,379				
441	Gazipur District Hospital, Gazipur	11,346	10,291	13,544	14,023	12,881	15,078	29,081	34,895	5,741	6,880	153,760				
442	Gopalganj District Hospital, Gopalganj	15,552	13,914	16,546	17,110	17,337	17,275	17,981	17,596	18,553	18,796	170,660				
443	Habiganj District Hospital, Hobiganj	13,474	15,454	2,786	2,706	47,338	16,249	43,851	16,465	26,989	15,272	200,584				
444	Jamalpur District Hospital, Jamalpur	5,658	5,203	11,507	9,771	14,620	13,214	69,995	51,092	20,406	16,621	218,087				
445	Jessore District Hospital, Jessore	11,143	12,869	18,950	16,671	46,778	25,873	99,786	45,643	55,741	45,935	379,389				
446	Jhalokati District Hospital, Jhalokati	8,356	9,520	7,308	6,897	13,427	5,365	22,860	9,794	12,692	11,407	107,626				
447	Jhenaidah District Hospital, Jhenaidah	13,320	16,240	9,145	10,012	44,073	19,634	56,246	32,993	32,348	15,689	249,700				
448	Joypurhat District Hospital, Joypurhat	15,482	13,488	13,158	12,357	25,567	13,964	40,803	25,662	21,776	20,055	202,312				
449	Khagrachari District Hospital, Khagrachari	5,614	4,268	6,584	4,759	8,159	5,747	22,092	13,930	3,846	3,436	78,435				
450	Khulna District Hospital, Khulna	2,910	5,536	5,600	7,772	17,984	6,940	47,640	15,104	18,299	14,612	142,397				
451	Kishoreganj District Hospital, Kishoreganj	10,672	12,480	11,013	10,595	10,452	10,826	10,472	10,501	11,857	10,954	109,822				
452	Kurigram District Hospital, Kurigram	16,711	21,332	10,612	11,558	16,847	14,591	32,848	16,108	13,977	11,957	166,541				
453	Kushtia District Hospital, Kushtia	19,121	17,323	17,049	17,105	47,844	43,292	49,126	46,666	42,156	39,270	338,952				
454	Lakshmipur District Hospital	10,149	8,810	14,075	11,791	24,200	10,119	27,054	12,256	30,188	15,680	164,322				
455	Lalmonirhat District Hospital, Lalmonirhat	10,548	7,490	9,583	7,878	12,004	8,681	24,160	14,727	14,580	10,263	119,914				
456	M. Bazar District Hospital, M. Bazar	16,500	14,322	20,881	17,515	22,210	16,953	32,326	25,537	21,114	20,359	207,717				
457	Madaripur District Hospital, Madaripur	4,685	3,541	7,318	6,264	5,523	3,249	7,115	4,073	8,360	4,409	54,537				
458	Magura District Hospital, Magura	15,323	13,597	17,422	14,954	18,528	16,879	20,649	19,500	16,309	15,062	168,223				
459	Manikganj District Hospital, Manikganj	3,560	3,279	5,335	5,138	10,161	8,231	10,436	8,416	5,630	4,705	64,891				
460	Meherpur District Hospital, Meherpur	7,359	6,466	8,759	8,092	10,765	9,710	13,388	11,380	12,167	10,970	99,056				

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
461	Mohammad Ali District Hospital, Bogra	17,313	16,002	26,609	23,171	37,329	26,358	48,095	36,645	40,824	34,358	306,704		
462	Munshiganj District Hospital, Munshiganj	12,936	13,934	12,505	13,254	21,512	17,330	20,261	17,411	19,020	16,005	164,168		
463	Nababganj District Hospital, Nababganj	14,951	16,716	15,986	14,005	19,105	21,229	16,720	14,919	16,146	14,361	164,138		
464	Naoagaon District Hospital, Naoagaon	10,384	8,284	15,067	11,582	32,170	23,413	34,276	27,642	30,576	25,840	219,234		
465	Narayanganj General (Victoria) Hospital (100-bed)	13,998	15,464	13,956	14,700	13,632	15,025	13,302	14,442	10,831	11,345	136,695		
466	Narayanganj 300-bed Hospital	15,855	14,387	18,751	16,820	35,108	26,033	56,856	37,329	32,871	26,420	280,430		
467	Narail District Hospital, Narail	6,310	5,390	5,447	4,822	8,544	3,207	22,533	9,112	9,360	8,941	83,666		
468	Narsingdi District Hospital, Narsingdi	14,869	13,994	14,620	15,458	14,494	12,776	14,543	13,041	13,431	13,466	140,692		
469	Narsingdi (100-bed) Zila Hospital, Narsingdi	12,493	12,097	12,284	12,049	22,471	17,194	27,867	19,511	17,393	13,970	167,329		
470	Natore District Hospital, Natore	16,243	15,128	15,776	15,892	20,435	20,477	20,454	20,498	20,348	20,860	186,111		
471	Netrakona District Hospital, Netrakona	9,734	7,759	9,958	7,801	8,793	7,144	8,174	6,828	8,419	6,979	81,589		
472	Nilphamari District Hospital, Nilphamari	8,773	8,355	5,849	4,643	10,862	9,533	22,442	11,375	6,494	7,149	95,475		
473	Noakhali District Hospital, Noakhali	928	987	1,897	1,281	2,201	2,680	6,899	4,555	2,522	2,756	26,706		
474	Pabna District Hospital, Pabna	11,105	11,234	13,393	12,281	13,660	22,863	15,819	30,488	12,446	26,536	169,825		
475	Panchagarh District Hospital, Panchagarh	9,340	8,807	8,907	8,526	17,720	13,636	21,766	17,117	9,055	10,581	125,455		
476	Patuakhali District Hospital, Patuakhali	3,050	3,062	3,786	4,222	6,280	5,253	15,359	6,751	6,202	5,789	59,754		
477	Pirojpur District Hospital, Pirojpur	8,933	13,337	8,402	10,758	13,046	6,518	28,786	11,263	9,805	9,702	120,550		
478	Rajbari District Hospital, Rajbari	3,353	2,698	4,653	3,739	15,311	12,907	21,624	18,787	26,895	21,907	131,874		
479	Rangamati District Hospital, Rangamati	3,374	3,857	3,056	3,834	6,467	3,935	10,514	7,065	3,050	3,695	48,847		
480	Satkhira District Hospital, Satkhira	6,771	7,017	8,413	8,501	13,257	9,484	35,479	31,484	27,692	21,669	169,767		
481	Shahid Shamsuddin District Hospital, Sylhet	3,556	4,148	7,324	7,934	11,063	5,348	34,132	13,990	11,976	12,017	111,488		
482	Shariatpur District Hospital, Shariatpur	7,484	6,745	12,885	11,925	14,836	13,860	15,442	14,543	12,639	12,535	122,894		
483	Sherpur District Hospital, Sherpur	9,106	7,587	6,953	5,956	15,535	13,313	35,399	31,585	26,668	23,856	175,958		
484	Sunamganj District Hospital, Sunamganj	13,871	12,887	6,272	6,200	5,014	4,465	6,547	5,956	8,998	7,561	77,771		
485	Tangail District Hospital, Tangail	17,595	23,124	14,849	14,571	37,110	25,469	53,014	38,098	30,976	27,374	282,180		
486	Thakurgaon District Hospital, Thakurgaon	5,619	4,722	6,798	5,459	13,147	8,134	16,964	10,801	9,643	5,864	87,151		
487	Chittagong General Hospital, Chittagong	8,278	7,718	13,396	9,951	25,233	23,975	49,131	26,939	20,580	22,259	207,460		
488	Faridpur General Hospital, Faridpur	23,583	2,377	3,632	22,336	14,512	25,385	24,940	28,621	22,613	26,014	194,013		
489	Sirajganj General Hospital	725	635	11,477	8,486	18,890	15,173	26,612	22,300	34,752	29,602	168,652		

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Total		
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
490	Kurmitola General Hospital (500-bed)	13,390	13,417	120,692	38,379	87,602	77,947	131,275	99,334	44,174	37,003	663,213		
491	Mugda 500-bedded General Hospital	15,398	14,270	17,963	16,088	30,500	26,563	73,137	51,057	25,222	24,762	294,960		
492	Chittagong Medical College Hospital, Chittagong	28,460	28,758	86,126	86,473	50,355	50,545	48,152	48,343	37,754	37,959	502,925		
493	Comilla Medical College Hospital, Comilla	9,573	12,696	14,746	15,325	35,310	25,222	47,342	34,464	14,809	13,862	223,349		
494	Dhaka Medical College Hospital, Dhaka	22,424	27,195	34,430	37,840	76,110	70,892	200,204	213,166	55,823	69,747	807,831		
495	Faridpur Medical College Hospital, Faridpur	7,107	5,757	7,844	5,413	9,019	8,524	21,698	15,502	22,638	28,850	132,352		
496	Khulna Medical College Hospital, Khulna	10,538	9,980	19,987	15,232	32,802	24,292	54,596	31,689	26,830	21,115	247,061		
497	M Abdur Rahim Medical College Hospital, Dinaipur	18,499	17,936	16,940	16,522	15,946	15,462	21,091	20,402	20,390	19,791	182,979		
498	MAG Osmani Medical College Hospital, Sylhet	38,090	41,071	54,517	50,160	108,830	82,695	178,761	129,076	106,217	91,407	880,824		
499	Mymensingh Medical College Hospital, Mymensingh	34,023	28,356	51,449	51,145	95,810	73,977	103,260	86,968	99,925	87,342	712,255		
500	Rajshahi Medical College Hospital, Rajshahi	37,392	30,499	56,541	44,384	84,209	64,496	101,897	84,426	66,829	57,581	628,254		
501	Rangpur Medical College Hospital, Rangpur	8,901	9,099	11,596	12,113	13,225	12,746	14,499	13,999	9,374	9,261	114,813		
502	Shaheed Suhrawardy Medical College Hospital, Dhaka	18,239	16,827	78,723	24,394	78,705	76,749	79,128	79,288	79,881	80,226	612,160		
503	Shahid Ziaur Rahman Medical College Hospital, Bogra	9,169	5,070	22,292	14,958	44,546	30,961	76,404	67,966	46,089	48,111	365,566		
504	Sir Salimullah Medical College Hospital, Mitford, Dhaka	41,735	43,239	33,948	31,764	59,587	40,398	142,617	98,170	62,202	52,318	605,978		
505	Infectious Diseases Hospital, Dhaka					9						9		
506	National Institute of Cardiovascular Diseases, Dhaka	2,389	2,959	2,962	3,753	4,042	4,765	25,929	35,295	20,315	38,938	141,347		
507	National Institute of Diseases of the Chest and Hospital, Dhaka	746	1,051	3,241	4,896	5,068	8,665	11,941	17,385	16,174	22,013	91,180		
508	National Institute of Kidney Diseases & Urology, Dhaka	700	844	1,502	2,647	10,314	16,554	16,382	26,842	11,689	19,628	107,102		
509	National Institute of Mental Health and Research, Dhaka	0	0	2,764	3,301	7,797	9,511	8,431	10,455	2,185	2,678	47,122		
510	National Institute of Neurosciences (NINS)	5,667	5,713	8,279	8,047	21,905	21,862	44,443	45,382	29,299	35,804	226,401		
511	National Institute of Traumatology and Orthopaedic Rehabilitation, Dhaka (NIOTOR)	515	647	758	1,845	1,267	3,073	6,417	10,567	3,347	4,027	32,463		
512	National Centre for Control of Rheumatic Fever and Heart Disease	192	68	4,293	3,260	6,819	3,027	2,764	1,298	314	225	22,260		
513	Pabna Mental Hospital, Pabna	76	96	938	1,195	2,730	4,274	11,957	11,278	5,764	3,608	41,916		
514	Bangladesh Institute of Tropical and Infectious Diseases, Faujdharhat	1,452	1,527	1,827	2,033	3,143	2,537	7,645	4,650	2,520	2,421	29,755		
	Total	2,624,786	2,748,382	3,106,700	2,624,110	4,666,641	3,384,865	7,372,927	4,897,638	4,148,699	3,625,561	39,200,310		

2. List of public hospitals with the number of services provided at emergency department in 2016 distributed among patients of different age groups

Sl. no.	Name of facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Total		
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
1	Kaptai 10 Bed Hospital, Rangamati	2	1	1	2	3	4	4	4	1	2	3	23	
2	Bibirhat 20 Beded Hospital, Fatikchhari, Chittagong	173	156	213	288	261	348	337	469	190	214	214	2,649	
3	Kaitak 20 Beded Hospital, Chhatak, Sunamganj	70	79	56	74	111	108	187	169	121	102	102	1,077	
4	Kuakata 20 Beded Hospital, Kalapara, Patuakhali	19	40	55	103	57	140	104	283	31	90	90	922	
5	Ullapara 20 Beded Hospital, Ullapara, Sirajganj	821	533	1,046	944	938	1,090	900	870	920	885	885	8,947	
6	Godagari 31 beded Hospital, Rajshahi	84	138	86	262	166	342	566	886	156	324	324	3,010	
7	Haragacha 31 bed Hospital, Rangpur	17	8	73	39	217	145	376	395	267	335	335	1,872	
8	Tongi 50bed Hospital, Gazipur	1,009	1,271	1,126	1,781	3,761	5,975	6,121	11,110	1,297	2,674	2,674	36,125	
9	Abhoynagar Upazila Health Complex	1,760	2,020	1,462	2,066	1,645	1,700	3,127	3,593	1,161	1,630	1,630	20,164	
10	Adamdighi Upazila Health Complex	365	518	334	560	716	713	1,841	1,786	845	1,130	1,130	8,808	
11	Aditmari Upazila Health Complex	71	66	326	218	385	411	438	426	197	192	192	2,730	
12	Agailjhara Upazila Health Complex, Barisal	315	488	265	248	442	399	719	579	590	607	607	4,652	
13	Akhaura Upazila Health Complex	647	801	532	726	529	615	473	598	342	484	484	5,747	
14	Akkelpur Upazila Health Complex	234	216	274	285	289	295	301	334	251	237	237	2,716	
15	Alamdanga Upazila Health Complex	168	172	249	343	450	576	809	1,026	572	806	806	5,171	
16	Alfadanga Upazila Health Complex	159	176	187	197	370	275	514	413	255	344	344	2,890	
17	Alikadam Upazila Health Complex	253	296	310	287	467	379	718	538	184	174	174	3,606	
18	Amtai Upazila Health Complex	379	494	441	357	1,055	985	1,035	1,189	400	556	556	6,891	
19	Anwara Upazila Health Complex	2,631	3,324	2,299	2,880	3,170	3,419	3,872	4,423	2,218	2,612	2,612	30,848	
20	Araihazar Upazila Health Complex	62	130	387	554	595	759	1,229	1,765	544	773	773	6,798	
21	Assasuni Upazila Health Complex	174	196	202	175	327	227	542	408	465	495	495	3,211	
22	Aighoria Upazila Health Complex	474	585	537	689	794	849	1,504	1,513	1,234	1,292	1,292	9,471	
23	Atpara Upazila Health Complex	906	800	2,212	1,996	2,608	2,238	2,707	2,756	2,779	2,922	2,922	21,924	
24	Atrai Upazila Health Complex	38	43	106	218	72	86	383	441	219	237	237	1,843	
25	Atwari Upazila Health Complex	179	197	341	860	240	833	721	1,547	246	522	522	5,686	
26	Austagram Upazila Health Complex	582	678	1,261	1,066	1,527	1,518	2,264	2,298	859	1,023	1,023	13,076	

Sl. no.	Name of facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
27	Azmiriganj Upazila Health Complex	66	109	105	176	348	422	422	564	668	196	294	2,948	
28	Babuganj Upazila Health Complex, Barisal	23	57	28	56	59	76	76	139	141	75	119	773	
29	Badalgachi Upazila Health Complex	289	379	247	383	706	512	512	1,245	1,435	911	1,071	7,178	
30	Badarganj Upazila Health Complex	405	132	363	299	380	300	300	428	391	442	419	3,559	
31	Bagatipara Upazila Health Complex	153	205	198	347	470	436	436	1,142	1,059	614	803	5,427	
32	Bagerpara Upazila Health Complex	527	718	412	601	509	501	501	981	1,113	362	583	6,307	
33	Bagha Upazila Health Complex	48	60	70	94	218	308	308	460	692	243	408	2,601	
34	Baghaichari Upazila Health Complex	7	1	43	31	82	84	84	60	82	18	50	458	
35	Bagmara Upazila Health Complex	0	0	26	2	48	42	42	45	54	7	29	253	
36	Bahubal Upazila Health Complex	150	311	261	586	412	666	666	887	1,269	320	489	5,351	
37	Bajitpur Upazila Health Complex	353	507	531	1,318	500	1,037	1,037	783	1,398	369	707	7,503	
38	Bakerganj Upazila Health Complex, Barisal	314	317	286	342	362	466	466	487	554	94	236	3,458	
39	Bakshiganj Upazila Health Complex	1,073	1,191	1,436	1,366	2,018	1,800	1,800	2,259	2,178	1,395	1,917	16,633	
40	Balaganj Upazila Health Complex	299	196	673	480	1,413	1,240	1,240	1,659	1,899	1,035	1,369	10,263	
41	Baliadangi Upazila Health Complex	4	0	204	100	16	54	54	37	27	0	16	458	
42	Baliakandi Upazila Health Complex	187	248	158	159	658	308	308	945	685	379	527	4,254	
43	Bamna Upazila Health Complex	3	6	5	14	22	33	33	110	176	54	113	536	
44	Banaripara Upazila Health Complex	453	642	304	304	1,304	493	493	1,671	944	615	663	7,393	
45	Bancharampur Upazila Health Complex	404	422	458	412	609	507	507	794	657	543	614	5,420	
46	Bandar Upazila Health Complex	258	288	378	621	555	695	695	1,051	1,372	397	522	6,137	
47	Baniachong Upazila Health Complex	859	1,008	781	836	1,457	1,685	1,685	1,401	1,651	759	897	11,334	
48	Banshkhali Upazila Health Complex	2,278	2,885	1,203	1,817	1,879	1,803	1,803	3,190	3,174	1,511	1,944	21,684	
49	Baraigram Upazila Health Complex	31	46	37	89	90	26	26	1,649	1,870	94	197	4,129	
50	Barhatta Upazila Health Complex	263	248	684	626	871	820	820	797	970	267	309	5,855	
51	Barkol Upazila Health Complex	6	7	34	41	36	51	51	36	66	13	14	304	
52	Barlekha Upazila Health Complex	1,751	2,019	1,696	1,728	2,418	2,219	2,219	2,482	2,396	1,317	1,782	19,808	
53	Barura Upazila Health Complex	63	111	113	257	168	335	335	319	552	108	238	2,264	
54	Basail UHC, Basail	240	215	385	338	513	495	495	524	504	478	401	4,093	
55	Batiaghata Upazila Health Complex	28	27	81	94	267	183	183	591	470	376	475	2,592	

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		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
56	Bauphal Upazila Health Complex	377	455	312	260	427	420	531	464	174	299	3,719		
57	Beanibazar Upazila Health Complex	3,047	2,725	4,219	3,636	5,461	4,603	5,523	9,085	2,547	2,841	43,687		
58	Begumganj Upazila Health Complex	310	345	603	879	897	1,145	1,067	1,438	483	728	7,895		
59	Belabo Upazila Health Complex	166	131	185	161	296	215	515	503	140	244	2,556		
60	Belaichari Upazila Health Complex	4	11	30	30	86	40	79	77	37	51	445		
61	Belkuchi Upazila Health Complex	429	661	442	647	892	815	1,493	1,362	618	899	8,258		
62	Bera Upazila Health Complex	903	1,018	1,123	1,254	1,938	1,711	2,981	2,800	1,668	1,849	17,245		
63	Betagi Upazila Health Complex	13	11	95	50	90	109	108	130	38	93	737		
64	Bhairab Upazila Health Complex	309	325	273	298	884	441	922	556	441	398	4,847		
65	Bhaluka Upazila Health Complex	724	513	1,211	1,011	1,282	1,298	1,214	1,337	1,017	1,095	10,702		
66	Bhandaria Upazila Health Complex	457	480	678	687	766	816	844	938	560	726	6,952		
67	Bhanga Upazila Health Complex	126	162	226	287	412	492	584	864	304	429	3,886		
68	Bhangura Upazila Health Complex	46	38	49	87	41	114	91	183	26	86	761		
69	Bhedarganj Upazila Health Complex	487	800	153	243	406	652	453	599	240	354	4,387		
70	Bheramara Upazila Health Complex	617	928	557	896	1,400	1,172	2,715	3,007	922	1,315	13,529		
71	Bholahat Upazila Health Complex	122	192	147	184	483	294	821	618	397	617	3,875		
72	Bhuapur Upazila Health Complex	965	628	1,605	1,466	1,997	1,879	2,217	2,125	1,256	1,444	15,582		
73	Bhurungamari Upazila Health Complex	360	515	157	212	373	274	1,149	1,007	435	612	5,094		
74	Birampur Upazila Health Complex	193	346	270	367	1,109	531	1,372	1,161	600	917	6,866		
75	Birganj Upazila Health Complex	189	275	175	247	532	409	916	1,022	354	529	4,648		
76	Birol Upazila Health Complex	250	282	449	540	526	531	772	852	565	625	5,392		
77	Biswambarpur Upazila Health Complex	17	33	138	85	356	281	422	547	133	333	2,345		
78	Biswanath Upazila Health Complex	172	239	146	247	382	413	683	673	228	377	3,560		
79	Boalkhali Upazila Health Complex	1,765	2,305	1,553	2,227	2,004	2,163	3,899	4,211	1,252	1,550	22,929		
80	Boalmari Upazila Health Complex	466	531	493	523	579	607	937	1,698	626	677	7,137		
81	Bochaganj Upazila Health Complex	208	304	171	213	960	355	1,239	966	539	650	5,605		
82	Boda Upazila Health Complex	211	149	463	435	486	548	548	506	392	481	4,219		
83	Borhanuddin Upazila Health Complex	957	1,687	425	527	1,110	802	2,041	1,407	852	880	10,688		
84	Brahmanpara Upazila Health Complex	51	46	57	92	144	379	200	521	83	153	1,726		

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		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
85	Burichong Upazila Health Complex	149	217	211	450	255	519	398	648	160	296	3,303		
86	Chaddagram Upazila Health Complex	0	0	9	0	1,023	1,056	1,069	1,183	1,057	1,277	6,674		
87	Chakaria Upazila Health Complex, Cox's Bazar	1,051	1,354	462	530	626	644	903	962	448	436	7,416		
88	Chandanaish Upazila Health Complex	450	750	172	194	575	285	838	433	467	435	4,599		
89	Chandina Upazila Health Complex	910	1,075	514	575	1,032	806	1,549	1,365	786	937	9,549		
90	Charbhadrason Upazila Health Complex	0	0	0	0	2	1	2	2	0	0	7		
91	Charfession Upazila Health Complex	351	467	456	711	652	575	1,087	991	297	486	6,073		
92	Charghat Upazila Health Complex	356	182	483	386	668	562	596	586	527	550	4,896		
93	Chatkhil Upazila Health Complex	622	920	229	303	1,924	518	1,961	924	619	692	8,712		
94	Chatmohar Upazila Health Complex	867	1,440	691	1,136	1,543	1,087	3,175	2,758	1,315	1,922	15,934		
95	Chhagalnaya Upazila Health Complex	81	140	121	278	300	514	552	843	248	333	3,410		
96	Chhatak Upazila Health Complex	90	168	116	313	342	796	640	1,293	206	420	4,384		
97	Chilmari Upazila Health Complex	304	303	379	526	391	558	375	564	292	398	4,090		
98	Chirribandar Upazila Health Complex	369	443	377	458	402	443	334	446	200	305	3,777		
99	Chitaimari Upazila Health Complex	170	250	250	296	718	533	860	1,063	405	500	5,045		
100	Chowgacha Upazila Health Complex	752	935	853	894	1,030	1,120	1,137	1,392	659	917	9,689		
101	Chowhali Upazila Health Complex	47	105	33	55	66	111	116	263	55	201	1,052		
102	Chunarughat Upazila Health Complex	142	155	286	466	590	720	911	1,132	332	624	5,358		
103	Cornilla Sadar Daxin Upazila Health Complex	5	5	19	24	59	105	83	290	0	18	608		
104	Companiganj SH Upazila Health Complex	474	774	198	320	387	633	758	998	278	396	5,216		
105	Companiganj Upazila Health Complex	479	413	103	103	190	350	498	179	42	102	2,459		
106	Dacope Upazila Health Complex	33	15	103	146	156	190	225	370	40	126	1,404		
107	Daganbhuiya Upazila Health Complex	198	112	370	272	459	357	613	410	175	237	3,203		
108	Dakhin Surma Upazila Health Complex	0	0	0	0	2	5	3	9	0	2	21		
109	Damudya Upazila Health Complex	141	160	285	181	581	368	753	635	420	540	4,064		
110	Damurhuda Upazila Health Complex	825	646	1,223	1,050	1,122	1,250	1,316	1,263	1,320	1,260	11,275		
111	Dashmina Upazila Health Complex	31	50	48	121	91	133	142	285	56	119	1,076		
112	Daudkandi Upazila Health Complex	494	579	1,420	1,217	1,972	1,705	2,030	1,989	1,854	1,682	14,942		
113	Daulatkhan Upazila Health Complex	108	149	141	315	128	306	228	470	91	178	2,114		

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		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
114	Daulatpur KT Upazila Health Complex	344	522	420	568	1,764	793	2,562	2,109	1,006	1,421	11,509		
115	Daulatpur Upazila Health Complex	136	234	167	274	275	221	678	500	362	453	3,300		
116	Debhata Upazila Health Complex	171	169	233	191	520	339	1,205	1,378	335	452	4,993		
117	Debidwar Upazila Health Complex	1,215	1,491	1,195	1,159	1,116	1,190	1,142	1,073	796	797	11,174		
118	Debiganj Upazila Health Complex	93	151	132	336	206	330	279	677	114	296	2,614		
119	Delduar Upazila Health Complex	45	26	208	104	268	265	183	271	77	124	1,571		
120	Derai Upazila Health Complex	343	380	414	352	496	476	524	504	627	615	4,731		
121	Dewanganj Upazila Health Complex	289	238	313	258	431	350	615	533	590	600	4,217		
122	Dhamairhat Upazila Health Complex	272	247	451	524	736	678	837	806	593	661	5,805		
123	Dhamrai Upazila Health Complex	1,080	1,413	998	1,439	2,306	1,718	4,334	3,909	1,599	2,019	20,815		
124	Dhanbari Upazila Health Complex	9	10	49	35	73	61	70	105	15	51	478		
125	Dharmapasha Upazila Health Complex	535	684	376	505	593	1,020	925	1,305	1,108	1,157	8,208		
126	Dhubaura Upazila Health Complex	595	694	474	498	658	601	768	749	615	707	6,359		
127	Dhunat Upazila Health Complex	1,197	1,042	1,562	1,410	1,754	1,670	1,688	1,765	783	1,042	13,913		
128	Dhupchachia Upazila Health Complex	323	340	1,180	1,233	2,370	2,877	2,217	4,485	449	891	16,365		
129	Dighalia Upazila Health Complex	154	171	187	226	251	314	500	524	327	350	3,004		
130	Dighinala Upazila Health Complex	287	238	412	378	443	457	336	415	238	295	3,499		
131	Dimla Upazila Health Complex	614	234	1,366	981	1,763	1,618	1,592	1,718	1,002	1,321	12,209		
132	Doarabazar Upazila Health Complex	384	584	71	208	212	383	748	1,836	131	307	4,864		
133	Dohar Upazila Health Complex	544	864	431	644	1,246	779	2,067	1,607	1,157	1,251	10,590		
134	Domar Upazila Health Complex	905	844	894	853	1,081	990	1,031	1,026	720	798	9,142		
135	Dumki Upazila Health Complex	23	40	54	51	114	121	197	247	93	138	1,078		
136	Dumuria Upazila Health Complex	122	119	274	267	317	377	393	441	197	277	2,784		
137	Durgapur Upazila Health Complex, Netrakona	546	922	267	426	685	642	1,319	1,301	608	964	7,680		
138	Durgapur Upazila Health Complex, Rajshahi	574	478	775	738	1,186	1,137	1,162	1,190	844	1,082	9,166		
139	Fakirhat Upazila Health Complex	565	655	782	997	947	1,398	843	1,473	733	1,062	9,455		
140	Faridganj Upazila Health Complex	106	29	346	211	517	479	650	575	523	673	4,109		
141	Faridpur Upazila Health Complex	906	1,411	636	1,155	583	720	1,242	1,489	502	795	9,439		
142	Fatikchhari Upazila Health Complex	1,689	2,324	975	1,315	2,629	1,606	2,765	2,164	1,459	1,663	18,589		

Sl. no.	Name of facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male					
143	Fenchuganj Upazila Health Complex	185	157	421	430	386	425	379	419	270	345	3,417				
144	Fulbari DP Upazila Health Complex	590	813	711	1,248	1,652	1,441	3,449	3,643	1,227	1,745	16,519				
145	Fulbari KG Upazila Health Complex	140	252	102	150	360	271	719	657	275	441	3,367				
146	Fulbaria Upazila Health Complex	268	418	213	345	318	361	505	587	216	431	3,662				
147	Fulchari Upazila Health Complex	123	172	76	88	271	156	572	445	249	293	2,445				
148	Fulgazi Health Complex, Feni	45	25	252	236	298	269	275	314	259	292	2,265				
149	Fulpur Upazila Health Complex	165	168	325	267	387	339	440	460	1,412	338	4,301				
150	Fultala Upazila Health Complex	206	277	86	160	133	132	281	271	80	113	1,739				
151	Gabatali Upazila Health Complex	83	164	106	171	211	198	322	396	108	167	1,926				
152	Galachipa Upazila Health Complex	15	31	74	149	213	467	381	860	117	252	2,559				
153	Gangachara Upazila Health Complex	148	128	265	210	619	586	817	899	728	808	5,208				
154	Gangni Upazila Health Complex	12	8	30	72	164	143	343	358	154	218	1,502				
155	Gazaria Upazila Health Complex	298	384	349	383	1,220	720	2,269	1,765	1,124	1,133	9,645				
156	Ghatail Upazila Health Complex	194	135	233	257	354	314	469	570	458	483	3,467				
157	Ghior Upazila Health Complex	69	32	181	79	247	167	383	271	256	208	1,893				
158	Ghoraghat Upazila Health Complex	103	229	195	343	413	444	853	1,228	346	672	4,826				
159	Goalanda Upazila Health Complex	540	813	468	820	547	667	995	1,504	415	761	7,530				
160	Gobindaganj Upazila Health Complex	112	141	201	308	375	430	663	985	226	409	3,850				
161	Godagari Upazila Health Complex	251	443	273	362	696	470	1,114	984	485	757	5,835				
162	Gofargaon Upazila Health Complex	1,569	1,320	1,716	1,696	1,825	1,732	1,866	1,912	1,548	1,700	16,884				
163	Golapganj Upazila Health Complex	765	995	418	449	621	675	961	1,128	606	726	7,344				
164	Gomastapur Upazila Health Complex	1,426	1,537	1,546	1,420	1,618	1,755	1,314	1,504	905	1,053	14,078				
165	Gopalpur Upazila Health Complex	232	380	113	147	657	262	1,079	644	410	544	4,468				
166	Goshairhat UHC	597	957	207	220	789	346	1,126	718	375	510	5,845				
167	Gouripur Upazila Health Complex	649	687	772	671	1,261	910	1,722	1,306	1,201	1,226	10,405				
168	Gournadi Upazila Health Complex	645	804	271	318	718	604	1,011	1,043	480	640	6,534				
169	Gowainghat Upazila Health Complex	2,346	2,178	2,244	2,046	2,369	2,103	2,465	2,216	3,037	2,652	23,656				
170	Gurudashpur Upazila Health Complex	307	222	767	555	1,128	865	1,248	1,053	971	841	7,957				
171	Haimchar Upazila Health Complex	26	44	44	116	30	68	60	102	24	50	564				

Sl. no.	Name of facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
172	Hakimpur Upazila Health Complex	368	321	664	473	2,778	1,030	1,863	1,630	1,234	1,436	1,1797				
173	Haluaghat Upazila Health Complex	648	800	601	739	1,122	1,013	1,511	1,698	777	1,014	9,923				
174	Harinakunda Upazila Health Complex	61	61	60	129	64	85	148	255	64	95	1,022				
175	Haripur Upazila Health Complex	111	103	136	125	148	149	154	179	134	152	1,391				
176	Harrampur Upazila Health Complex	24	29	54	23	116	87	159	140	84	74	790				
177	Hathazari Upazila Health Complex	1,554	1,596	1,367	1,336	1,299	1,320	1,349	1,411	1,160	1,184	13,576				
178	Hatibandha Upazila Health Complex	751	793	837	864	1,187	1,130	1,444	1,440	1,285	1,287	11,018				
179	Hatiya Upazila Health Complex	1,368	2,370	194	228	999	313	1,448	1,164	398	689	9,171				
180	Haziganj Upazila Health Complex	621	685	665	858	760	836	960	1,108	425	578	7,496				
181	Hijla Upazila Health Complex	270	231	549	439	664	526	739	622	374	494	4,908				
182	Homna Upazila Health Complex	288	124	823	650	1,059	1,020	986	1,051	964	920	7,885				
183	Hossainpur Upazila Health Complex	785	1,201	959	1,735	1,496	1,647	2,896	2,584	1,299	1,862	16,464				
184	Islampur Upazila Health Complex	958	926	1,347	1,258	1,739	1,655	1,795	1,832	1,514	1,552	14,576				
185	Iswardi Upazila Health Complex	99	136	130	241	280	272	350	550	164	228	2,450				
186	Iswarganj Upazila Health Complex	906	935	867	807	1,435	958	1,324	1,319	983	920	10,454				
187	Itna Upazila Health Complex	10	7	100	34	159	114	210	187	153	179	1,153				
188	Jagannathpur Upazila Health Complex	819	806	927	940	938	959	874	935	848	919	8,965				
189	Jaldhaka Upazila Health Complex	1,116	921	1,354	1,013	1,433	980	1,334	873	1,039	597	10,660				
190	Jamalganj Upazila Health Complex	859	842	973	1,026	913	973	794	894	1,240	759	9,273				
191	Jhenaigati Upazila Health Complex	0	0	7	3	22	21	22	27	26	24	152				
192	Jhikargacha Upazila Health Complex	472	464	820	627	1,387	1,038	2,677	1,851	3,479	3,316	16,131				
193	Jibannagar Upazila Health Complex	95	90	300	173	1,306	1,150	1,402	2,748	165	514	7,943				
194	Jointapur Upazila Health Complex	782	751	714	747	1,080	1,039	1,117	1,328	1,186	1,305	10,049				
195	Juraichari Upazila Health Complex	11	12	18	46	16	78	45	188	39	18	471				
196	Kachua BH Upazila Health Complex	49	65	339	185	518	354	555	472	421	462	3,420				
197	Kachua Upazila Health Complex	129	201	186	346	349	487	626	779	204	386	3,693				
198	Kahaloo Upazila Health Complex	1,255	1,228	1,277	1,250	1,270	1,263	1,268	1,249	1,282	1,280	12,602				
199	Kaharol Upazila Health Complex	259	306	363	617	644	848	1,228	1,564	545	778	7,152				
200	Kalai Upazila Health Complex	1,091	1,539	874	1,152	1,459	1,124	3,275	3,082	1,650	1,947	17,193				

Sl. no.	Name of facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Total		
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
201	Kalapara Upazila Health Complex	86	157	101	246	208	354	382	791	107	273	2,705		
202	Kalaroa Upazila Health Complex	0	1	1	2	34	38	73	54	35	43	281		
203	Kalia Upazila Health Complex	171	292	218	570	230	479	589	867	227	473	4,116		
204	Kaliakair Upazila Health Complex	387	534	477	876	1,857	1,398	3,132	2,809	1,027	1,305	13,802		
205	Kaliganj GZ Upazila Health Complex	938	1,255	716	1,093	1,509	1,643	2,046	2,641	827	1,108	13,776		
206	Kaliganj JD Upazila Health Complex	343	565	304	608	316	528	732	1,221	247	535	5,399		
207	Kaliganj LH Upazila Health Complex	568	566	775	611	1,141	895	1,522	1,383	602	644	8,707		
208	Kaliganj SK Upazila Health Complex	106	163	164	180	562	242	891	665	319	438	3,730		
209	Kalihati Upazila Health Complex	612	977	871	1,512	1,069	1,092	2,314	2,486	1,173	1,548	13,654		
210	Kalkini Upazila Health Complex	327	470	223	434	636	649	1,165	1,126	581	761	6,372		
211	Kalmakanda Upazila Health Complex	618	898	280	335	634	610	1,027	1,406	485	852	7,145		
212	Kamaiganj Upazila Health Complex	1,669	1,503	1,105	991	1,285	1,204	1,765	1,459	1,167	1,205	13,353		
213	Kamarkhanda Upazila Health Complex	0	0	0	0	349	182	362	362	361	362	1,978		
214	Kamolnagar Upazila Health Complex	11	4	98	28	502	364	411	548	89	298	2,353		
215	Kanaighat Upazila Health Complex	197	384	239	503	474	699	717	900	291	521	4,925		
216	Kapasia Upazila Health Complex	583	790	391	641	593	637	1,050	1,195	488	839	7,207		
217	Kaptai Upazila Health Complex	134	187	89	107	173	223	316	409	154	228	2,020		
218	Karimganj Upazila Health Complex	1,726	1,646	1,786	1,797	2,014	1,919	2,144	2,194	1,763	1,892	18,881		
219	Kashiani Upazila Health Complex	63	43	66	69	71	85	94	83	68	83	725		
220	Kathalia Upazila Health Complex	52	32	137	111	242	251	512	485	237	265	2,324		
221	Katiadi Upazila Health Complex	2,381	3,381	2,092	3,553	2,298	2,573	4,057	4,101	1,694	2,277	28,407		
222	Kawkhali Upazila Health Complex, Pirojpur	47	44	60	155	43	153	124	243	48	97	1,014		
223	Kawkhali Upazila Health Complex, Rangamati	1	0	5	7	15	18	29	53	3	6	137		
224	Kazipur Upazila Health Complex	100	63	157	172	310	242	573	512	453	632	3,214		
225	Kendua Upazila Health Complex	1	0	17	9	2	7	13	34	18	36	137		
226	Keraniganj Upazila Health Complex	224	180	498	442	659	608	869	787	834	858	5,959		
227	Keshabpur Upazila Health Complex	264	392	351	662	385	528	842	1,153	324	619	5,520		
228	Khansama Upazila Health Complex	78	105	137	119	1,757	264	1,307	609	627	485	5,488		
229	Khetlal Upazila Health Complex	109	90	228	196	287	264	345	401	168	252	2,340		

Sl. no.	Name of facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
230	Khoksha Upazila Health Complex	587	885	509	759	1,228	870	2,044	1,654	1,028	1,376	10,940				
231	Kishoreganj Upazila Health Complex	461	276	588	499	813	667	941	832	825	881	6,783				
232	Kotalipara Upazila Health Complex	375	619	337	355	1,093	688	1,390	1,083	626	843	7,409				
233	Kotchandpur Upazila Health Complex	539	677	526	876	666	874	1,258	1,925	575	1,005	8,921				
234	Kownia Upazila Health Complex	254	246	434	355	537	478	536	528	573	562	4,503				
235	Koyra Upazila Health Complex	10	18	60	51	89	103	31	76	10	18	466				
236	Kulaura Upazila Health Complex	2,108	2,808	1,883	2,123	2,536	2,526	3,128	3,351	1,391	1,887	23,741				
237	Kuliarchar Upazila Health Complex	152	198	137	231	227	258	283	335	142	214	2,177				
238	Kumarkhali Upazila Health Complex	360	301	826	864	1,360	1,637	1,299	1,777	1,123	1,514	11,061				
239	Kutubdia Upazila Health Complex	633	738	590	705	618	684	624	699	504	599	6,394				
240	Lakshai Upazila Health Complex	186	281	226	453	300	480	686	753	230	378	3,973				
241	Laksham Upazila Health Complex	81	111	132	205	336	509	579	733	225	296	3,207				
242	Lakshmichari Upazila Health Complex	1	1	1	0	3	2	6	10	2	6	32				
243	Lalmohan Upazila Health Complex	288	289	327	483	378	456	454	645	319	383	4,022				
244	Lalpur Upazila Health Complex	365	473	327	350	1,164	608	2,498	1,617	1,071	1,274	9,747				
245	Lama Upazila Health Complex	373	351	290	276	325	310	556	558	488	444	3,971				
246	Langadu Upazila Health Complex	6	6	18	26	11	44	34	122	11	23	301				
247	Lohagara Upazila Health Complex, Narail	303	507	223	280	826	512	1,434	1,020	597	768	6,470				
248	Lohagara Upazila Health Complex, Chittagong	256	207	329	346	411	395	434	527	267	408	3,580				
249	Louhajang Upazila Health Complex	468	452	463	414	586	505	1,081	872	457	492	5,790				
250	Madan Upazila Health Complex	206	346	151	225	712	421	1,255	1,130	525	718	5,689				
251	Madarganj Upazila Health Complex	360	360	445	440	681	677	866	862	990	989	6,670				
252	Madhabpur Upazila Health Complex	554	761	313	326	686	566	1,871	1,947	591	542	8,157				
253	Manda Upazila Health Complex	500	795	501	628	1,307	923	2,542	2,296	1,061	1,433	11,986				
254	Manikchari Upazila Health Complex	4	0	43	34	131	105	90	109	15	20	551				
255	Manpura Upazila Health Complex	153	138	143	122	353	398	406	551	97	201	2,562				
256	Mathbaria Upazila Health Complex	1,014	1,213	502	594	804	613	2,541	1,848	637	874	10,640				
257	Matiranga Upazila Health Complex	2	1	28	25	29	23	28	20	23	18	197				
258	Matlab(daxin) Upazila Health Complex	440	349	596	644	707	680	781	733	505	603	6,038				

Sl. no.	Name of facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
259	Matlab(uttar) Upazila Health Complex	24	12	167	80	379	365	301	361	32	179	1,900		
260	Meghna Upazila Health Complex	14	13	73	65	139	201	155	337	34	126	1,157		
261	Mehendiganj Upazila Health Complex	189	188	632	538	760	659	644	594	332	344	4,880		
262	Melandaha Upazila Health Complex	378	566	470	820	516	717	987	1,307	423	730	6,914		
263	Mirarsari Upazila Health Complex	871	1,156	501	825	2,079	1,403	2,470	2,156	1,007	1,284	13,752		
264	Mirpur Upazila Health Complex	466	577	466	869	617	777	1,374	1,774	518	840	8,278		
265	Mirzapur Upazila Health Complex	1,215	1,070	1,336	1,270	1,423	1,380	1,456	1,330	1,201	1,249	12,930		
266	Mithamoin Upazila Health Complex	314	299	441	410	483	466	532	595	240	393	4,173		
267	Mithapukur Upazila Health Complex	389	560	724	974	1,105	1,364	1,535	1,857	617	903	10,028		
268	Modhukhali Upazila Health Complex	623	519	735	688	899	836	1,062	994	1,181	1,133	8,670		
269	Modhupur Upazila Health Complex	841	1,221	537	921	1,824	1,145	3,421	3,069	1,107	1,691	15,777		
270	Mohadepur Upazila Health Complex	404	449	563	858	634	855	1,199	1,814	565	873	8,214		
271	Mohalchari Upazila Health Complex	1	3	10	18	12	6	7	14	2	13	86		
272	Mohammadpur Upazila Health Complex	166	189	159	167	302	245	470	351	206	265	2,520		
273	Mohanganj Upazila Health Complex	300	419	261	454	369	519	782	1,041	337	487	4,969		
274	Mohanpur Upazila Health Complex	83	16	242	234	474	288	487	537	431	498	3,290		
275	Moheshkhali Upazila Health Complex	2,387	2,393	1,734	1,741	1,867	1,709	1,578	1,461	1,439	1,470	17,779		
276	Moheshpur Upazila Health Complex	392	547	292	358	889	536	1,784	1,391	888	1,052	8,129		
277	Mollahat Upazila Health Complex	251	300	319	320	655	524	1,239	780	736	705	5,829		
278	Mongla Upazila Health Complex	27	31	75	90	148	205	170	272	30	152	1,200		
279	Monirampur Upazila Health Complex	502	671	451	636	568	533	1,120	1,386	386	665	6,918		
280	Monohardi Upazila Health Complex	198	320	297	566	493	773	964	1,456	427	867	6,361		
281	Morrelganj Upazila Health Complex	46	36	123	161	298	444	702	786	461	320	3,377		
282	Mujibnagar Upazila Health Complex	321	379	364	475	371	509	926	1,402	519	796	6,062		
283	Mukshedpur Upazila Health Complex	1,256	941	1,312	1,306	1,243	1,322	1,299	1,254	1,189	1,270	12,392		
284	Mukttagacha Upazila Health Complex	740	1,127	646	1,099	1,208	1,270	1,977	2,266	792	1,326	12,451		
285	Muladi Upazila Health Complex	5	27	3	1	2	20	33	2	12	6	111		
286	Muradnagar Upazila Health Complex	944	1,390	502	766	1,261	1,038	2,147	1,873	959	1,101	11,981		
287	Nabiganj Upazila Health Complex	632	386	765	765	843	757	824	761	836	780	7,349		

Sl. no.	Name of facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
288	Nabinagar Upazila Health Complex	229	221	360	469	451	570	669	805	468	500	4,742		
289	Nachol Upazila Health Complex	192	206	140	177	178	192	325	438	141	199	2,188		
290	Nagarkanda Upazila Health Complex	542	853	600	1,049	518	704	981	1,055	407	699	7,408		
291	Nagarapur Upazila Health Complex	14	17	201	107	520	405	609	542	703	690	3,808		
292	Nageswari Upazila Health Complex	159	286	332	584	368	762	681	1,429	274	717	5,592		
293	Naikhongchari Upazila Health Complex	27	329	82	58	91	145	102	95	13	77	1,019		
294	Nakla Upazila Health Complex	372	539	361	492	724	658	1,232	1,399	635	939	7,351		
295	Nalchithi Upazila Health Complex	1,254	756	2,775	1,988	4,028	3,440	4,652	4,531	4,194	4,381	31,999		
296	Nalitabari Upazila Health Complex	489	357	767	636	1,075	974	1,473	1,514	1,584	1,765	10,634		
297	Nandail Upazila Health Complex	1,031	1,157	1,098	1,136	1,595	1,374	1,537	1,630	790	1,031	12,379		
298	Nandigram Upazila Health Complex	162	229	139	194	310	306	996	671	572	656	4,235		
299	Nangolkot Upazila Health Complex	190	253	116	97	237	174	304	296	125	152	1,944		
300	Naniarchar Upazila Health Complex	0	0	3	1	113	34	246	237	26	139	799		
301	Naria Upazila Health Complex	141	290	204	420	247	800	247	812	209	586	3,956		
302	Nasirnagar Upazila Health Complex	1,309	1,722	792	985	771	798	1,021	1,309	706	987	10,400		
303	Nawabganj DP Upazila Health Complex	125	230	132	170	654	338	1,182	870	448	575	4,724		
304	Nawabganj Upazila Health Complex	454	503	619	742	979	1,115	1,094	1,328	591	768	8,193		
305	Nazirpur Upazila Health Complex	76	38	154	135	134	175	153	179	103	140	1,287		
306	Nesarabad Upazila Health Complex	794	1,172	341	392	1,719	637	2,261	1,154	1,012	1,247	10,729		
307	Niamatpur Upazila Health Complex	17	15	46	80	59	89	128	287	77	150	948		
308	Nikli Upazila Health Complex	14	9	70	44	83	75	102	129	80	110	716		
309	Paba Upazila Health Complex	107	194	192	314	315	409	915	916	489	757	4,608		
310	Paikgacha Upazila Health Complex	32	40	32	51	71	88	106	218	47	70	755		
311	Pakundia Upazila Health Complex	730	692	462	616	594	579	1,005	892	600	952	7,122		
312	Palash Upazila Health Complex	312	252	312	302	391	358	451	431	413	457	3,679		
313	Palashbari Upazila Health Complex	180	328	211	258	764	513	1,376	1,238	630	909	6,407		
314	Panchari Upazila Health Complex	266	271	334	259	355	374	325	332	145	256	2,917		
315	Panchbibi Upazila Health Complex	49	90	56	134	117	221	210	535	99	246	1,757		
316	Pangsha Upazila Health Complex	63	105	52	114	110	202	218	475	127	254	1,720		

Sl. no.	Name of facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
317	Parbatipur Upazila Health Complex	592	591	651	603	892	817	1,320	1,327	479	716	7,988		
318	Parsuram Upazila Health Complex	28	51	66	173	67	211	110	301	66	169	1,242		
319	Patgram Upazila Health Complex	786	680	747	820	793	800	816	833	725	796	7,796		
320	Patharghata Upazila Health Complex	50	39	92	84	161	226	307	540	104	199	1,802		
321	Patiya Upazila Health Complex	96	85	102	85	127	106	138	128	104	121	1,092		
322	Patnitala Upazila Health Complex	98	176	164	315	232	403	518	1,001	234	429	3,570		
323	Pekua Upazila Health Complex	16	2	38	86	99	430	86	457	22	82	1,318		
324	Pirgacha Upazila Health Complex	416	463	571	469	931	747	1,240	1,057	410	609	6,913		
325	Pirganj RP Upazila Health Complex	920	422	1,439	1,239	1,492	1,478	1,590	1,519	1,547	1,590	13,236		
326	Pirganj TG Upazila Health Complex	49	69	85	94	71	126	140	193	74	100	1,001		
327	Porsha Upazila Health Complex	260	354	124	223	444	328	799	757	393	469	4,151		
328	Purbadhala Upazila Health Complex	447	629	348	550	853	675	1,296	1,186	580	705	7,269		
329	Puthia Upazila Health Complex	0	0	1,017	687	1,060	846	1,012	868	727	847	7,064		
330	Raiganj Upazila Health Complex	189	295	88	99	382	164	743	496	387	492	3,335		
331	Raipur Upazila Health Complex	46	63	103	211	233	302	379	551	137	266	2,291		
332	Raipura Upazila Health Complex	1,790	2,478	1,866	2,147	1,945	2,043	2,196	2,327	916	1,176	18,884		
333	Rajapur Upazila Health Complex	363	510	339	355	590	521	978	969	599	846	6,070		
334	Rajarhat Upazila Health Complex	28	3	43	29	94	62	148	115	200	195	917		
335	Rajasthali Upazila Health Complex	21	43	22	45	78	79	76	138	26	68	596		
336	Rajibpur Upazila Health Complex	73	31	143	135	198	205	326	292	202	247	1,852		
337	Rajnagar Upazila Health Complex	539	515	952	913	1,006	951	961	957	922	933	8,649		
338	Rajoir Upazila Health Complex	270	344	400	377	824	607	1,146	948	588	686	6,190		
339	Ramganj Upazila Health Complex	10	5	15	19	70	123	182	210	45	68	747		
340	Ramgarh Upazila Health Complex	0	0	0	4	7	10	10	8	4	5	48		
341	Ramgati Upazila Health Complex	894	1,434	170	195	372	246	568	501	205	298	4,883		
342	Rampal Upazila Health Complex	3	2	3	7	36	51	70	110	28	49	359		
343	Ramu Upazila Health Complex	335	448	357	535	699	825	994	1,224	240	440	6,097		
344	Rangunia Upazila Health Complex	131	234	151	160	176	173	184	175	173	162	1,719		
345	Raninagar Upazila Health Complex	594	595	565	515	1,078	748	1,617	1,327	962	946	8,947		

Sl. no.	Name of facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
346	Ranisankhail Upazila Health Complex	72	114	254	282	1,250	696	1,995	1,205	868	663	7,399				
347	Rowangchari Upazila Health Complex	5	6	6	11	9	9	12	36	2	9	105				
348	Rowmari Upazila Health Complex	2	6	111	40	205	219	242	281	131	216	1,453				
349	Ruma Upazila Health Complex	72	57	0	0	0	0	0	79	0	20	228				
350	Rupganj Upazila Health Complex	67	96	176	164	811	572	1,079	1,142	398	484	4,989				
351	Rupsha Upazila Health Complex	45	101	101	305	137	395	405	832	169	450	2,940				
352	Sadarpur Upazila Health Complex	71	116	134	206	428	428	947	940	421	599	4,290				
353	Sadullapur Upazila Health Complex	246	219	137	144	143	127	367	297	103	159	1,942				
354	Saharasthi Upazila Health Complex	414	421	418	454	536	568	3,089	2,477	842	979	10,198				
355	Saidpur Upazila Health Complex	0	0	0	0	0	0	0	0	9	0	9				
356	Sakhipur Upazila Health Complex	289	273	371	352	479	454	475	541	416	493	4,143				
357	Sandwip Upazila Health Complex	5	4	4	6	5	7	3	6	3	5	48				
358	Santhia Upazila Health Complex	673	1,107	789	985	2,239	1,804	2,463	2,337	730	1,022	14,149				
359	Sapahar Upazila Health Complex	295	297	419	424	953	717	1,680	2,177	723	1,194	8,879				
360	Sarail Upazila Health Complex	167	144	770	687	1,337	1,360	2,457	2,236	1,485	1,506	12,149				
361	Sarankhola Upazila Health Complex	41	56	120	116	296	219	206	283	76	115	1,528				
362	Sariakandi Upazila Health Complex	510	591	407	484	584	721	1,107	1,350	496	745	6,995				
363	Sarishabari Upazila Health Complex	75	70	484	592	1,141	1,880	1,133	1,966	781	1,247	9,369				
364	Sarsa Upazila Health Complex	261	315	455	656	639	835	972	1,344	554	850	6,881				
365	Satkania Upazila Health Complex	609	585	559	574	544	535	525	552	824	458	5,765				
366	Saturia Upazila Health Complex	264	333	274	619	324	518	763	1,081	332	568	5,076				
367	Savar Upazila Health Complex	120	87	300	229	551	546	1,503	1,694	553	578	6,161				
368	Senbag Upazila Health Complex	586	592	730	771	747	769	730	746	707	699	7,077				
369	Serajdikhan Upazila Health Complex	695	955	712	1,106	1,432	1,010	2,675	2,005	1,154	1,372	13,116				
370	Shaghata Upazila Health Complex	278	144	332	293	342	330	337	350	335	333	3,074				
371	Shahzadpur Upazila Health Complex	450	407	412	435	888	611	1,029	974	315	527	6,048				
372	Shailkupa Upazila Health Complex	1,402	2,125	791	1,225	2,148	1,292	3,164	2,580	1,257	1,736	17,720				
373	Shajahanpur Upazila Health Complex	10	6	128	46	217	160	462	297	531	492	2,349				
374	Shailikha Upazila Health Complex	0	0	118	114	98	91	82	86	63	59	711				

Sl. no.	Name of facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
375	Sherpur Upazila Health Complex	921	1,090	995	1,255	1,556	1,566	4,235	4,720	1,820	2,394	20,552		
376	Shibalaya Upazila Health Complex	240	406	230	271	1,029	556	1,781	1,424	608	1,022	7,567		
377	Shibchar Upazila Health Complex	121	117	159	192	338	285	326	412	197	336	2,483		
378	Shibganj Bogra Upazila Health Complex	346	502	88	124	497	259	1,180	1,050	493	669	5,208		
379	Shibganj NG Upazila Health Complex	202	271	154	285	320	479	477	918	185	381	3,672		
380	Shibpur Upazila Health Complex	532	869	674	1,184	1,137	1,291	2,068	2,026	859	1,303	11,943		
381	Shyamagar Upazila Health Complex	955	1,243	775	728	2,818	1,025	2,311	1,777	1,066	1,611	14,309		
382	Singair Upazila Health Complex	157	192	200	244	549	411	863	807	362	473	4,258		
383	Singra Upazila Health Complex	729	951	749	1,016	883	1,164	1,766	2,063	702	957	10,980		
384	Sitakunda Upazila Health Complex	1,076	997	1,142	994	1,240	1,157	1,285	1,273	1,220	1,301	11,685		
385	Sonagazi Upazila Health Complex	95	98	338	403	489	666	571	844	241	415	4,160		
386	Sonargaon Upazila Health Complex	16	4	256	49	226	549	164	277	61	157	1,759		
387	Sonatala Upazila Health Complex	205	313	163	228	731	385	1,237	892	353	619	5,126		
388	Sreemangal Upazila Health Complex	1,050	1,193	1,214	1,439	2,836	2,254	3,564	3,549	1,417	1,938	20,454		
389	Sreenagar Upazila Health Complex	127	149	103	140	214	237	395	448	233	296	2,342		
390	Sreepur MG Upazila Health Complex	5	7	334	301	384	573	318	483	63	191	2,659		
391	Sreepur Upazila Health Complex	395	554	651	827	1,007	1,219	1,266	1,405	837	1,071	9,232		
392	Sribordi Upazila health Complex	579	854	520	967	639	857	1,605	1,895	736	1,192	9,844		
393	Subarnachar Upazila Health Complex	320	304	313	381	653	535	603	577	150	120	3,956		
394	Sujanagar Upazila Health Complex	1,438	1,761	1,431	1,445	2,095	1,785	3,267	2,834	1,664	1,787	19,507		
395	Sulla Upazila Health Complex	21	41	45	74	55	89	57	100	45	82	609		
396	Taherpur Upazila Health Complex	275	211	416	551	396	565	389	506	380	472	4,161		
397	Tajumuddin Upazila Health Complex	0	0	200	59	288	280	346	322	336	362	2,193		
398	Tala Upazila Health Complex	32	54	69	57	204	113	313	275	156	197	1,470		
399	Tanore Upazila Health Complex	25	21	220	98	333	208	289	246	13	45	1,498		
400	Taraganj Upazila Health Complex	169	212	244	217	384	305	556	428	406	424	3,345		
401	Tarail Upazila Health Complex	145	242	232	547	310	508	395	677	224	392	3,672		
402	Tarash Upazila Health Complex	16	22	31	82	42	85	98	239	31	63	709		
403	Teknaf Upazila Health Complex	1,629	2,276	873	1,050	1,701	1,504	2,339	2,260	746	911	15,289		

Sl. no.	Name of facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
404	Terakhada Upazila Health Complex	2	3	138	166	174	326	117	282	1	21	1,230				
405	Tetulia Upazila Health Complex	137	227	166	407	213	367	484	723	171	332	3,227				
406	Thanchi Upazila Health Complex	1	0	10	11	6	41	12	89	11	78	259				
407	Titas Upazila Health Complex	319	344	463	436	690	625	815	769	536	608	5,605				
408	Trisal Upazila Health Complex	1,352	1,393	1,686	1,678	2,334	2,179	2,777	2,902	1,334	1,592	19,227				
409	Tungibari Upazila Health Complex	144	165	289	361	513	468	699	740	278	411	4,068				
410	Tungipara Upazila Health Complex	414	633	364	354	1,346	643	1,338	948	435	802	7,277				
411	Ukhyia Upazila Health Complex	2,271	2,591	1,021	1,028	1,687	1,089	3,389	3,447	935	1,462	18,920				
412	Ulipur Upazila Health Complex	271	43	619	558	725	826	624	775	448	627	5,516				
413	Ullapara Upazila Health Complex	664	755	249	311	338	278	1,275	1,081	848	771	6,570				
414	Wazirpur Upazila Health Complex	191	223	155	222	447	354	809	674	423	598	4,096				
415	Zanjira Upazila Health Complex	2	0	37	21	316	523	287	618	17	67	1,888				
416	Zianagar Upazila Health Complex	0	0	2	1	7	4	6	11	3	20	54				
417	Zokiganj Upazila Health Complex	1,349	1,724	997	1,391	1,863	1,608	2,196	2,140	1,023	1,193	15,484				
418	100 Bed Hospital, Saidpur, Nilphamari	449	466	470	646	599	691	664	965	409	525	5,884				
419	B.Barua District Hospital, B.Barua	2,859	3,717	2,745	3,841	6,048	7,449	4,799	6,314	5,747	7,697	51,216				
420	Bagerhat District Hospital, Bagerhat	271	350	333	585	663	875	561	935	535	861	5,969				
421	Bandarban District Hospital, Bandarban	257	328	243	501	334	785	510	1,255	136	332	4,681				
422	Barguna District Hospital, Barguna	1,414	2,089	1,591	2,375	2,692	2,344	5,433	5,000	1,786	2,738	27,462				
423	Barisal District Hospital, Barisal	133	99	368	305	507	421	596	525	430	384	3,768				
424	Bhola District Hospital, Bhola	562	720	1,270	1,505	1,568	1,845	1,703	2,076	1,343	1,761	14,353				
425	Chandpur District Hospital, Chandpur	2,064	2,696	2,182	2,644	2,149	2,806	2,139	2,828	2,281	2,860	24,649				
426	Chittagong General Hospital, Chittagong	904	1,138	1,111	1,862	1,631	2,532	1,824	3,138	805	1,447	16,392				
427	Chuadanga District Hospital, Chuadanga	3,567	3,536	3,727	3,475	9,391	11,632	9,625	9,512	9,522	9,224	73,211				
428	Comilla District Hospital, Comilla	636	1,007	501	1,329	1,430	2,543	2,384	4,107	885	1,544	16,366				
429	Coxs Bazar District Hospital, Coxs Bazar	7,334	8,483	6,123	6,592	9,090	7,739	12,277	10,681	7,367	7,819	83,505				
430	Dinajpur District Hospital, Dinajpur	1,508	1,395	2,175	1,979	1,882	2,093	1,864	1,967	1,767	1,883	18,513				
431	Faridpur General Hospital, Faridpur	4,245	4,154	4,564	3,973	5,148	4,747	6,128	5,382	4,026	4,170	46,537				
432	Feni District Hospital, Feni	1,154	1,630	700	1,047	1,986	1,329	2,464	2,006	1,144	1,455	14,915				

Sl. no.	Name of facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
433	Gaibandha District Hospital, Gaibandha	4,703	4,314	4,864	4,483	4,987	4,949	5,443	5,186	6,064	5,540	50,533		
434	Gazipur District Hospital, Gazipur	3,213	3,193	3,916	4,014	8,618	9,353	28,230	29,554	3,571	4,387	98,049		
435	Gopalganj District Hospital, Gopalganj	983	1,042	912	1,143	1,074	1,252	854	1,128	1,025	930	10,343		
436	Habiganj District Hospital, Habiganj	1,027	869	1,426	1,286	2,315	2,192	3,441	3,265	1,410	1,246	18,477		
437	Jamalpur District Hospital, Jamalpur	5,069	7,024	2,008	2,627	6,614	2,815	10,131	5,018	5,950	7,047	54,303		
438	Jessore District Hospital, Jessore	829	539	821	777	3,699	4,821	4,856	7,908	3,294	5,166	32,710		
439	Jhalokati District Hospital, Jhalokati	1,679	2,376	2,151	3,497	3,362	3,283	5,829	5,327	2,463	3,250	33,217		
440	Jhenaidah District Hospital, Jhenaidah	5	5	533	2,725	944	4,848	447	3,738	45	1,467	14,757		
441	Joypurhat District Hospital, Joypurhat	450	309	475	486	573	575	577	603	499	515	5,062		
442	Khagrachhari District Hospital, Khagrachari	231	218	301	323	374	393	358	503	173	284	3,158		
443	Khulna District Hospital, Khulna	279	524	1,012	1,380	2,083	2,636	3,209	4,640	1,721	2,713	20,197		
444	Kishoreganj District Hospital, Kishoreganj	844	987	409	503	702	1,413	797	1,640	370	674	8,339		
445	Kurigram District Hospital, Kurigram	3,481	4,354	1,558	2,317	3,953	3,278	6,787	6,752	2,577	4,801	39,858		
446	Kushtia District Hospital, Kushtia	1,032	1,247	1,286	2,129	1,612	2,900	3,035	4,827	1,258	1,940	21,266		
447	Lakshmipur District Hospital	340	552	687	1,558	1,058	2,052	2,193	3,269	702	1,261	13,672		
448	Lalmonirhat District Hospital, Lalmonirhat	751	734	1,966	1,703	2,747	2,629	3,089	3,020	655	701	17,995		
449	M. Bazar District Hospital, M. Bazar	6,691	6,621	6,199	6,648	8,161	6,705	8,449	7,777	8,482	8,163	73,896		
450	Madaripur District Hospital, Madaripur	1,575	1,603	1,583	1,649	3,343	3,138	3,391	3,240	3,521	3,399	26,442		
451	Magura District Hospital, Magura	394	289	885	761	1,272	1,146	1,311	1,319	1,131	1,070	9,578		
452	Manikganj District Hospital, Manikganj	237	283	250	389	334	378	500	634	263	367	3,635		
453	Meherpur District Hospital, Meherpur	1,512	1,294	1,673	1,639	1,763	1,723	1,877	1,812	1,849	1,907	17,049		
454	Mohammad Ali District Hospital, Bogra	1,058	1,548	1,638	2,143	3,127	2,697	5,004	4,881	1,977	2,782	26,855		
455	Munshiganj District Hospital, Munshiganj	2,863	2,882	5,359	4,910	6,080	5,976	6,391	6,533	3,234	3,418	47,646		
456	Nababganj District Hospital, Nababganj	3,020	3,263	2,615	2,523	2,487	2,442	3,546	3,832	2,576	2,550	28,854		
457	Naogaon District Hospital, Naogaon	5,198	4,970	5,165	4,993	5,794	5,596	6,000	5,943	6,489	6,189	56,337		
458	Narail District Hospital, Narail	1,095	1,048	1,667	1,526	1,742	1,803	3,013	2,842	1,240	973	16,949		
459	Narayanganj 300-bed Hospital	2,188	2,045	5,619	5,275	13,181	12,042	6,123	5,930	2,343	2,493	57,239		
460	Narayanganj General (Victoria) Hospital (100-bed)	12,443	9,639	10,354	8,774	19,178	18,285	17,509	17,468	6,432	7,983	128,065		
461	Narsingdi (100-bed) Zila Hospital, Narsingdi	2,323	2,102	2,906	2,672	4,797	4,231	6,529	7,870	3,449	3,813	40,692		

Sl. no.	Name of facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
462	Narsingdi District Hospital, Narsingdi	8,634	8,788	6,965	7,442	5,416	5,804	12,947	11,560	5,976	7,019	80,551				
463	Natore District Hospital, Natore	1,288	1,550	1,325	1,591	3,820	3,888	3,928	3,911	3,762	3,797	28,860				
464	Netrakona District Hospital, Netrakona	3,980	5,607	4,140	5,371	8,483	8,311	12,331	11,501	4,578	6,207	70,509				
465	Nilphamari District Hospital, Nilphamari	1,614	2,596	716	613	3,583	1,172	11,469	8,999	1,864	2,132	34,758				
466	Pabna District Hospital, Pabna	2,166	2,065	3,220	2,988	5,773	4,829	6,916	6,474	1,820	2,217	38,468				
467	Panchagarh District Hospital, Panchagarh	618	557	692	560	975	659	1,512	1,330	866	1,284	9,053				
468	Patuakhali District Hospital, Patuakhali	1,445	2,204	452	479	1,747	620	2,650	1,471	1,041	1,421	13,530				
469	Pirojpur District Hospital, Pirojpur	3,315	3,516	2,711	3,152	4,690	3,472	7,341	6,115	3,821	3,674	41,807				
470	Rajbari District Hospital, Rajbari	1,100	884	1,322	1,086	1,941	1,525	3,758	3,170	1,347	1,592	17,725				
471	Rangamati District Hospital, Rangamati	264	348	355	720	481	962	640	1,427	193	458	5,848				
472	Satkhira District Hospital, Satkhira	642	741	879	981	185	321	1,018	1,434	1,003	1,420	8,624				
473	Shahid Shamsuddin District Hospital, Sylhet	1	0	296	43	336	324	335	408	9	261	2,013				
474	Shariatpur District Hospital, Shariatpur	1,834	2,005	1,603	1,445	3,319	2,168	4,031	3,150	2,870	3,146	25,571				
475	Sherpur District Hospital, Sherpur	1,447	1,882	1,270	2,202	1,688	2,416	3,738	4,964	1,505	2,141	23,253				
476	Sirajganj General Hospital	2,111	2,237	1,497	1,526	3,965	2,939	5,926	6,051	2,730	3,378	32,360				
477	Sunamganj District Hospital, Sunamganj	6,647	5,493	6,027	5,675	5,487	5,941	7,337	6,634	8,165	7,476	64,882				
478	Tangail District Hospital, Tangail	2,844	2,974	2,348	5,416	2,350	6,438	2,385	5,832	2,367	3,227	36,181				
479	Thakurgaon District Hospital, Thakurgaon	114	187	242	317	490	817	703	2,328	275	452	5,925				
480	Kurmitola General Hospital (500-bed)	1,326	1,785	1,419	1,818	4,068	3,995	7,445	8,625	3,476	4,536	38,493				
481	Mugda 500-bedded General Hospital	1,264	1,815	910	1,394	2,566	2,083	4,319	4,549	1,417	2,080	22,397				
482	Bangladesh Institute of Tropical and Infectious Diseases, Faujdarhat	23	26	77	124	236	272	601	748	339	273	2,719				
483	Chittagong Medical College Hospital, Chittagong	9,393	11,304	12,563	10,708	23,198	19,795	28,709	26,219	27,859	37,881	207,629				
484	Comilla Medical College Hospital, Comilla	1,569	1,284	2,517	2,041	6,650	5,268	9,069	7,488	2,892	2,334	41,112				
485	Dhaka Medical College Hospital, Dhaka	8,978	10,689	9,775	11,645	29,227	31,706	106,868	122,413	24,867	35,397	391,565				
486	Faridpur Medical College Hospital, Faridpur	1,567	1,972	1,897	1,725	3,382	2,884	3,999	3,859	2,771	3,665	27,721				
487	Khulna Medical College Hospital, Khulna	374	358	657	721	864	1,221	820	1,296	496	827	7,634				
488	M Abdur Rahim Medical College Hospital, Dinaipour	3,376	3,424	2,305	2,377	2,155	2,127	8,571	8,569	7,355	7,551	47,810				
489	MAG Osmani Medical College Hospital, Sylhet	1,340	1,642	1,588	2,174	2,098	3,095	2,522	4,260	1,436	2,247	22,402				
490	Mymensingh Medical College Hospital, Mymensingh	1,964	2,114	1,124	1,195	1,203	1,364	1,304	1,404	1,450	1,636	14,758				

Sl. no.	Name of facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Total		
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
491	Rajshahi Medical College Hospital, Rajshahi	262	228	627	603	888	850	1,052	1,133	317	367	6,327		
492	Rangpur Medical College Hospital, Rangpur	5,124	5,515	5,081	5,318	5,536	5,727	5,712	6,077	6,305	6,554	56,949		
493	Shaheed Suhrawardy Medical College Hospital, Dhaka	10,515	15,761	15,261	12,507	16,7018	16,540	23,851	18,441	21,286	19,258	320,438		
494	Shahid Ziaur Rahman Medical College Hospital, Bogra	2,539	4,134	1,041	1,908	6,478	8,410	11,725	14,785	5,688	7,432	64,140		
495	Sir Salimullah Medical College Hospital, Mitford, Dhaka	4,561	4,149	7,288	6,995	12,469	11,755	20,077	19,842	16,769	17,430	121,335		
496	National Institute of Cardiovascular Diseases, Dhaka	129	247	192	357	872	1,056	6,323	10,037	6,361	15,545	41,119		
497	National Institute of Diseases of the Chest and Hospital, Dhaka	64	89	115	168	433	647	756	1,768	806	4,153	8,999		
498	National Institute of Kidney Diseases & Urology, Dhaka	36	34	95	249	654	1,071	1,023	1,831	686	1,325	7,004		
499	National Institute of Mental Health and Research, Dhaka	1	0	58	77	439	683	636	996	139	194	3,223		
500	National Institute Of Neurosciences (NINS)	430	495	704	723	1,428	1,387	3,165	3,447	3,648	4,988	20,415		
501	National Institute of Traumatology & Orthopaedic Rehabilitation, Dhaka(NITTOR)	525	788	622	1,999	705	2,546	1,705	5,138	1,020	1,551	16,599		
	Total	357625	408834	384566	427751	789146	621607	966698	1021970	521219	642485	6,141,901		

3. List of public hospitals with the number of admissions in 2016 distributed among patients of different age groups

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Total		
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
1	Kaptai 10-bed Hospital, Rangamati	1	2	2	1	3	4	5	0	7	2	27		
2	Kaitak 20-bedded Hospital, Chhatak, Sunamganj	76	18	62	12	66	8	81	20	40	12	395		
3	Ullapara 20-bedded Hospital, Ullapara, Sirajganj	639	560	845	788	823	853	870	891	729	755	7,753		
4	Godagari 31-bedded Hospital, Rajshahi	64	122	64	67	586	219	838	518	187	275	2,940		
5	Haragacha 31-bed Hospital, Rangpur	17	16	57	35	162	95	360	326	291	326	1,685		
6	Tongi 50-bed Hospital, Gazipur	222	285	177	177	838	466	1,260	1,148	414	655	5,642		
7	Abhoynagar Upazila Health Complex	309	422	383	299	1,717	474	2,536	1,323	1,001	1,202	9,666		
8	Adamdighi Upazila Health Complex	198	301	143	144	470	245	1,285	758	588	682	4,814		
9	Aditmari Upazila Health Complex	88	92	188	96	243	248	260	270	87	87	1,659		
10	Agatjhara Upazila Health Complex, Barisal	296	466	216	198	366	299	602	451	424	473	3,791		
11	Akhaura Upazila Health Complex	464	571	155	145	436	277	810	596	402	436	4,292		

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male		
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
12	Akkelpur Upazila Health Complex	213	257	167	155	661	241	1,388	718	707	669	5,176		
13	Alamdanga Upazila Health Complex	359	494	241	230	669	332	1,464	926	756	750	6,221		
14	Alfadanga Upazila Health Complex	136	54	300	294	670	455	764	663	350	487	4,173		
15	Alikadam Upazila Health Complex	250	382	147	141	342	194	501	290	166	168	2,581		
16	Amtali Upazila Health Complex	349	594	181	169	550	254	1,113	725	386	406	4,727		
17	Anwara Upazila Health Complex	1,042	1,780	261	353	885	351	1,462	782	663	581	8,160		
18	Araihazar Upazila Health Complex	3	39	32	61	497	244	830	574	283	329	2,892		
19	Assasuni Upazila Health Complex	136	115	149	76	311	154	503	265	447	420	2,576		
20	Athoria Upazila Health Complex	71	106	161	158	422	279	1,349	814	596	664	4,620		
21	Atpara Upazila Health Complex	50	60	88	51	242	155	549	439	247	307	2,188		
22	Atrai Upazila Health Complex	117	157	90	120	1,227	188	993	562	231	310	3,995		
23	Atwari Upazila Health Complex	214	285	211	227	716	280	1,395	903	512	633	5,376		
24	Austagram Upazila Health Complex	419	502	781	592	937	954	765	917	479	631	6,977		
25	Azmiriganj Upazila Health Complex	316	541	68	137	432	220	700	415	215	283	3,327		
26	Babuganj Upazila Health Complex, Barisal	24	47	34	53	78	67	198	150	170	170	991		
27	Badalgachi Upazila Health Complex	116	150	78	82	401	176	697	622	529	502	3,353		
28	Badarganj Upazila Health Complex	549	198	486	383	579	412	891	740	1,013	907	6,158		
29	Bagatipara Upazila Health Complex	92	127	105	76	327	201	849	539	430	446	3,192		
30	Bagerpara Upazila Health Complex	412	601	243	236	590	265	1,064	705	540	623	5,279		
31	Bagha Upazila Health Complex	120	105	197	115	796	355	1,476	958	516	418	5,056		
32	Baghaichari Upazila Health Complex	84	69	105	80	164	115	275	198	124	117	1,331		
33	Bagmara Upazila Health Complex	33	11	128	79	221	141	160	121	15	39	948		
34	Bahubal Upazila Health Complex	652	1,262	152	200	749	426	1,504	988	432	586	6,951		
35	Bajitpur Upazila Health Complex	439	704	128	152	465	235	870	498	361	540	4,392		
36	Bakerganj Upazila Health Complex, Barisal	336	507	186	156	498	282	898	656	318	408	4,245		
37	Bakshiganj Upazila Health Complex	338	591	121	123	859	368	1,560	991	397	428	5,776		
38	Balaganj Upazila Health Complex	193	279	80	85	347	139	565	274	181	243	2,386		
39	Baliakandi Upazila Health Complex	175	235	149	143	623	281	904	653	337	490	3,990		
40	Bamna Upazila Health Complex	77	120	71	88	172	162	454	354	240	294	2,032		

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
41	Banaripara Upazila Health Complex	360	583	197	169	1,124	270	1,381	525	448	432	5,489		
42	Bancharampur Upazila Health Complex	160	272	90	80	207	127	394	232	220	230	2,012		
43	Bandar Upazila Health Complex	14	11	53	34	129	65	279	165	230	346	1,326		
44	Baniachong Upazila Health Complex	527	595	441	359	729	494	1,092	650	509	514	5,910		
45	Banshkhali Upazila Health Complex	1,208	2,258	305	448	609	457	1,340	881	712	750	8,968		
46	Baraigram Upazila Health Complex	26	40	83	86	303	158	948	712	279	356	2,991		
47	Barhatta Upazila Health Complex	146	215	84	94	367	180	656	467	297	315	2,821		
48	Barkol Upazila Health Complex	44	36	43	51	89	66	145	149	63	84	770		
49	Barlekha Upazila Health Complex	901	1,309	154	221	1,185	360	1,617	706	660	574	7,687		
50	Barura Upazila Health Complex	255	336	127	119	518	267	706	485	271	287	3,371		
51	Basail UHC, Basail	125	143	129	112	477	406	1,533	941	808	1,440	6,114		
52	Batiaghata Upazila Health Complex	44	28	80	45	262	102	528	317	346	425	2,177		
53	Bauphal Upazila Health Complex	399	456	333	292	479	465	610	576	285	392	4,287		
54	Beanibazar Upazila Health Complex	450	342	886	487	1,878	822	1,786	730	383	350	8,114		
55	Begumganj Upazila Health Complex	50	64	131	113	241	192	321	232	102	145	1,591		
56	Belabo Upazila Health Complex	71	144	110	122	704	241	1,126	629	387	476	4,010		
57	Belaitchari Upazila Health Complex	7	17	25	26	99	29	97	82	42	63	487		
58	Belkuchi Upazila Health Complex	296	293	206	192	487	361	828	697	400	473	4,233		
59	Bera Upazila Health Complex	339	549	281	230	1,416	715	2,217	1,604	851	1,027	9,229		
60	Betagi Upazila Health Complex	141	224	86	95	272	153	630	328	292	311	2,532		
61	Bhairab Upazila Health Complex	284	291	191	224	584	116	611	232	293	250	3,076		
62	Bhatuka Upazila Health Complex	609	445	1,194	994	1,301	1,254	1,199	1,257	899	1,078	10,230		
63	Bhandaria Upazila Health Complex	279	419	167	195	647	322	1,364	729	507	572	5,201		
64	Bhanga Upazila Health Complex	207	224	238	164	918	464	1,243	999	527	694	5,678		
65	Bhangura Upazila Health Complex	348	648	145	174	529	245	1,183	723	477	670	5,142		
66	Bhedarganj Upazila Health Complex	891	1,539	65	33	490	201	830	375	429	396	5,249		
67	Bheramara Upazila Health Complex	398	606	299	314	998	482	1,877	1,180	544	651	7,349		
68	Bholahat Upazila Health Complex	101	158	123	126	568	263	1,056	587	506	561	4,049		
69	Bhuapur Upazila Health Complex	428	453	460	525	1,052	684	1,252	859	696	727	7,136		

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male					
70	Bhurungamari Upazila Health Complex	305	452	141	139	367	286	905	665	387	539	4,186				
71	Birampur Upazila Health Complex	126	222	141	132	1,077	277	1,433	784	432	561	5,185				
72	Birganj Upazila Health Complex	199	153	174	108	472	243	765	626	302	397	3,439				
73	Birol Upazila Health Complex	66	132	181	148	338	235	558	456	332	421	2,867				
74	Biswambarpur Upazila Health Complex	400	376	267	290	487	344	694	568	291	387	4,104				
75	Biswanath Upazila Health Complex	99	171	60	72	148	45	263	138	116	151	1,263				
76	Boalkhali Upazila Health Complex	854	1,071	266	291	970	278	1,597	707	705	542	7,281				
77	Boalmari Upazila Health Complex	1,720	2,466	486	459	1,439	550	1,871	1,042	684	790	11,507				
78	Bochaganj Upazila Health Complex	187	194	120	145	926	241	1,091	650	413	510	4,477				
79	Boda Upazila Health Complex	235	205	479	433	528	505	492	511	387	412	4,187				
80	Borhanuddin Upazila Health Complex	956	1,645	361	390	932	535	1,777	903	779	720	8,998				
81	Brahmanpara Upazila Health Complex	374	681	89	131	252	188	428	323	196	305	2,967				
82	Burichong Upazila Health Complex	411	761	175	191	473	310	786	523	422	466	4,518				
83	Chauddagram Upazila Health Complex	1,274	1,840	361	383	1,107	396	1,479	596	664	567	8,667				
84	Chakaria Upazila Health Complex, Cox's Bazar	1,200	1,169	99	100	302	282	439	481	171	198	4,441				
85	Chandanaish Upazila Health Complex	440	742	158	175	549	246	839	434	467	448	4,498				
86	Chandina Upazila Health Complex	779	1,122	886	645	869	611	759	657	608	564	7,500				
87	Charbhadrason Upazila Health Complex	99	17	235	167	311	269	317	303	181	280	2,179				
88	Charfession Upazila Health Complex	1,504	1,130	433	432	1,991	742	2,686	1,766	711	962	12,357				
89	Charghat Upazila Health Complex	13	17	168	153	1,370	533	2,491	1,438	746	670	7,599				
90	Chatkhil Upazila Health Complex	560	845	166	186	1,627	278	1,447	581	442	451	6,583				
91	Chatmohar Upazila Health Complex	713	1,136	946	366	2,130	979	948	1,365	789	994	10,366				
92	Chhagalnaya Upazila Health Complex	803	1,144	238	192	609	242	1,035	448	641	447	5,799				
93	Chhatak Upazila Health Complex	570	693	353	202	702	243	1,062	448	480	309	5,062				
94	Chilmari Upazila Health Complex	255	272	303	518	347	515	336	486	237	390	3,659				
95	Chirirbandar Upazila Health Complex	115	216	352	326	336	273	264	191	169	142	2,384				
96	Chitalmari Upazila Health Complex	219	349	143	169	516	294	874	516	499	559	4,138				
97	Chowgacha Upazila Health Complex	809	1,134	876	654	3,138	962	2,812	1,216	993	878	13,472				
98	Chunarughat Upazila Health Complex	208	380	191	154	557	387	912	617	479	556	4,441				

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
99	Companiganj SH Upazila Health Complex	364	640	48	53	89	66	172	148	71	92	1,743				
100	Companiganj Upazila Health Complex	944	1,520	171	306	922	288	900	547	341	403	6,342				
101	Dacope Upazila Health Complex	322	441	287	141	1,075	249	1,213	624	487	576	5,415				
102	Daganbhuiya Upazila Health Complex	112	54	283	248	413	315	655	352	207	216	2,855				
103	Damudya Upazila Health Complex	306	364	422	284	690	403	809	549	423	487	4,737				
104	Damurhuda Upazila Health Complex	485	255	1,004	858	922	1,031	1,104	1,002	1,124	1,072	8,857				
105	Dashmina Upazila Health Complex	193	371	126	157	434	272	982	673	379	431	4,018				
106	Daudkandi Upazila Health Complex	148	100	293	226	491	377	1,732	869	545	527	5,308				
107	Daulatkhan Upazila Health Complex	543	802	172	191	418	218	838	517	353	328	4,380				
108	Daulatpur KT Upazila Health Complex	92	1	517	82	1,141	387	1,687	970	1,863	1,208	7,948				
109	Daulatpur Upazila Health Complex	75	135	80	78	260	156	584	414	271	390	2,443				
110	Debhata Upazila Health Complex	55	61	232	82	796	265	586	292	82	147	2,598				
111	Debidwar Upazila Health Complex	880	978	725	728	954	817	1,032	970	612	651	8,347				
112	Debiganj Upazila Health Complex	208	317	143	146	1,974	293	1,801	877	375	646	6,780				
113	Delduar Upazila Health Complex	13	12	182	65	234	233	103	163	30	61	1,096				
114	Derai Upazila Health Complex	272	432	326	274	440	450	479	466	644	732	4,515				
115	Dewanganj Upazila Health Complex	186	158	214	142	382	272	539	487	516	491	3,387				
116	Dhamairhat Upazila Health Complex	215	205	413	307	666	596	670	665	524	543	4,804				
117	Dhamrai Upazila Health Complex	207	319	162	186	950	304	1,640	902	694	708	6,072				
118	Dharmapasha Upazila Health Complex	481	852	187	194	951	384	1,104	745	506	664	6,068				
119	Dhubaura Upazila Health Complex	359	399	490	411	607	560	655	662	647	725	5,515				
120	Dhunat Upazila Health Complex	470	322	432	369	489	465	596	589	339	395	4,466				
121	Dhupchachia Upazila Health Complex	234	176	544	341	878	636	1,132	870	698	715	6,224				
122	Dighalia Upazila Health Complex	34	38	131	117	368	210	695	453	495	453	2,994				
123	Dighinala Upazila Health Complex	150	149	237	182	309	250	257	298	159	189	2,180				
124	Dimla Upazila Health Complex	762	357	1,627	1,180	1,936	1,876	1,540	1,817	856	1,236	13,187				
125	Doarabazar Upazila Health Complex	320	588	68	71	290	103	432	196	170	159	2,397				
126	Dohar Upazila Health Complex	423	658	268	320	946	453	1,585	916	828	818	7,215				
127	Domar Upazila Health Complex	917	927	775	762	1,198	1,050	1,230	1,089	710	843	9,501				

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
128	Dumki Upazila Health Complex	13	29	33	29	81	67	151	137	73	97	710				
129	Dumuria Upazila Health Complex	160	171	422	250	754	482	924	717	549	451	4,880				
130	Durgapur Upazila Health Complex, Netrakona	605	805	211	248	859	393	1,280	838	530	755	6,524				
131	Durgapur Upazila Health Complex, Rajshahi	88	104	268	218	886	599	1,250	919	513	648	5,493				
132	Fakirhat Upazila Health Complex	459	328	788	509	1,230	561	1,993	1,052	1,598	1,015	9,533				
133	Faridganj Upazila Health Complex	27	22	145	65	334	244	415	385	284	380	2,301				
134	Faridpur Upazila Health Complex	187	317	155	169	534	310	999	648	653	673	4,645				
135	Fatikchhari Upazila Health Complex	984	1,614	164	221	2,179	208	1,672	390	400	299	8,131				
136	Fenchuganj Upazila Health Complex	225	412	41	64	171	63	1,749	1,003	372	256	4,356				
137	Fulbari DP Upazila Health Complex	327	425	181	193	975	412	1,807	1,190	578	779	6,867				
138	Fulbari KG Upazila Health Complex	94	166	58	65	283	171	595	432	243	315	2,422				
139	Fulbaria Upazila Health Complex	277	425	120	122	520	257	922	587	423	441	4,094				
140	Fulchari Upazila Health Complex	111	166	54	67	218	120	478	364	197	258	2,033				
141	Fulgazi Health Complex, Feni	78	38	373	331	681	467	772	493	822	518	4,573				
142	Fulpur Upazila Health Complex	236	395	84	65	304	135	464	249	234	228	2,394				
143	Fultala Upazila Health Complex	227	262	273	210	1,009	439	1,663	1,047	904	1,085	7,119				
144	Gabtaai Upazila Health Complex	218	359	131	131	273	196	828	524	453	584	3,697				
145	Galachipa Upazila Health Complex	667	1,106	261	302	584	516	1,164	1,173	419	587	6,779				
146	Gangachara Upazila Health Complex	92	86	189	157	1,028	317	970	423	601	411	4,274				
147	Gangni Upazila Health Complex	252	342	347	312	2,384	495	3,285	1,444	1,033	1,172	11,066				
148	Gazaria Upazila Health Complex	139	207	274	245	907	412	1,754	1,030	917	853	6,738				
149	Ghataai Upazila Health Complex	188	209	229	214	495	307	841	539	667	645	4,334				
150	Ghior Upazila Health Complex	25	19	72	31	160	70	277	146	165	160	1,125				
151	Ghoraghat Upazila Health Complex	83	150	81	90	377	169	683	486	289	328	2,736				
152	Goalanda Upazila Health Complex	446	804	286	319	994	449	1,739	1,155	660	825	7,677				
153	Gobindganj Upazila Health Complex	275	497	354	269	3,860	718	2,881	1,379	531	541	11,305				
154	Godagari Upazila Health Complex	94	168	109	102	489	225	749	524	280	479	3,219				
155	Gofargaon Upazila Health Complex	279	272	490	392	612	588	636	629	490	535	4,923				
156	Golapganj Upazila Health Complex	277	473	13	329	335	337	779	339	306	260	3,448				

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
157	Gomastapur Upazila Health Complex	459	634	153	138	825	376	1,470	855	538	678	6,126				
158	Gopalpur Upazila Health Complex	189	305	80	88	633	227	1,036	590	381	511	4,040				
159	Goshairhat UHC	579	729	194	184	548	209	927	628	422	410	4,830				
160	Gouripur Upazila Health Complex	250	332	301	246	871	462	1,346	868	803	800	6,279				
161	Gournadi Upazila Health Complex	503	709	157	168	517	294	894	529	346	394	4,511				
162	Gowainghat Upazila Health Complex	720	753	887	745	1,091	868	1,169	954	1,200	1,046	9,433				
163	Gurudashpur Upazila Health Complex	203	183	478	342	1,083	590	1,392	871	603	596	6,341				
164	Haimchar Upazila Health Complex	114	373	87	87	287	95	271	176	124	131	1,745				
165	Hakimpur Upazila Health Complex	100	155	80	89	479	167	789	520	349	432	3,160				
166	Haluaghat Upazila Health Complex	627	1,032	84	127	995	429	2,362	1,565	1,371	1,411	10,003				
167	Harinakunda Upazila Health Complex	259	400	224	252	1,486	421	2,413	1,222	846	1,011	8,534				
168	Haripur Upazila Health Complex	70	68	102	108	126	131	118	117	106	121	1,067				
169	Harirampur Upazila Health Complex	16	45	21	21	102	65	204	142	81	121	818				
170	Hathazari Upazila Health Complex	466	677	210	217	561	306	566	468	311	398	4,180				
171	Hatibandha Upazila Health Complex	324	409	445	309	969	582	1,301	876	728	746	6,689				
172	Hatiya Upazila Health Complex	1,279	2,356	184	215	840	260	1,188	801	374	558	8,055				
173	Haziganj Upazila Health Complex	365	420	335	381	497	451	586	510	272	320	4,137				
174	Hijla Upazila Health Complex	94	92	235	194	348	309	433	424	159	274	2,562				
175	Honna Upazila Health Complex	326	491	133	154	575	233	945	516	483	516	4,372				
176	Hossainpur Upazila Health Complex	623	960	362	426	994	664	1,857	1,220	903	1,173	9,182				
177	Islampur Upazila Health Complex	296	465	223	300	677	363	1,180	833	481	611	5,429				
178	Iswardi Upazila Health Complex	41	87	98	89	919	182	1,369	533	494	416	4,228				
179	Iswarganj Upazila Health Complex	930	1,393	423	356	1,524	481	1,592	670	494	542	8,405				
180	Itna Upazila Health Complex	135	237	218	146	387	334	432	431	259	347	2,926				
181	Jagannathpur Upazila Health Complex	638	644	618	611	634	585	822	711	359	417	6,039				
182	Jaldhaka Upazila Health Complex	922	1,346	324	307	2,226	584	3,060	1,437	714	950	11,870				
183	Jamalganj Upazila Health Complex	451	438	479	474	427	453	412	423	682	393	4,632				
184	Jhikargacha Upazila Health Complex	45	19	307	201	459	355	627	544	725	707	3,989				
185	Jibannagar Upazila Health Complex	103	88	248	111	1,376	855	2,888	2,739	607	569	9,584				

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
186	Jaintapur Upazila Health Complex	297	256	765	438	817	793	1,002	871	707	911	6,857				
187	Juraichari Upazila Health Complex	26	23	12	18	35	18	59	57	32	34	314				
188	Kachua BH Upazila Health Complex	100	170	195	119	558	202	893	478	401	499	3,615				
189	Kachua Upazila Health Complex	107	139	134	122	658	380	1,031	706	295	445	4,017				
190	Kahaloo Upazila Health Complex	126	120	160	82	429	174	1,136	570	759	564	4,120				
191	Kaharol Upazila Health Complex	76	90	49	86	280	158	594	395	329	371	2,428				
192	Kalai Upazila Health Complex	271	349	247	173	677	356	1,633	994	928	1,011	6,639				
193	Kalapara Upazila Health Complex	623	1,041	430	403	1,299	614	1,890	1,325	705	731	9,061				
194	Kalaroa Upazila Health Complex	9	3	30	38	136	65	226	122	97	134	860				
195	Kalia Upazila Health Complex	329	501	167	151	1,005	282	1,097	514	522	591	5,159				
196	Kaliakair Upazila Health Complex	113	171	186	198	1,263	473	1,831	1,077	617	709	6,638				
197	Kaliganj GZ Upazila Health Complex	164	287	151	144	709	281	1,156	741	703	735	5,071				
198	Kaliganj JD Upazila Health Complex	819	1,280	340	395	1,060	489	2,107	1,409	1,014	1,218	10,131				
199	Kaliganj LH Upazila Health Complex	136	193	155	168	374	308	967	841	387	543	4,072				
200	Kaliganj SK Upazila Health Complex	81	122	125	82	542	140	758	420	278	318	2,866				
201	Kalihati Upazila Health Complex	179	280	164	158	743	289	1,604	814	819	892	5,942				
202	Kalkini Upazila Health Complex	266	375	145	142	510	290	855	561	399	444	3,987				
203	Kalmakanda Upazila Health Complex	400	734	135	208	819	346	825	878	352	501	5,198				
204	Kamalganj Upazila Health Complex	718	1,124	305	378	1,190	561	1,551	900	600	664	7,991				
205	Kamolnagar Upazila Health Complex	1,253	2,154	282	369	718	522	1,239	838	462	457	8,294				
206	Kanaighat Upazila Health Complex	327	601	180	213	718	383	1,034	593	421	540	5,010				
207	Kapasia Upazila Health Complex	687	19	179	226	751	365	1,317	814	629	690	5,677				
208	Kaptai Upazila Health Complex	166	218	83	84	198	128	371	303	262	270	2,083				
209	Karimganj Upazila Health Complex	379	475	247	174	615	430	802	694	489	570	4,875				
210	Kashiani Upazila Health Complex	53	48	52	49	56	54	53	53	53	56	527				
211	Kathalia Upazila Health Complex	71	45	231	145	282	273	557	441	379	340	2,764				
212	Katiadi Upazila Health Complex	691	1,067	334	342	1,382	458	2,283	996	961	942	9,456				
213	Kawkhali Upazila Health Complex, Pirojpur	61	110	72	80	216	120	535	324	275	321	2,114				
214	Kawkhali Upazila Health Complex, Rangamati	73	84	60	75	137	96	242	217	119	110	1,213				

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
215	Kazipur Upazila Health Complex	105	155	107	98	366	151	891	532	396	611	3,412		
216	Kendua Upazila Health Complex	51	41	114	103	134	83	210	140	164	118	1,158		
217	Keraniganj Upazila Health Complex	130	182	109	101	284	151	549	288	492	405	2,691		
218	Keshabpur Upazila Health Complex	303	478	231	223	694	386	1,489	1,211	782	1,078	6,875		
219	Khaliajuri Upazila Health Complex	7	26	5	10	17	11	55	49	17	37	234		
220	Khansama Upazila Health Complex	79	105	137	119	1,751	264	1,310	603	625	483	5,476		
221	Khetlail Upazila Health Complex	89	137	137	128	813	246	1,423	714	469	555	4,711		
222	Khoksha Upazila Health Complex	338	656	245	255	822	390	1,473	927	769	886	6,761		
223	Kishoreganj Upazila Health Complex	307	304	519	397	745	559	866	776	723	793	5,989		
224	Kotalipara Upazila Health Complex	344	654	216	284	975	486	1,228	861	570	735	6,353		
225	Kotchandpur Upazila Health Complex	853	1,248	358	358	1,212	462	2,533	1,621	1,204	1,440	11,289		
226	Kownia Upazila Health Complex	216	164	394	323	554	447	594	516	597	508	4,313		
227	Koyra Upazila Health Complex	264	389	227	152	574	224	664	450	270	362	3,576		
228	Kulaura Upazila Health Complex	1,182	1,942	318	413	1,196	570	1,859	1,118	633	657	9,888		
229	Kuliarchar Upazila Health Complex	89	141	27	29	79	60	118	70	55	66	734		
230	Kumarkhali Upazila Health Complex	792	1,172	380	361	1,227	461	2,171	1,227	940	1,086	9,817		
231	Kutubdia Upazila Health Complex	725	960	304	403	562	387	797	606	428	466	5,638		
232	Lakhsai Upazila Health Complex	177	278	123	116	304	188	637	347	235	261	2,666		
233	Laksham Upazila Health Complex	224	320	141	131	1,189	498	967	538	373	417	4,798		
234	Lakshmichhari Upazila Health Complex	4	10	1	1	2	1	10	17	2	3	51		
235	Lalmohan Upazila Health Complex	1,152	670	1,061	709	990	773	1,010	845	859	814	8,883		
236	Lalpur Upazila Health Complex	337	419	279	307	1,056	529	2,359	1,377	998	1,185	8,846		
237	Lama Upazila Health Complex	366	345	263	263	306	284	589	574	506	447	3,943		
238	Langadu Upazila Health Complex	90	194	73	53	221	124	545	287	120	213	1,920		
239	Lohagara Upazila Health Complex, Narail	305	361	189	159	712	324	1,237	597	525	580	4,989		
240	Lohagara Upazila Health Complex, Chittagong	746	742	541	564	548	347	621	404	476	487	5,476		
241	Louhajang Upazila Health Complex	49	45	150	94	285	209	330	250	177	213	1,802		
242	Madan Upazila Health Complex	213	265	102	148	559	299	1,018	867	418	521	4,410		
243	Madarganj Upazila Health Complex	202	177	333	324	353	350	359	351	354	354	3,157		

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
244	Madhabpur Upazila Health Complex	353	632	107	159	494	325	1,049	680	352	346	4,497		
245	Manda Upazila Health Complex	248	359	169	157	787	336	1,524	990	627	690	5,887		
246	Manikchari Upazila Health Complex	25	26	54	66	222	173	157	59	34	7	823		
247	Manpura Upazila Health Complex	341	313	162	159	253	204	439	399	167	141	2,578		
248	Mathbaria Upazila Health Complex	765	1,290	245	300	1,007	464	1,572	956	672	817	8,088		
249	Matiranga Upazila Health Complex	32	39	27	31	30	35	24	24	24	15	281		
250	Matlab (Daxin) Upazila Health Complex	502	734	259	226	865	392	1,165	684	557	612	5,996		
251	Matlab (Uttar) Upazila Health Complex	0	10	127	14	611	407	325	413	47	176	2,130		
252	Meghna Upazila Health Complex	4	5	7	7	72	28	176	191	49	72	611		
253	Mehendiganj Upazila Health Complex	259	246	530	315	616	340	506	351	187	158	3,508		
254	Melandaha Upazila Health Complex	68	96	108	93	433	208	825	523	379	457	3,190		
255	Mirsarai Upazila Health Complex	560	860	185	197	438	323	924	534	535	523	5,079		
256	Mirpur Upazila Health Complex	753	21	280	147	739	343	1,571	1,086	716	812	6,468		
257	Mirzapur Upazila Health Complex	16	14	63	54	390	322	378	384	76	72	1,769		
258	Mithamoin Upazila Health Complex	148	270	85	82	234	134	396	320	161	200	2,030		
259	Mithapukur Upazila Health Complex	495	672	240	224	1,699	461	2,475	1,326	716	852	9,160		
260	Modhukhali Upazila Health Complex	491	603	318	319	840	527	1,192	961	847	886	6,984		
261	Madhupur Upazila Health Complex	463	736	230	237	1,302	409	2,127	1,283	763	863	8,413		
262	Mohadevpur Upazila Health Complex	348	364	196	165	947	412	1,484	1,059	682	846	6,503		
263	Mohaichhari Upazila Health Complex	68	105	55	53	179	83	281	149	167	148	1,288		
264	Mohammadpur Upazila Health Complex	139	231	84	74	403	119	599	262	216	226	2,353		
265	Mohanganj Upazila Health Complex	488	741	189	217	1,005	404	1,586	922	490	712	6,754		
266	Mohanpur Upazila Health Complex	215	63	418	347	448	420	506	519	356	475	3,767		
267	Moheshkhali Upazila Health Complex	2,605	2,167	2,072	1,629	1,472	1,160	1,099	851	715	601	14,371		
268	Moheshpur Upazila Health Complex	395	524	258	265	885	420	1,743	1,172	870	951	7,483		
269	Mollahat Upazila Health Complex	163	237	170	198	539	368	1,174	667	537	540	4,593		
270	Mongla Upazila Health Complex	163	239	238	194	844	433	1,243	782	637	766	5,539		
271	Monirampur Upazila Health Complex	542	2	530	1	1,046	576	1,599	713	620	1,058	6,687		
272	Monohardi Upazila Health Complex	235	263	122	99	585	266	994	605	318	464	3,951		

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
273	Morrelganj Upazila Health Complex	270	452	229	147	540	255	899	596	384	463	4,235		
274	Mujibnagar Upazila Health Complex	33	40	140	91	304	174	786	533	528	530	3,159		
275	Mukhedpur Upazila Health Complex	327	232	392	357	406	389	417	356	440	378	3,694		
276	Muktagacha Upazila Health Complex	241	419	225	281	2,128	432	2,549	873	620	736	8,504		
277	Muladi Upazila Health Complex	26	47	13	4	31	17	40	21	32	33	264		
278	Muradnagar Upazila Health Complex	761	1,288	330	305	963	553	1,638	1,094	717	711	8,360		
279	Nabiganj Upazila Health Complex	508	331	717	683	736	699	717	633	705	699	6,428		
280	Nabinagar Upazila Health Complex	490	306	667	402	699	422	691	417	641	352	5,087		
281	Nachol Upazila Health Complex	169	248	108	153	649	283	1,155	814	429	518	4,526		
282	Nagarkanda Upazila Health Complex	257	353	234	225	802	430	1,357	911	553	616	5,738		
283	Nagarpur Upazila Health Complex	63	72	225	208	826	678	1,485	1,096	1,175	872	6,700		
284	Nageswari Upazila Health Complex	264	396	220	191	544	345	859	746	302	520	4,387		
285	Naikhongchhari Upazila Health Complex	740	921	797	737	684	963	162	346	2	22	5,374		
286	Nakla Upazila Health Complex	191	315	123	152	483	269	1,018	755	407	584	4,297		
287	Nalchithi Upazila Health Complex	233	211	134	133	496	311	717	604	575	530	3,944		
288	Nalatabari Upazila Health Complex	411	374	626	552	1,004	869	1,604	1,595	1,756	1,977	10,768		
289	Nandail Upazila Health Complex	489	944	187	213	946	382	1,323	776	472	565	6,297		
290	Nandigram Upazila Health Complex	122	175	105	146	281	197	878	553	527	582	3,566		
291	Nangolkot Upazila Health Complex	175	251	60	52	188	105	316	205	142	158	1,652		
292	Naniarchar Upazila Health Complex	5	10	33	38	173	206	124	133	15	16	753		
293	Naria Upazila Health Complex	255	200	226	247	561	494	346	513	403	415	3,660		
294	Nasirnagar Upazila Health Complex	934	1,744	174	235	504	284	1,080	603	390	454	6,402		
295	Nawabganj DP Upazila Health Complex	96	156	112	110	598	233	997	587	375	456	3,720		
296	Nawabganj Upazila Health Complex	262	323	237	235	639	402	980	720	681	741	5,220		
297	Nazirpur Upazila Health Complex	71	45	202	148	359	221	347	293	154	179	2,019		
298	Nesarabad Upazila Health Complex	725	1,011	274	257	1,467	387	1,921	713	833	865	8,453		
299	Niamatpur Upazila Health Complex	74	119	58	67	304	151	718	501	313	341	2,646		
300	Nikli Upazila Health Complex	48	38	57	69	101	31	134	79	104	125	786		
301	Paba Upazila Health Complex	49	85	117	106	224	176	743	531	497	628	3,156		

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male					
302	Paikgacha Upazila Health Complex	307	576	149	198	1,477	235	1,581	750	595	850	6,718				
303	Pakundia Upazila Health Complex	291	279	248	175	555	340	742	481	441	526	4,078				
304	Palash Upazila Health Complex	109	238	59	61	335	170	610	375	377	295	2,629				
305	Palashbari Upazila Health Complex	227	210	258	221	660	424	1,061	885	513	677	5,136				
306	Panchari Upazila Health Complex	209	293	61	75	240	115	398	230	159	170	1,950				
307	Panchbibi Upazila Health Complex	193	166	112	130	421	251	972	595	592	682	4,114				
308	Pangsha Upazila Health Complex	647	1,134	237	222	716	444	1,432	1,227	568	844	7,471				
309	Parbatipur Upazila Health Complex	294	488	205	192	633	324	1,297	767	745	729	5,674				
310	Patgram Upazila Health Complex	223	127	372	242	468	335	495	357	360	254	3,233				
311	Patharghata Upazila Health Complex	339	440	172	168	586	291	1,001	694	434	463	4,588				
312	Patiya Upazila Health Complex	60	37	41	32	73	42	61	52	43	40	481				
313	Patnitala Upazila Health Complex	257	412	142	148	788	253	1,346	883	539	600	5,368				
314	Pekua Upazila Health Complex	82	78	76	68	138	315	136	439	86	118	1,536				
315	Pirgacha Upazila Health Complex	153	268	115	112	395	234	861	553	264	450	3,405				
316	Pirganj RP Upazila Health Complex	778	221	1,402	1,176	1,461	1,461	1,545	1,502	1,477	1,518	12,541				
317	Pirganj TG Upazila Health Complex	103	106	201	229	1,102	372	1,765	1,061	690	758	6,387				
318	Porsha Upazila Health Complex	239	300	84	127	426	210	730	526	365	394	3,401				
319	Purbadhala Upazila Health Complex	616	908	248	244	973	457	1,486	888	646	700	7,166				
320	Puthia Upazila Health Complex	2	1	986	654	1,075	773	1,135	912	1,002	905	7,445				
321	Raiganj Upazila Health Complex	188	296	85	90	367	163	718	464	380	467	3,218				
322	Raipur Upazila Health Complex	213	437	162	164	1,122	393	1,203	625	377	377	5,073				
323	Raipura Upazila Health Complex	133	222	66	73	1,171	237	968	406	314	323	3,913				
324	Rajapur Upazila Health Complex	346	476	154	183	399	242	765	509	440	543	4,057				
325	Rajarhat Upazila Health Complex	94	28	197	110	374	289	453	377	500	339	2,761				
326	Rajasthali Upazila Health Complex	46	78	34	47	88	52	132	87	37	80	681				
327	Rajtampur Upazila Health Complex	70	43	152	129	223	197	345	272	184	224	1,839				
328	Rajnagar Upazila Health Complex	320	387	128	130	543	236	1,007	607	349	427	4,134				
329	Rajoir Upazila Health Complex	223	401	152	231	736	395	1,069	704	434	575	4,920				
330	Ramganj Upazila Health Complex	296	443	168	225	786	394	1,047	714	409	565	5,047				

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years						
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
331	Ramgarh Upazila Health Complex	7	8	7	8	7	8	12	15	6	7	7	85			
332	Ramgati Upazila Health Complex	845	1,311	114	146	360	174	415	299	144	202	202	4,010			
333	Rampal Upazila Health Complex	176	118	537	163	1,067	423	1,242	621	585	712	5,644				
334	Ramu Upazila Health Complex	669	1,017	188	215	1,110	305	1,342	633	446	436	6,361				
335	Rangunia Upazila Health Complex	142	180	141	131	143	120	136	120	134	112	1,359				
336	Raninagar Upazila Health Complex	149	236	9	42	480	234	990	753	401	398	3,692				
337	Ranisankhail Upazila Health Complex	76	115	249	237	1,276	676	1,980	1,093	832	597	7,131				
338	Rowangchhari Upazila Health Complex	39	65	54	57	80	57	140	112	51	77	732				
339	Rowmari Upazila Health Complex	361	453	285	258	588	374	703	516	414	461	4,413				
340	Ruma Upazila Health Complex	52	64	182	142	114	68	256	202	0	98	1,178				
341	Rupganj Upazila Health Complex	30	39	70	40	616	194	723	639	347	415	3,113				
342	Rupsha Upazila Health Complex	143	183	97	86	649	295	1,095	578	533	494	4,153				
343	Sadarpur Upazila Health Complex	32	59	35	53	329	216	814	620	328	340	2,826				
344	Sadullapur Upazila Health Complex	302	503	211	232	658	309	1,126	706	501	654	5,202				
345	Saharasthi Upazila Health Complex	251	417	182	182	782	288	1,107	594	502	537	4,842				
346	Saidpur Upazila Health Complex	18	4	18	18	18	18	18	18	9	18	157				
347	Sakhipur Upazila Health Complex	643	878	387	367	1,798	608	2,099	1,013	621	685	9,099				
348	Sandwip Upazila Health Complex	3	3	4	5	6	4	5	6	3	4	43				
349	Santhia Upazila Health Complex	283	65	344	201	586	338	1,035	639	1,646	1,036	6,173				
350	Sapahar Upazila Health Complex	178	169	169	194	570	335	999	1,081	428	620	4,743				
351	Sarail Upazila Health Complex	55	41	457	436	622	606	803	847	781	818	5,466				
352	Sarankhola Upazila Health Complex	266	360	168	172	623	351	740	603	450	607	4,340				
353	Sariakandi Upazila Health Complex	71	143	78	93	476	200	1,071	669	492	715	4,008				
354	Sarishabari Upazila Health Complex	373	327	909	535	1,936	621	1,621	709	664	725	8,420				
355	Sarsa Upazila Health Complex	167	197	383	226	955	544	1,419	1,099	840	794	6,624				
356	Satkania Upazila Health Complex	234	213	264	241	287	285	268	278	277	285	2,632				
357	Saturia Upazila Health Complex	78	152	170	174	532	299	1,255	809	699	841	5,009				
358	Savar Upazila Health Complex	43	27	108	92	335	200	664	331	189	175	2,164				
359	Senbag Upazila Health Complex	940	801	1,403	1,128	1,559	1,383	1,353	1,319	945	1,073	11,904				

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
360	Serajdikhan Upazila Health Complex	303	87	159	64	595	153	973	391	448	416	3,589		
361	Shaghata Upazila Health Complex	196	150	319	287	336	349	334	352	324	325	2,972		
362	Shahzadpur Upazila Health Complex	239	244	468	382	881	698	915	780	270	379	5,256		
363	Shailkupa Upazila Health Complex	781	1,227	173	175	452	346	3,400	1,337	590	810	9,291		
364	Shajahanpur Upazila Health Complex	4	5	22	20	70	39	346	156	375	358	1,395		
365	Shailkha Upazila Health Complex	162	280	325	385	368	376	365	368	458	377	3,464		
366	Sherpur Upazila Health Complex	241	369	141	153	631	335	1,476	1,234	635	827	6,042		
367	Shibalaya Upazila Health Complex	182	313	219	180	877	371	1,488	902	462	672	5,666		
368	Shibchar Upazila Health Complex	22	22	54	35	89	104	117	177	72	109	801		
369	Shibganj Bogra Upazila Health Complex	341	429	128	122	486	214	988	669	439	578	4,394		
370	Shibganj NG Upazila Health Complex	423	597	146	158	2,609	371	2,279	873	492	540	8,488		
371	Shibpur Upazila Health Complex	119	202	87	119	433	249	718	422	351	404	3,104		
372	Shyamnagar Upazila Health Complex	912	1,281	428	159	2,355	736	1,744	916	1,517	887	10,935		
373	Singair Upazila Health Complex	105	104	175	141	436	278	460	472	313	335	2,819		
374	Singra Upazila Health Complex	387	631	268	321	910	411	1,552	1,201	732	932	7,345		
375	Sitakunda Upazila Health Complex	439	398	644	421	581	600	612	568	625	620	5,508		
376	Sonagazi Upazila Health Complex	1,027	1,463	249	261	1,096	330	1,728	692	670	611	8,127		
377	Sonatala Upazila Health Complex	142	247	86	81	367	160	1,167	666	294	464	3,674		
378	Sreemangal Upazila Health Complex	434	452	388	502	1,338	784	3,016	1,458	1,304	683	10,359		
379	Sreenagar Upazila Health Complex	100	89	69	91	224	126	473	311	238	207	1,928		
380	Sreepur MG Upazila Health Complex	109	162	114	64	256	156	519	365	250	388	2,383		
381	Sreepur Upazila Health Complex	194	343	245	156	587	413	1,817	1,306	618	544	6,223		
382	Sribordi Upazila health Complex	58	84	57	75	223	154	542	497	244	336	2,270		
383	Subarnachar Upazila Health Complex	343	339	316	451	446	458	531	446	119	125	3,574		
384	Sujanagar Upazila Health Complex	597	580	493	461	1,282	1,051	1,732	1,433	916	920	9,465		
385	Sulla Upazila Health Complex	173	212	86	119	333	282	371	295	309	240	2,420		
386	Sundarganj Upazila Health Complex	0	3	0	0	4	0	0	1	2	0	10		
387	Taherpur Upazila Health Complex	38	22	233	251	344	374	343	379	287	332	2,603		
388	Tala Upazila Health Complex	26	44	54	43	189	82	293	221	140	181	1,273		

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male					
389	Tanore Upazila Health Complex	251	219	704	428	1,168	719	1,766	943	243	291	6,732				
390	Taraganj Upazila Health Complex	103	142	128	136	284	196	510	381	328	351	2,559				
391	Tarail Upazila Health Complex	471	712	246	273	649	390	986	733	487	593	5,540				
392	Tarash Upazila Health Complex	196	263	97	92	261	135	1,666	950	386	418	4,464				
393	Teknaf Upazila Health Complex	1,307	2,123	262	331	842	190	1,160	421	430	274	7,340				
394	Terakhada Upazila Health Complex	126	210	192	169	530	230	1,104	449	549	453	4,012				
395	Tetulia Upazila Health Complex	104	178	121	105	579	214	1,161	725	503	561	4,251				
396	Thanchi Upazila Health Complex	7	6	9	11	9	16	10	26	4	17	115				
397	Titas Upazila Health Complex	101	98	633	368	1,061	819	1,006	1,024	619	733	6,462				
398	Trishal Upazila Health Complex	56	71	109	87	635	290	850	700	398	499	3,695				
399	Tungibari Upazila Health Complex	249	244	302	160	1,006	295	1,303	692	573	603	5,427				
400	Tungipara Upazila Health Complex	394	469	395	449	897	486	846	540	258	542	5,276				
401	Ukhya Upazila Health Complex	1,090	1,692	356	431	1,321	707	2,100	1,257	827	812	10,593				
402	Ulipur Upazila Health Complex	286	91	657	550	651	663	584	577	429	472	4,960				
403	Ullapara Upazila Health Complex	439	479	148	173	140	50	799	617	489	450	3,784				
404	Wazirpur Upazila Health Complex	277	458	129	140	383	274	690	433	323	453	3,560				
405	Zanjira Upazila Health Complex	472	168	571	202	765	263	1,089	424	893	634	5,481				
406	Zakiganj Upazila Health Complex	903	1,659	199	266	878	285	1,114	496	538	611	6,949				
407	B. Baria District Hospital, B. Baria	2,256	3,562	508	753	3,195	1,989	4,898	3,990	2,469	3,263	26,883				
408	Bagerhat District Hospital, Bagerhat	768	1,182	736	757	4,574	2,176	1,626	1,039	1,636	1,211	15,705				
409	Bandarban District Hospital, Bandarban	613	968	220	324	919	692	1,327	1,212	429	795	7,499				
410	Barguna District Hospital, Barguna	803	1,165	659	685	1,753	934	3,412	2,229	1,182	1,651	14,473				
411	Barisal District Hospital, Barisal	103	135	292	301	332	326	595	590	338	336	3,348				
412	Bhola District Hospital, Bhola	2,637	3,138	2,576	2,948	3,488	3,302	3,667	4,049	2,555	3,115	31,475				
413	Chandpur District Hospital, Chandpur	1,340	2,015	540	529	1,986	836	2,778	1,603	1,663	1,686	14,976				
414	Chittagong General Hospital, Chittagong	997	1,232	847	780	1,482	783	1,941	1,212	1,107	1,171	11,552				
415	Chuadanga District Hospital, Chuadanga	2,440	3,834	1,084	1,145	3,775	1,648	6,246	5,907	3,398	4,463	33,940				
416	Comilla District Hospital, Comilla	788	1,239	257	385	1,018	647	1,718	1,402	764	1,148	9,366				
417	Cox's Bazar District Hospital, Cox's Bazar	4,761	5,750	3,354	3,589	6,091	4,277	8,717	6,468	5,038	4,643	52,688				

Sl. no.	Name of health facility	Age-group														Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male					
418	Dinaipur District Hospital, Dinaipur	1,645	1,433	1,893	1,786	1,903	1,923	1,785	1,830	1,765	1,736	1,769	17,699			
419	Faridpur General Hospital, Faridpur	1,576	1,585	1,782	1,493	2,078	1,866	2,891	2,384	1,416	1,499	18,570	18,570			
420	Feni District Hospital, Feni	1,046	1,444	479	554	1,818	752	2,034	1,291	987	1,252	11,657	11,657			
421	Gaibandha District Hospital, Gaibandha	1,977	2,928	701	966	2,849	1,304	4,439	3,046	1,660	2,604	22,474	22,474			
422	Gazipur District Hospital, Gazipur	1,246	1,804	684	576	3,049	1,195	4,172	2,483	1,410	1,563	18,182	18,182			
423	Gopalganj District Hospital, Gopalganj	2,449	2,171	2,896	2,728	3,024	2,949	3,211	3,102	3,260	3,292	29,082	29,082			
424	Habiganj District Hospital, Habiganj	4,763	7,046	631	648	6,381	4,138	8,043	5,935	3,442	3,858	44,885	44,885			
425	Jamalpur District Hospital, Jamalpur	4,695	6,763	1,469	2,110	6,122	2,286	9,809	4,606	5,517	6,690	50,067	50,067			
426	Jessore District Hospital, Jessore	2,735	2,103	1,081	598	6,740	5,270	10,010	7,765	11,508	8,812	56,622	56,622			
427	Jhalokati District Hospital, Jhalokati	573	797	584	666	1,894	796	3,437	1,651	1,386	1,611	13,395	13,395			
428	Jhenaidah District Hospital, Jhenaidah	2,114	2,977	825	1,098	5,144	1,443	7,500	4,035	2,839	4,247	32,222	32,222			
429	Joypurhat District Hospital, Joypurhat	1,204	1,012	1,376	1,271	4,561	4,263	5,042	4,608	2,593	2,448	28,378	28,378			
430	Khagrachhari District Hospital, Khagrachhari	976	1,611	305	372	2,016	693	2,797	1,577	788	1,374	12,509	12,509			
431	Khulna District Hospital, Khulna	143	261	255	382	1,163	648	1,943	1,257	1,185	1,605	8,842	8,842			
432	Kishoreganj District Hospital, Kishoreganj	2,230	4,013	962	1,154	3,285	1,650	4,877	3,370	2,465	3,569	27,575	27,575			
433	Kurigram District Hospital, Kurigram	2,992	3,666	865	914	3,014	1,468	5,054	3,417	2,056	3,401	26,847	26,847			
434	Kushtia District Hospital, Kushtia	3,814	5,444	1,781	2,144	5,953	3,161	10,424	7,956	7,144	8,729	56,550	56,550			
435	Lakshmipur District Hospital	2,829	4,062	586	735	2,731	1,242	3,566	2,370	1,619	2,186	21,926	21,926			
436	Lalmonirhat District Hospital, Lalmonirhat	1,047	1,093	1,280	1,143	1,449	1,456	1,180	1,227	847	1,058	11,780	11,780			
437	M.Bazar District Hospital, M.Bazar	3,559	5,714	1,392	1,628	7,457	2,547	7,664	4,688	3,485	4,244	42,378	42,378			
438	Madaripur District Hospital, Madaripur	1,304	1,344	1,240	1,350	2,974	2,517	3,078	2,642	3,228	2,773	22,450	22,450			
439	Magura District Hospital, Magura	2,652	4,677	1,044	1,152	3,744	1,749	5,870	4,000	2,677	3,954	31,519	31,519			
440	Manikganj District Hospital, Manikganj	285	314	195	241	860	460	1,080	724	845	872	5,876	5,876			
441	Meherpur District Hospital, Meherpur	1,361	1,084	1,473	1,407	1,631	1,518	1,722	1,633	1,736	1,679	15,244	15,244			
442	Mohammad Ali District Hospital, Bogra	1,236	1,970	919	1,004	2,197	2,101	3,511	2,456	1,581	2,088	19,063	19,063			
443	Munshiganj District Hospital, Munshiganj	819	1,114	555	522	2,284	888	3,436	2,190	1,774	2,079	15,661	15,661			
444	Nabaganj District Hospital, Nabaganj	1,651	1,823	1,318	1,367	1,393	1,412	2,496	2,786	1,460	1,514	17,220	17,220			
445	Naogaon District Hospital, Naogaon	1,659	1,575	1,573	1,510	3,282	2,566	4,116	3,649	4,253	3,685	27,868	27,868			
446	Narail District Hospital, Narail	1,632	2,311	706	753	2,282	795	3,642	1,844	1,613	2,007	17,585	17,585			

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Male	Female	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
447	Narayanganj 300 bed Hospital	369	334	447	424	2,581	1,174	982	668	428	368	7,775		
448	Narayanganj General (Victoria) Hospital (100bed)	1,877	1,638	1,616	1,338	2,356	2,152	2,492	2,481	1,099	1,268	18,317		
449	Narsingdi (100 bed) Zila Hospital, Narsingdi	844	1,384	257	372	1,320	579	2,074	1,457	1,002	1,402	10,691		
450	Narsingdi District Hospital, Narsingdi	1,107	1,054	793	897	348	394	1,080	1,012	761	786	8,232		
451	Natore District Hospital, Natore	1,865	2,592	1,308	1,331	2,902	1,672	4,332	3,390	2,766	3,221	25,379		
452	Netrokona District Hospital, Netrokona	1,921	3,265	615	637	5,525	1,450	7,592	3,230	2,426	2,697	29,358		
453	Nilphamari District Hospital, Nilphamari	1,630	2,624	754	632	3,592	1,188	5,696	3,035	1,869	2,092	23,112		
454	Pabna District Hospital, Pabna	7,029	9,954	7,124	7,139	8,120	7,216	8,267	8,235	6,933	6,887	76,904		
455	Panchagarh District Hospital, Panchagarh	1,144	963	1,232	1,356	2,444	1,218	3,327	2,636	1,586	1,630	17,536		
456	Patuakhali District Hospital, Patuakhali	1,348	2,039	372	421	1,659	668	2,416	1,267	1,005	1,329	12,524		
457	Projpur District Hospital, Projpur	1,715	1,995	682	552	2,361	847	3,448	1,724	1,625	1,850	16,799		
458	Rajbari District Hospital, Rajbari	1,312	1,673	921	804	3,487	1,874	4,857	2,762	2,299	2,828	22,817		
459	Rangamati District Hospital, Rangamati	1,112	1,558	383	486	1,794	841	2,536	1,679	967	1,360	12,716		
460	Satkhira District Hospital, Satkhira	2,188	1,966	1,199	1,184	1,340	665	3,672	2,882	4,673	3,654	23,423		
461	Shahid Shamsuddin District Hospital, Sylhet	0	1	34	20	250	107	795	379	460	500	2,546		
462	Shariatpur District Hospital, Shariatpur	1,538	1,886	1,185	1,037	2,784	1,682	3,387	2,560	2,361	2,495	20,915		
463	Sherpur District Hospital, Sherpur	2,786	4,174	927	1,487	3,170	1,746	6,029	4,560	2,726	4,140	31,745		
464	Sirajganj General Hospital	1,988	2,079	1,291	1,224	3,722	2,517	5,203	5,118	2,241	2,754	28,137		
465	Sunamganj District Hospital, Sunamganj	2,247	2,182	2,229	2,219	2,148	2,302	2,281	2,225	2,240	2,267	22,340		
466	Tangail District Hospital, Tangail	7,086	7,551	6,871	6,535	7,503	7,121	8,355	7,961	5,412	6,129	70,524		
467	Thakurgaon District Hospital, Thakurgaon	5,089	5,462	607	551	1,909	1,080	3,899	3,112	1,833	1,552	25,094		
468	100-bed Hospital, Saidpur, Nilphamari	536	896	496	411	2,460	1,001	3,449	2,033	1,665	1,844	14,791		
469	Kurmitola General Hospital (500 Bed)	897	1,279	818	953	2,224	1,682	4,495	3,674	2,448	2,710	21,180		
470	Mugda 500-bedded General Hospital	545	844	258	314	1,042	433	1,702	1,112	883	1,043	8,176		
471	Bangladesh Institute of Tropical and Infectious Diseases, Faujdarhat	25	32	58	116	236	264	651	761	380	302	2,825		
472	Chittagong Medical College Hospital, Chittagong	9,272	9,885	29,600	29,738	17,721	17,827	17,788	17,944	13,463	13,841	177,079		
473	Comilla Medical College Hospital, Comilla	1,765	1,902	2,927	2,635	6,436	5,544	10,203	8,864	1,970	2,289	44,535		
474	Dhaka Medical College Hospital, Dhaka	7,063	7,656	14,558	9,552	25,664	25,199	19,362	30,029	9,218	11,348	159,649		
475	Faridpur Medical College Hospital, Faridpur	1,512	1,987	1,308	687	6,123	3,326	9,384	7,059	6,759	10,086	48,231		

Sl. no.	Name of health facility	Age-group												Total
		0-4 year(s)		5-14 years		15-24 years		25-49 years		50+ years		Total		
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male			
476	Khulna Medical College Hospital, Khulna	2,640	3,644	3,219	2,913	5,603	3,758	7,979	6,485	8,789	8,953	53,983		
477	M Abdur Rahim Medical College Hospital, Dinajpur	1,672	1,744	1,134	1,117	5,254	5,240	6,795	6,629	6,616	6,647	42,848		
478	MAG Osmani Medical College Hospital, Sylhet	10,363	11,806	9,487	11,811	18,433	14,675	21,098	19,892	11,572	17,385	146,522		
479	Mymensingh Medical College Hospital, Mymensingh	15,088	15,711	19,453	19,308	20,790	20,659	21,030	21,060	19,746	21,403	194,248		
480	Rajshahi Medical College Hospital, Rajshahi	11,550	11,778	13,941	14,225	16,593	16,779	18,910	18,908	18,885	20,315	161,884		
481	Rangpur Medical College Hospital, Rangpur	4,811	5,137	4,499	4,634	4,877	4,849	5,353	5,274	7,949	6,172	53,555		
482	Shaheed Suhrawardy Medical College Hospital, Dhaka	2,736	2,726	9,444	3,824	13,592	12,642	16,395	14,622	17,931	16,877	110,789		
483	Shahid Ziaur Rahman Medical College Hospital, Bogra	2,798	4,793	1,224	2,173	6,398	7,554	12,815	14,351	6,490	8,124	66,720		
484	Sir Salimullah Medical College Hospital, Mitford, Dhaka	2,264	3,000	1,977	1,681	8,742	2,549	12,253	6,535	8,691	10,215	57,907		
485	National Institute of Cardiovascular Diseases, Dhaka	244	422	270	371	471	720	4,441	7,648	5,400	16,621	36,608		
486	National Institute of Diseases of the Chest and Hospital, Dhaka	44	124	130	142	591	915	1,104	3,607	1,721	6,181	14,559		
487	National Institute of Kidney Diseases & Urology, Dhaka	41	33	166	311	538	797	829	1,349	584	966	5,614		
488	National Institute of Mental Health and Research, Dhaka	0	0	52	44	466	746	541	1,007	108	168	3,132		
489	National Institute of Neuro Science (NINS)	250	365	289	394	342	447	1,049	1,322	1,782	2,764	9,004		
490	National Institute of Traumatology & Orthopaedic Rehabilitation, Dhaka (NITOR)	118	183	256	718	246	1,235	515	2,246	479	931	6,927		
491	Pabna Mental Hospital, Pabna	0	0	0	5	72	278	253	961	13	54	1,636		
	Total	324593	409711	288137	271386	621469	400840	849775	647445	487936	555541	4856833		

4. List of upazila health complexes with the number of beds, average length of stay, and bed-occupancy rate (2016)

Sl. no	Name of facility	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
1	Abhoynagar Upazila Health Complex	50	2	105.8
2	Adamdighi Upazila Health Complex	50	2.1	55.8
3	Aditmari Upazila Health Complex	31	2.9	62.5
4	Agailjhara Upazila Health Complex, Barisal	50	3.3	65.6
5	Akhaura Upazila Health Complex	31	2.2	91.3
6	Akkelpur Upazila Health Complex	50	2	65.4
7	Alamdanga Upazila Health Complex	31	2.8	135.1
8	Alfadanga Upazila Health Complex	50	3.6	63.8
9	Alikadam Upazila Health Complex	31	1.9	57.4
10	Amtali Upazila Health Complex	50	2.2	53.8
11	Anwara Upazila Health Complex	50	2.1	93.5
12	Araihazar Upazila Health Complex	31	3.3	82.6
13	Assasuni Upazila Health Complex	31	3.3	71.9
14	Atghoria Upazila Health Complex	31	2.4	86.4
15	Atpara Upazila Health Complex	50	4	43.3
16	Atrai Upazila Health Complex	31	1.9	66.4
17	Atwari Upazila Health Complex	50	2	77.2
18	Austagram Upazila Health Complex	50	2.1	42.4
19	Azmiriganj Upazila Health Complex	31	1.5	54.3
20	Babuganj Upazila Health Complex, Barisal	31	7.1	54.8
21	Badalgachi Upazila Health Complex	50	2.1	37.7
22	Badarganj Upazila Health Complex	31	1.9	146
23	Bagatipara Upazila Health Complex	31	2.3	68.7
24	Bagerpara Upazila Health Complex	50	2.7	86.2
25	Bagha Upazila Health Complex	50	3.1	87.7
26	Baghaichari Upazila Health Complex	31	2	35.5
27	Bagmara Upazila Health Complex	50	2.3	61.9
28	Bahubal Upazila Health Complex	31	2.5	144.5
29	Bajitpur Upazila Health Complex	31	1	103.5
30	Bakerganj Upazila Health Complex, Barisal	31	2.3	87.9
31	Bakshiganj Upazila Health Complex	31	2.4	118.4
32	Balaganj Upazila Health Complex	31	2.1	39.8
33	Baliadangi Upazila Health Complex	50	2.5	77.5
34	Baliakandi Upazila Health Complex	31	3.1	97.5
35	Bamna Upazila Health Complex	31	3.5	58.4
36	Banaripara Upazila Health Complex	31	1.8	85.4

Sl. no	Name of facility	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
37	Bancharampur Upazila Health Complex	31	2.3	69.5
38	Bandar Upazila Health Complex	31	6.3	61.6
39	Baniachong Upazila Health Complex	31	1.6	84.3
40	Banshkhali Upazila Health Complex	50	2.2	98.8
41	Baraigram Upazila Health Complex	31	1.9	51.8
42	Barhatta Upazila Health Complex	31	1.7	44.1
43	Barkol Upazila Health Complex	10	4	78.4
44	Barlekha Upazila Health Complex	31	1.3	73.7
45	Barura Upazila Health Complex	31	2.7	87.7
46	Basail Upazila Health Complex	31	2.3	49
47	Batiaghata Upazila Health Complex	31	4.9	97.7
48	Bauphal Upazila Health Complex	50	2.7	113.7
49	Beanibazar Upazila Health Complex	50	2.1	91.7
50	Begumganj Upazila Health Complex	31	3.1	57.6
51	Belabo Upazila Health Complex	31	2.9	97.2
52	Belaichari Upazila Health Complex	10	2.2	29.8
53	Belkuchi Upazila Health Complex	31	1.4	72.4
54	Bera Upazila Health Complex	50	1	63.3
55	Betagi Upazila Health Complex	50	4.4	63.1
56	Bhairab Upazila Health Complex	50	2.3	76.1
57	Bhaluka Upazila Health Complex	50	3	100.7
58	Bhandaria Upazila Health Complex	31	2.4	101.9
59	Bhanga Upazila Health Complex	50	2.6	89.8
60	Bhangura Upazila Health Complex	31	2.1	89.7
61	Bhedarganj Upazila Health Complex	31	2.7	133.7
62	Bheramara Upazila Health Complex	50	2.1	62.5
63	Bholahat Upazila Health Complex	31	2.5	92.3
64	Bhuapur Upazila Health Complex	50	2.2	82.1
65	Bhurungamari Upazila Health Complex	31	2.2	80.1
66	Birampur Upazila Health Complex	31	1.3	59
67	Birganj Upazila Health Complex	50	2.5	47.6
68	Birol Upazila Health Complex	50	3.7	45.3
69	Biswambarpur Upazila Health Complex	31	2.1	76.6
70	Biswanath Upazila Health Complex	31	6.8	77.6
71	Boalkhali Upazila Health Complex	50	1.5	84
72	Boalmari Upazila Health Complex	50	1.9	127.6
73	Bochaganj Upazila Health Complex	50	2.4	57.6
74	Boda Upazila Health Complex	50	1.8	43.7

Sl. no	Name of facility	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
75	Borhanuddin Upazila Health Complex	50	2.2	110.9
76	Brahmanpara Upazila Health Complex	31	2.6	77
77	Burichong Upazila Health Complex	31	2	98.1
78	Chauddagram Upazila Health Complex	50	1.7	74.2
79	Chakaria Upazila Health Complex, Cox's Bazar	50	2	152.9
80	Chandanaish Upazila Health Complex	31	2.5	79
81	Chandina Upazila Health Complex	31	1	112.7
82	Charbhadrason Upazila Health Complex	31	4.3	67.9
83	Charfession Upazila Health Complex	50	2	143.2
84	Charghat Upazila Health Complex	50	1.3	58.9
85	Chatkhil Upazila Health Complex	50	2.1	77.7
86	Chatmohar Upazila Health Complex	50	2.4	108.8
87	Chhagalnaya Upazila Health Complex	50	3	85.8
88	Chhatak Upazila Health Complex	31	1.3	58
89	Chilmari Upazila Health Complex	50	3.2	54.2
90	Chiribandar Upazila Health Complex	31	3.6	71.6
91	Chitalmari Upazila Health Complex	31	2.6	94.7
92	Chowgacha Upazila Health Complex	50	2.1	163.6
93	Chunarughat Upazila Health Complex	31	1.4	91
94	Companiganj SH Upazila Health Complex	31	2.3	57.1
95	Companiganj Upazila Health Complex	50	2.7	113.5
96	Dacope Upazila Health Complex	50	5.8	169.8
97	Daganbhuiya Upazila Health Complex	31	2.9	102.4
98	Damudya Upazila Health Complex	31	1.7	78.5
99	Damurhuda Upazila Health Complex	31	1.8	72.5
100	Dashmina Upazila Health Complex	50	2.2	48.4
101	Daudkandi Upazila Health Complex	31	2.2	99.6
102	Daulatkhan Upazila Health Complex	50	2	47.7
103	Daulatpur KT Upazila Health Complex	50	8.2	66.5
104	Daulatpur Upazila Health Complex	31	2.8	59.7
105	Debhata Upazila Health Complex	50	4.8	76.6
106	Debiganj Upazila Health Complex	50	2	72.3
107	Delduar Upazila Health Complex	31	2.9	56.3
108	Derai Upazila Health Complex	31	1.5	109.6
109	Dewanganj Upazila Health Complex	50	2.9	49.7
110	Dhamairhat Upazila Health Complex	50	2.7	48.1
111	Dhamrai Upazila Health Complex	50	2.5	83.3
112	Dharmapasha Upazila Health Complex	50	2	77.9

Sl. no	Name of facility	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
113	Dhubaura Upazila Health Complex	31	2.2	93.7
114	Dhunat Upazila Health Complex	50	3.3	77.5
115	Dhupchachia Upazila Health Complex	50	1.8	77.1
116	Dighalia Upazila Health Complex	31	3.1	76.9
117	Dighinala Upazila Health Complex	10	2	132
118	Dimla Upazila Health Complex	50	1.1	76.8
119	Doarabazar Upazila Health Complex	31	2	37.5
120	Dohar Upazila Health Complex	50	2.5	100.2
121	Domar Upazila Health Complex	50	1.9	82.1
122	Dumki Upazila Health Complex	31	1.8	34.1
123	Dumuria Upazila Health Complex	31	2	90.7
124	Durgapur Upazila Health Complex, Netrakona	50	1.9	68.3
125	Durgapur Upazila Health Complex, Rajshahi	50	1.2	54.1
126	Fakirhat Upazila Health Complex	31	2.1	173.2
127	Faridganj Upazila Health Complex	31	2.2	73.1
128	Faridpur Upazila Health Complex	50	3.1	80.1
129	Fatikchhari Upazila Health Complex	31	1.9	112.4
130	Fenchuganj Upazila Health Complex	31	2.1	78.9
131	Fulbari DP Upazila Health Complex	31	1.5	92.1
132	Fulbari KG Upazila Health Complex	31	4.9	102
133	Fulbaria Upazila Health Complex	31	2.3	81
134	Fulchari Upazila Health Complex	31	1.3	87.1
135	Fulgazi Health Complex, Feni	31	2.3	90.3
136	Fulpur Upazila Health Complex	50	2	87.9
137	Fultala Upazila Health Complex	50	2.6	101.3
138	Gabtali Upazila Health Complex	50	3.4	67.5
139	Galachipa Upazila Health Complex	50	3	107.5
140	Gangachara Upazila Health Complex	50	5.4	80.1
141	Gazaria Upazila Health Complex	50	2.2	71.4
142	Ghatail Upazila Health Complex	50	2.1	73.9
143	Ghior Upazila Health Complex	31	2.4	68.6
144	Ghoraghat Upazila Health Complex	31	3.1	74.2
145	Goalanda Upazila Health Complex	50	2.1	85.7
146	Gobindaganj Upazila Health Complex	50	1.6	93
147	Godagari Upazila Health Complex	31	2.3	65.4
148	Gofargaon Upazila Health Complex	50	2.1	80.2
149	Golapganj Upazila Health Complex	50	1.8	62.2
150	Gomastapur Upazila Health Complex	31	1.5	79.7

Sl. no	Name of facility	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
151	Gopalpur Upazila Health Complex	50	1.8	39.7
152	Goshairhat Upazila Health Complex	31	2.5	107.2
153	Gouripur Upazila Health Complex	31	1.9	98.6
154	Gournadi Upazila Health Complex	50	2.5	83.9
155	Gowainghat Upazila Health Complex	50	1.3	53.1
156	Gurudashpur Upazila Health Complex	50	2	57.7
157	Haimchar Upazila Health Complex	31	2.9	94.5
158	Hakimpur Upazila Health Complex	31	2.1	64
159	Haluaghat Upazila Health Complex	50	2.1	67.9
160	Harinakunda Upazila Health Complex	50	2	90
161	Haripur Upazila Health Complex	50	2.4	55.2
162	Harirampur Upazila Health Complex	31	2.7	49
163	Hathazari Upazila Health Complex	50	2	73.8
164	Hatibandha Upazila Health Complex	50	1.8	60.8
165	Hatiya Upazila Health Complex	50	2.3	88.1
166	Haziganj Upazila Health Complex	50	3.2	76.9
167	Hijla Upazila Health Complex	31	4.1	79.9
168	Homna Upazila Health Complex	50	1.5	84.4
169	Hossainpur Upazila Health Complex	50	1.8	87.9
170	Islampur Upazila Health Complex	50	2.1	52.1
171	Iswardi Upazila Health Complex	50	1.1	109.1
172	Iswarganj Upazila Health Complex	50	2	95.1
173	Itna Upazila Health Complex	31	2.1	50
174	Jagannathpur Upazila Health Complex	50	2.2	64.1
175	Jaldhaka Upazila Health Complex	50	2	113.9
176	Jamalganj Upazila Health Complex	31	2.2	86.5
177	Jhenaigati Upazila Health Complex	31	3.2	64.1
178	Jhikargacha Upazila Health Complex	50	2.5	56.3
179	Jibannagar Upazila Health Complex	39	1.6	131.5
180	Jaintapur Upazila Health Complex	31	1.6	93
181	Juraichari Upazila Health Complex	10	3.2	28.3
182	Kachua Upazila Health Complex, Bagerhat	50	4	78.7
183	Kachua Upazila Health Complex, Chandpur	50	2.3	57.8
184	Kahaloo Upazila Health Complex	50	3.5	80.2
185	Kaharol Upazila Health Complex	31	2.8	59.5
186	Kalai Upazila Health Complex	50	2.5	90.8
187	Kalapara Upazila Health Complex	50	2.3	111.8
188	Kalaroa Upazila Health Complex	50	3.1	71

Sl. no	Name of facility	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
189	Kalia Upazila Health Complex	50	2.3	64.2
190	Kaliakair Upazila Health Complex	31	2.1	108.9
191	Kaliganj Upazila Health Complex, Gazipur	50	2.5	75.7
192	Kaliganj Upazila Health Complex, Jhenaidah	50	2	101.5
193	Kaliganj Upazila Health Complex, Lalmonirhat	50	2.5	55.1
194	Kaliganj Upazila Health Complex, Satkhira	50	5.8	89.7
195	Kalihati Upazila Health Complex	50	2.2	75.8
196	Kalkini Upazila Health Complex	50	2.7	57.9
197	Kalmakanda Upazila Health Complex	50	2.4	68.5
198	Kamalganj Upazila Health Complex	31	1.3	96.8
199	Kamarkhanda Upazila Health Complex	31	2.8	58.6
200	Kamolnagar Upazila Health Complex	31	2.6	179.2
201	Kapasia Upazila Health Complex	50	2.6	73.9
202	Kaptai Upazila Health Complex	31	3	56.6
203	Karimganj Upazila Health Complex	50	1.8	63.1
204	Kashba Upazila Health Complex	31	1.4	63.1
205	Kashiani Upazila Health Complex	31	3.3	67.1
206	Kathalia Upazila Health Complex	31	4.9	95
207	Katiadi Upazila Health Complex	50	1.5	74.5
208	Kawkhali Upazila Health Complex, Pirojpur	31	4	72.9
209	Kawkhali Upazila Health Complex, Rangamati	10	2.2	78.1
210	Kazipur Upazila Health Complex	31	3.8	99.2
211	Kendua Upazila Health Complex	50	2	41
212	Keraniganj Upazila Health Complex	31	3.8	78.8
213	Keshabpur Upazila Health Complex	50	2.3	87.4
214	Khaliajuri Upazila Health Complex	31	3.9	60.9
215	Khansama Upazila Health Complex	31	2.3	103.4
216	Khetlal Upazila Health Complex	50	2.8	70
217	Khoksha Upazila Health Complex	50	2.1	78.5
218	Kishoreganj Upazila Health Complex	50	2.2	83.7
219	Kotalipara Upazila Health Complex	50	2.1	79.1
220	Kotchandpur Upazila Health Complex	50	2	93.4
221	Kownia Upazila Health Complex	31	2.5	94.2
222	Koyra Upazila Health Complex	31	2	104
223	Kulaura Upazila Health Complex	50	1	74.5
224	Kuliarchar Upazila Health Complex	31	2.2	57.7
225	Kumarkhali Upazila Health Complex	50	2.5	133.4
226	Kutubdia Upazila Health Complex	50	1.3	39.1

Sl. no	Name of facility	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
227	Lakhai Upazila Health Complex	31	2.7	58.7
228	Laksham Upazila Health Complex	50	1.9	49.2
229	Lakshmichhari Upazila Health Complex	31	3.7	27.9
230	Lalmohan Upazila Health Complex	50	2	94.7
231	Lalpur Upazila Health Complex	50	1.9	95
232	Lama Upazila Health Complex	31	3.2	90.5
233	Langadu Upazila Health Complex	31	2.6	45.7
234	Lohagara Upazila Health Complex, Narail	50	2.3	62.7
235	Lohagara Upazila Health Complex, Chittagong	50	1.8	72.8
236	Louhajang Upazila Health Complex	50	2.9	41.8
237	Madan Upazila Health Complex	50	3.7	88
238	Madarganj Upazila Health Complex	31	3	60.3
239	Madhabpur Upazila Health Complex	50	1.6	58.6
240	Manda Upazila Health Complex	50	2.2	73.1
241	Manikchari Upazila Health Complex	10	2	178.3
242	Manpura Upazila Health Complex	31	3	70
243	Mathbaria Upazila Health Complex	50	2	104.5
244	Matiranga Upazila Health Complex	31	2.1	47.4
245	Matlab (Daxin) Upazila Health Complex	50	2.5	91.4
246	Matlab (Uttar) Upazila Health Complex	31	1	92.6
247	Meghna Upazila Health Complex	31	7.7	41.7
248	Mehendiganj Upazila Health Complex	31	2.8	98.4
249	Melandaha Upazila Health Complex	49	2.9	46.9
250	Mirpur Upazila Health Complex	50	2.1	73.2
251	Mirzaganj Upazila Health Complex	50	3	56.7
252	Mirzapur Upazila Health Complex	31	3.8	69.3
253	Mithamoin Upazila Health Complex	31	3	52.8
254	Mithapukur Upazila Health Complex	50	2	95.6
255	Madhupur Upazila Health Complex	50	2.3	101.9
256	Mohadevpur Upazila Health Complex	50	1.4	50.8
257	Mohalchhari Upazila Health Complex	31	2	27.1
258	Mohammadpur Upazila Health Complex	31	2.3	114.6
259	Mohanganj Upazila Health Complex	50	2.2	79.4
260	Mohanpur Upazila Health Complex	50	2	52.7
261	Moheshkhali Upazila Health Complex	50	1	157.7
262	Moheshpur Upazila Health Complex	50	1.9	72.6
263	Mollahat Upazila Health Complex	31	2.2	88.1
264	Mongla Upazila Health Complex	50	3.1	92.5

Sl. no	Name of facility	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
265	Monirampur Upazila Health Complex	50	2.3	84.9
266	Monohardi Upazila Health Complex	50	3	68.9
267	Morrelganj Upazila Health Complex	31	3	126.9
268	Mujibnagar Upazila Health Complex	31	2.6	72.3
269	Mukshedpur Upazila Health Complex	31	2.2	163.8
270	Muktagacha Upazila Health Complex	31	1.2	83.6
271	Muladi Upazila Health Complex	50	4	97.5
272	Muradnagar Upazila Health Complex	50	2.2	94.5
273	Nabiganj Upazila Health Complex	31	1.3	73.2
274	Nabinagar Upazila Health Complex	31	1.6	72.6
275	Nachol Upazila Health Complex	31	2.7	80.4
276	Nagarkanda Upazila Health Complex	50	2.9	91.6
277	Nagarpur Upazila Health Complex	50	2.6	90.1
278	Nageswari Upazila Health Complex	31	2.6	96
279	Naikhongchhari Upazila Health Complex	31	1.9	47.3
280	Nakla Upazila Health Complex	50	2.8	67.2
281	Nalchithi Upazila Health Complex	50	2.8	50.6
282	Nalitabari Upazila Health Complex	50	3	76
283	Nandail Upazila Health Complex	50	2.9	99.1
284	Nandigram Upazila Health Complex	31	2.3	71.1
285	Nangolkot Upazila Health Complex	50	2	78.9
286	Naniarchar Upazila Health Complex	10	3.1	67
287	Naria Upazila Health Complex	31	2.3	84
288	Nasirnagar Upazila Health Complex	50	2.2	79.6
289	Nawabganj Upazila Health Complex, Dinajpur	31	3.6	71.6
290	Nawabganj Upazila Health Complex, Dhaka	50	2.8	96.5
291	Nazirpur Upazila Health Complex	31	3.2	83.2
292	Nesarabad Upazila Health Complex	50	2	91.1
293	Niamatpur Upazila Health Complex	50	2.9	52.1
294	Nikli Upazila Health Complex	31	1.9	63.2
295	Paba Upazila Health Complex	31	3	79.6
296	Paikgacha Upazila Health Complex	50	3	112.8
297	Pakundia Upazila Health Complex	50	2.6	50.8
298	Palash Upazila Health Complex	31	3	62.6
299	Palashbari Upazila Health Complex	31	1.9	93.3
300	Panchari Upazila Health Complex	10	1.6	75.2
301	Panchbibi Upazila Health Complex	50	2.7	61.4
302	Pangsha Upazila Health Complex	50	2.9	107.3

Sl. no	Name of facility	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
303	Parbatipur Upazila Health Complex	50	24	91.6
304	Parshuram Upazila Health Complex	50	2.2	85.9
305	Patgram Upazila Health Complex	31	2.8	101.9
306	Patharghata Upazila Health Complex	50	2.7	64.3
307	Patiya Upazila Health Complex	50	1.8	92.2
308	Patnitala Upazila Health Complex	50	2.1	62.1
309	Pirgacha Upazila Health Complex	31	3	84.6
310	Pirganj Upazila Health Complex, Rangpur	50	2.3	85
311	Pirganj Upazila Health Complex, Thakurgaon	50	1.4	74.3
312	Porsha Upazila Health Complex	31	4.6	82.8
313	Purbadhala Upazila Health Complex	50	3.1	119.1
314	Puthia Upazila Health Complex	50	1.7	64.7
315	Raiganj Upazila Health Complex	31	3.2	91.3
316	Raipur Upazila Health Complex	50	2.8	71.8
317	Raipura Upazila Health Complex	31	2.3	70
318	Rajapur Upazila Health Complex	50	3.6	79.4
319	Rajarhat Upazila Health Complex	31	3.9	97.7
320	Rajasthali Upazila Health Complex	10	2.5	47.1
321	Rajibpur Upazila Health Complex	31	3.7	63.4
322	Rajnaragar Upazila Health Complex	31	2	63.4
323	Rajoir Upazila Health Complex	50	2.3	97.9
324	Ramganj Upazila Health Complex	31	2.2	102.4
325	Ramgarh Upazila Health Complex	31	2.5	65.1
326	Ramgati Upazila Health Complex	31	1.9	61.5
327	Rampal Upazila Health Complex	50	3.2	103.7
328	Ramu Upazila Health Complex	31	2	117
329	Rangunia Upazila Health Complex	50	2	69.4
330	Raninagar Upazila Health Complex	31	2.8	93.1
331	Ranisankhail Upazila Health Complex	50	2.2	85.7
332	Rowangchari Upazila Health Complex	10	3.1	56.1
333	Rowmari Upazila Health Complex	31	1	88
334	Ruma Upazila Health Complex	10	1.8	58.8
335	Rupganj Upazila Health Complex	50	5.2	62
336	Rupsha Upazila Health Complex	31	3.2	115.4
337	Sadarapur Upazila Health Complex	50	2.3	33.8
338	Sadullapur Upazila Health Complex	31	2.4	109.8
339	Saharasthi Upazila Health Complex	50	2.3	70.8
340	Sakhipur Upazila Health Complex	50	2.5	104.5

Sl. no	Name of facility	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
341	Sandwip Upazila Health Complex	31	2	60.8
342	Santhia Upazila Health Complex	50	2	64.5
343	Sapahar Upazila Health Complex	50	2.3	71.7
344	Sarail Upazila Health Complex	50	1.8	64.1
345	Sarankhola Upazila Health Complex	31	2.7	121
346	Sariakandi Upazila Health Complex	50	4.7	99.1
347	Sarishabari Upazila Health Complex	50	1.9	96.1
348	Sarsa Upazila Health Complex	31	1.5	87.3
349	Satkania Upazila Health Complex	31	2.1	81.1
350	Saturia Upazila Health Complex	50	2.5	69.1
351	Savar Upazila Health Complex	50	4.3	90.9
352	Senbag Upazila Health Complex	50	2.4	64.1
353	Serajdikhan Upazila Health Complex	50	2.9	55.7
354	Shaghatta Upazila Health Complex	31	2.5	71.2
355	Shahzadpur Upazila Health Complex	31	1	73.3
356	Shailkupa Upazila Health Complex	50	2.2	111.9
357	Shajahanpur Upazila Health Complex	31	5.6	74.6
358	Shalikha Upazila Health Complex	31	2.2	66.4
359	Sherpur Upazila Health Complex	31	1.6	88.2
360	Shibalaya Upazila Health Complex	31	2	97.7
361	Shibchar Upazila Health Complex	50	2.6	74.1
362	Shibganj Bogra Upazila Health Complex	50	3	73.8
363	Shibganj NG Upazila Health Complex	50	2	73
364	Shibpur Upazila Health Complex	31	3	74.1
365	Shyamnagar Upazila Health Complex	50	2.8	174.3
366	Singair Upazila Health Complex	50	2.1	47.4
367	Singra Upazila Health Complex	31	1.4	88.2
368	Sitakunda Upazila Health Complex	50	2.1	73.2
369	Sonagazi Upazila Health Complex	31	1.8	130.9
370	Sonaimuri Upazila Health Complex	31	2.2	90.6
371	Sonargaon Upazila Health Complex	31	3.3	65.2
372	Sonatala Upazila Health Complex	50	2	57.5
373	Sreemangal Upazila Health Complex	50	1.6	70.1
374	Sreenagar Upazila Health Complex	50	4	53.6
375	Sreepur Upazila Health Complex, Magura	31	3.7	78.4
376	Sreepur Upazila Health Complex, Gazipur	31	2	102.1
377	Sribordi Upazila health Complex	50	3	61.3
378	Subarnachar Upazila Health Complex	31	2.8	71.1

Sl. no	Name of facility	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
379	Sujanagar Upazila Health Complex	51	2	91.1
380	Sulla Upazila Health Complex	31	2.3	49.8
381	Sundarganj Upazila Health Complex	31	2.8	89.7
382	Taherpur Upazila Health Complex	31	2.9	76.1
383	Tajumuddin Upazila Health Complex	31	3.7	76.1
384	Tanore Upazila Health Complex	31	2.2	108.6
385	Taraganj Upazila Health Complex	31	3	56.1
386	Tarail Upazila Health Complex	50	2.4	83
387	Tarash Upazila Health Complex	31	1.1	62.5
388	Teknaf Upazila Health Complex	50	1	48.7
389	Terakhada Upazila Health Complex	31	5.1	110.4
390	Tetulia Upazila Health Complex	50	2.6	60.3
391	Titas Upazila Health Complex	31	5.6	69.6
392	Trishal Upazila Health Complex	31	2.3	83.1
393	Tungibari Upazila Health Complex	50	2.2	62.9
394	Tungipara Upazila Health Complex	50	2.5	83.4
395	Ukhyia Upazila Health Complex	31	1.5	145.1
396	Ulipur Upazila Health Complex	50	2.5	86.5
397	Ullapara Upazila Health Complex	31	2.4	88.3
398	Wazirpur Upazila Health Complex	50	4	76.8
399	Zanjira Upazila Health Complex	31	1.8	88.4
400	Zakiganj Upazila Health Complex	31	1.5	96.4
	Total	16,072	2.58	80.05

5. List of district hospitals/general hospitals with the number of beds, average length of stay, and bed-occupancy rate (2016)

Sl. no.	Name of hospital	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
1	B. Baria District Hospital, B. Baria	250	4.5	97.5
2	Bagerhat District Hospital, Bagerhat	100	3.1	127.4
3	Bandarban District Hospital, Bandarban	100	3.8	69.8
4	Barguna District Hospital, Barguna	100	2.7	101.7
5	Barisal District Hospital, Barisal	100	3.9	51.3
6	Bhola District Hospital, Bhola	100	2.1	177.4
7	Chandpur District Hospital, Chandpur	250	3.1	99.6
8	Chittagong General Hospital, Chittagong	250	3.3	62
9	Chuadanga District Hospital, Chuadanga	100	2.1	189.8

Sl. no.	Name of hospital	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
10	Comilla District Hospital, Comilla	100	4	135
11	Cox's Bazar District Hospital, Cox's Bazar	250	2.9	169.9
12	Dinajpur District Hospital, Dinajpur	250	4.3	56.6
13	Faridpur General Hospital, Faridpur	100	2.6	120.7
14	Feni District Hospital, Feni	250	3	128.2
15	Gaibandha District Hospital, Gaibandha	100	2.1	128.6
16	Gazipur District Hospital, Gazipur (renamed as Shaheed Tajuddin Ahamed Medical College Hospital)	100	2.5	120.5
17	Gopalganj District Hospital, Gopalganj	250	3	99.1
18	Hobiganj District Hospital, Hobiganj	100	1.5	203.6
19	Jamalpur District Hospital, Jamalpur	250	3	142.5
20	Jessore District Hospital, Jessore	278	2.7	154.5
21	Jhalokati District Hospital, Jhalokati	100	3.3	114.7
22	Jhenaidah District Hospital, Jhenaidah	100	2.5	212.6
23	Joypurhat District Hospital, Joypurhat	150	3.4	130.3
24	Khagrachhari District Hospital, Khagrachhari	100	3	84.1
25	Khulna District Hospital, Khulna	150	4.7	74.7
26	Kishoreganj District Hospital, Kishoreganj	250	2.15	157.2
27	Kurigram District Hospital, Kurigram	100	2.6	176.1
28	Kushtia District Hospital, Kushtia	250	3.1	190.7
29	Lakshmipur District Hospital	100	3	178.7
30	Lalmonirhat District Hospital, Lalmonirhat	100	2.5	83.6
31	M. Bazar District Hospital, M. Bazar	250	2.3	103.1
32	Madaripur District Hospital, Madaripur	100	2.1	126.5
33	Magura District Hospital, Magura	100	3.1	261.7
34	Mohammad Ali District Hospital, Bogra	250	4.4	84.2
35	Munshiganj District Hospital, Munshiganj	100	2.9	110.7
36	Nababganj District Hospital, Nababganj	100	2.6	160.3
37	Naogaon District Hospital, Naogaon	100	2.1	152.4
38	Narail District Hospital, Narail	100	2.9	149.9
39	Narayanganj 300-bed Hospital	300	12	88.1
40	Narayanganj General (Victoria) Hospital (100-bed)	100	2.1	117.7
41	Narsingdi (100-bed) Zila Hospital, Narshingdi	100	4.3	128.7
42	Narsingdi District Hospital, Narsingdi	100	3.3	69.5
43	Natore District Hospital, Natore	100	1.9	147.5
44	Netrakona District Hospital, Netrakona	100	2.2	178.5
45	Nilphamari District Hospital, Nilphamari	100	2	191.3
46	Noakhali District Hospital, Noakhali	250		204.4

Sl. no.	Name of hospital	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
47	Pabna District Hospital, Pabna	250	2.8	159.4
48	Panchagarh District Hospital, Panchagarh	100	2.4	127.2
49	Patuakhali District Hospital, Patuakhali	250	4	152.3
50	Pirojpur District Hospital, Pirojpur	100	2.6	103
51	Rajbari District Hospital, Rajbari	100	2.2	130.5
52	Rangamati District Hospital, Rangamati	100	2.5	88.4
53	Satkhira District Hospital, Satkhira	100	3.8	212.1
54	Shariatpur District Hospital, Shariatpur	100	2.7	115.3
55	Sherpur District Hospital, Sherpur	100	2.7	236.2
56	Sirajganj General Hospital	250	6.1	96
57	Sunamganj District Hospital, Sunamganj	250	3	74.9
58	Tangail District Hospital, Tangail	250	2.4	183.5
59	Thakurgaon District Hospital, Thakurgaon	100	2.6	295
	Total	9,078	3.111	137.06

6. List of medical college hospitals with the number of beds, average length of stay, and bed-occupancy rate (2016)

Sl. no.	Name of medical college hospital	No. of sanctioned beds	Average length of stay	Bed-occupancy rate
1	Chittagong Medical College Hospital, Chittagong	1,313	4.9	158.9
2	Comilla Medical College Hospital, Comilla	500	4.7	145.2
4	Dhaka Medical College Hospital, Dhaka	2,600	7.7	129
5	Faridpur Medical College Hospital, Faridpur	500	3.8	104.6
6	Khulna Medical College Hospital, Khulna	500	6.1	139.1
7	M Abdur Rahim Medical College Hospital, Dinajpur	500	4.5	106.3
8	MAG Osmani Medical College Hospital, Sylhet	900	4.4	205.5
9	Mymensingh Medical College Hospital, Mymensingh	1,000	4.2	204.4
10	Rajshahi Medical College Hospital, Rajshahi	1,200	7	213.6
11	Rangpur Medical College Hospital, Rangpur	1,000	5.4	154.4
12	Shaheed Suhrawardy Medical College Hospital, Dhaka	850	6.4	129.7
13	Shahid Ziaur Rahman Medical College Hospital, Bogra	500	5	165.8
14	Sher-e-Bangla Medical College Hospital, Barisal	1,000	4.8	146.7
15	Sir Salimullah Medical College Hospital, Mitford, Dhaka	600	5.1	135
	Total	12,963	5.29	152.7

Table 4.9 Secondary and tertiary hospitals/health centers under the DGHS, with the number of functional beds

A. Hospitals

S.N	Type	Division	District	Name of the facilities	No. of functional beds
1	100-bed hospital	Rangpur	Nilphamari	Saidpur 100 Bed Hospital	100
2	Chest diseases hospitals	Barisal	Barisal	Barisal TB Segregation Hospital	20
3		Chittagong	Chittagong	Faujderhat TB Hospital	150
4		Chittagong	Brahmanbaria	Brahmanbaria TB Segregation Hospital	20
5		Chittagong	Feni	Feni TB Segregation Hospital	20
6		Dhaka	Dhaka	National TB Control Project, Shyamoli, Dhaka	250
7		Dhaka	Faridpur	Faridpur TB Segregation Hospital	20
8		Khulna	Khulna	Khulna TB Hospital	100
9		Khulna	Jessore	Jessore TB Segregation Hospital	20
10		Rajshahi	Rajshahi	Rajshahi TB Hospital	100
11		Rajshahi	Bogra	Bogra TB Segregation Hospital	20
12		Rajshahi	Pabna	Pabna TB Segregation Hospital	20
13		Rangpur	Rangpur	Rangpur TB Segregation Hospital	20
14		Sylhet	Sylhet	Sylhet TB Hospital	56
15		Dental college hospital	Dhaka	Dhaka	Dhaka Dental College Hospital	200
16	District and general hospitals	Barisal	Barguna	Barguna District Hospital	100
17		Barisal	Bhola	Bhola District Hospital	100
18		Barisal	Jhalokathi	Jhalokathi District Hospital	100
19		Barisal	Pirojpur	Pirojpur District Hospital	100
20		Barisal	Barisal	Barisal General Hospital	100
21		Barisal	Patuakhali	Patuakhali 250 bed Sadar Hospital	250
22		Chittagong	Bandarban	Bandarban District Hospital	100
23		Chittagong	Khagrachari	Khagrachari District Hospital	100
24		Chittagong	Lakshmipur	Lakshmipur District Hospital	100
25		Chittagong	Chandpur	Chandpur 250 bed General Hospital	250
26		Chittagong	Noakhali	Noakhali 250 bed General Hospital	250
27		Chittagong	Chittagong	Chittagong General Hospital	250
28		Chittagong	Comilla	Comilla General Hospital	100
29	Chittagong	Rangamati	Rangamati General Hospital	100	

S.N	Type	Division	District	Name of the facilities	No. of functional beds
30		Chittagong	Brahmanbaria	Brahmanbaria 250 bed District Sadar Hospital	250
31		Chittagong	Cox's Bazar	Cox's Bazar 250 bed District Sadar Hospital	250
32		Chittagong	Feni	Feni 250 bed District Sadar Hospital	250
33		Dhaka	Madaripur	Madaripur District Hospital	100
34		Dhaka	Manikganj	Manikganj District Hospital	250
35		Dhaka	Mushiganj	Munshiganj District Hospital	100
36		Dhaka	Narsingdi	Narsingdi District Hospital	100
37		Dhaka	Rajbari	Rajbari District Hospital	100
38		Dhaka	Shariatpur	Shariatpur District Hospital	100
39		Dhaka	Tangail	Tangail 250 bed District Hospital	250
40		Dhaka	Dhaka	500 bed Mukda General Hospital	500
41		Dhaka	Dhaka	500 bed Kurmitola General Hospital(Cantonment)	500
42		Dhaka	Faridpur	Faridpur General Hospital	100
43		Dhaka	Gazipur	Shaheed Ashsan Ullah Master 250 bed General Hospital	250
44		Dhaka	Narayanganj	Narayanganj General Hospital	100
45		Dhaka	Gopalganj	Gopalganj 250 bed District Sadar Hospital	250
46		Dhaka	Kishoreganj	Kishoreganj 250 bed District Sadar Hospital	250
47		Dhaka	Narayanganj	Narayanganj 300 bed Hospital	300
48		Dhaka	Narsingdi	Narsingdi 100 Bed Hospital	100
49		Khulna	Bagerhat	Bagerhat District Hospital	100
50		Khulna	Chaudanga	Chaudanga District Hospital	100
51		Khulna	Jhenaidah	Jhenaidah District Hospital	100
52		Khulna	Magura	Magura District Hospital	100
53		Khulna	Meherpur	Meherpur District Hospital	100
54		Khulna	Narail	Narail District Hospital	100
55		Khulna	Satkhira	Satkhira District Hospital	100
56		Khulna	Jessore	Jessore 250 bed General Hospital	250
57		Khulna	Kushtia	Kushtia 250 bed General Hospital	250
58		Khulna	Khulna	Khulna General Hospital	150
59		Mymensingh	Netrokona	Netrokona District Hospital	100
60		Mymensingh	Sherpur	Sherpur District Hospital	100
61		Mymensingh	Jalapur	Jalapur 250 bed General Hospital	250

S.N	Type	Division	District	Name of the facilities	No. of functional beds	
62		Rajshahi	Chapai Nawabganj	Chapai Nawabganj District Hospital	100	
63		Rajshahi	Joypurhat	Joypurhat District Hospital	100	
64		Rajshahi	Naogaon	Naogaon District Hospital	100	
65		Rajshahi	Natore	Natore District Hospital	100	
66		Rajshahi	Pabna	Pabna 250 bed General Hospital	250	
67		Rajshahi	Sirajganj	Sirajganj General Hospital	100	
68		Rajshahi	Bogra	Bogra 250 bed Mohammad Ali Hospital	250	
69		Rangpur	Gaibandha	Gaibandha District Hospital	100	
70		Rangpur	Kurigram	Kurigram District Hospital	100	
71		Rangpur	Lalmonirhat	Lalmonirhat District Hospital	100	
72		Rangpur	Nilphamari	Nilphamari District Hospital	100	
73		Rangpur	Panchagarh	Panchagarh District Hospital	100	
74		Rangpur	Thakurgaon	Thakurgaon District Hospital	100	
75		Rangpur	Dinajur	Dinajpur 250 bed General Hospital	250	
76		Sylhet	Habiganj	Habiganj District Hospital	100	
77		Sylhet	Sylhet	Sylhet Shahid Shamsuddin Hospital	100	
78		Sylhet	Moulvibazar	Moulvibazar 250 bed District Sadar Hospital	250	
79		Sylhet	Sunamganj	Sunamganj 250 bed District Sadar Hospital	250	
80		Hospital of alternative medicine	Dhaka	Dhaka	Govt. Homeopathic Degree College & Hospital, Mirpur, Dhaka	100
81			Dhaka	Dhaka	Govt. Unani & Ayurvedic College & Hospital, Mirpur, Dhaka	100
82		Infectious disease hospitals	Chittagong	Chittagong	Chittagong Infectious Disease Hospital	20
83			Dhaka	Dhaka	Dhaka Infectious Disease Hospital	100
84			Khulna	Khulna	Khulna Infectious Disease Hospital	20
85			Rajshahi	Rajshahi	Rajshahi Infectious Disease Hospital	20
86			Sylhet	Sylhet	Sylhet Infectious Disease Hospital	20
87	Leprosy hospitals	Dhaka	Dhaka	Dhaka Leprosy Hospital	30	
88		Rangpur	Nilphamari	Nilphamari Leprosy Hospital	20	
89		Sylhet	Sylhet	Sylhet Leprosy Hospital	80	

S.N	Type	Division	District	Name of the facilities	No. of functional beds
90		Chittagong	Chittagong	Chittagong Medical College Hospital	1,313
91		Chittagong	Comilla	Comilla Medical College Hospital	500
92		Dhaka	Dhaka	Dhaka Medical College Hospital	2600
93		Dhaka	Gazipur	Shaheed tajuddin Ahmed medical college hospital	250
94		Dhaka	Faridpur	Faridpur Medical College Hospital	500
95		Khulna	Khulna	Khulna Medical College Hospital	500
96		Rangpur	Dinajur	M Abdur Rahim Medical College Hospital	500
97		Sylhet	Sylhet	MAG Osmani Medical College Hospital	900
98		Mymensingh	Mymensingh	Mymensingh Medical College Hospital	1000
99		Rajshahi	Rajshahi	Rajshahi Medical College Hospital	1200
100		Rangpur	Rangpur	Rangpur Medical College Hospital	1000
101		Dhaka	Dhaka	Shaheed Suhrawardy Medical College Hospital	850
102		Rajshahi	Bogra	Shahid Ziaur Rahman Medical College Hospital	500
103		Barisal	Barisal	Sher-e-Bangla Medical College Hospital	1000
104		Dhaka	Dhaka	Sir Salimullah Medical College Hospital, Mitford	600
105		Dhaka	Dhaka	Tangail Medical College Hospital	250
106	Medical college hospitals	Khulna	Khulna	Sathikhira Medical college Hospital	250
107	Specialized hospital	Khulna	Khulna	Shaheed Sheikh Abu Naser Specialized Hospital	250
108		Rajshahi	Pabna	Pabna Mental Hospital	500
109		Dhaka	Dhaka	100 bed Burn Unit at DMCH	100
110		Dhaka	Gopalganj	Sheikh Fazilatunnesa Mujib Eye Hospital and Training Institute	100
111		Dhaka	Dhaka	National Asthma Center	100
112	Specialty postgraduate institute and hospital	Dhaka	Dhaka	National Institute of Cancer Research and Hospital (NICR&H)	150
113		Dhaka	Dhaka	National Institute of Cardiovascular Disease (NICVD)	414
114		Dhaka	Dhaka	National Institute of Chest Disease and Hospital (NIDCH)	670

S.N	Type	Division	District	Name of the facilities	No. of functional beds
115		Dhaka	Dhaka	National Institute of Kidney Disease and Urology (NIKD&U)	150
116		Dhaka	Dhaka	National Institute of Mental Health & Research (NIMH&R)	200
117		Dhaka	Dhaka	National Institute of Neuro Science	300
118		Dhaka	Dhaka	National Institute of Ophthalmology (NIO)	250
119		Dhaka	Dhaka	National Institute of Traumatology and Rehabilitation (NITOR)	500
120		Dhaka	Dhaka	National Institute of ENT in Dhaka	100
121		Dhaka	Dhaka	Institute of Child and Mother Health, Matuail	200
122		Chittagong	Chittagong	Bangladesh Institute of Tropical and Infectious Disease, Fougdarhat	100
123		Trauma center	Chittagong	Comilla	Sahidnagar Trauma Center, Daudkandi	20
124	Chittagong		Feni	Feni Trauma Center	20
125	Dhaka		Faridpur	Faridpur Trauma Center	20
126	Mymensingh		Mymensingh	Bhaluka Trauma Center, Mymensingh	20
127	Rajshahi		Sirajganj	Sirajganj Trauma Center	20
	Total (hospital)				29,973
	B. Other facilities (Specialized health centers)				
	Type				No. of functional beds
128	Other specialized health centers	Chittagong	Chittagong	Chittagong Skin & Hygiene Treatment Center	N/A
129		Dhaka	Gazipur	Tejgaon health complex	N/A
130		Dhaka	Dhaka	National Center for Control of Rheumatic Fever & Heart Disease	N/A

ANNEX TO CHAPTER 5

1. Division-wise distribution of health workforce under the DGHS in August 2017

Division	Class		Sanctioned post	Filled-up post	Vacant post
Barisal	Class I	Doctors	1597	636	961
		Non-doctors	24	9	15
	Class II		1859	1277	582
	Class III		4063	3064	999
	Class IV		1770	1193	577
	Total		9313	6179	3134
Chittagong	Class I	Doctors	3979	2498	1481
		Non-doctors	55	23	32
	Class II		4394	3087	1307
	Class III		10002	6788	3214
	Class IV		3999	2740	1259
	Total		22429	15136	7293
Dhaka	Class I	Doctors	8806	11963	-3157
		Non-doctors	225	109	116
	Class II		9198	6992	2206
	Class III		12602	9013	3589
	Class IV		7958	5330	2628
	Total		38789	33407	5382
Khulna	Class I	Doctors	2416	1121	1295
		Non-doctors	40	19	21
	Class II		2916	2349	567
	Class III		5876	4025	1851
	Class IV		2383	1544	839
	Total		13631	9058	4573
Mymensingh	Class I	Doctors	1588	912	676
		Non-doctors	22	5	17
	Class II		1389	1020	369
	Class III		3948	3131	817
	Class IV		1582	1080	502
	Total		8529	6148	2381
Rajshahi	Class I	Doctors	2826	1604	1222
		Non-doctors	48	20	28
	Class II		3972	2619	1353
	Class III		6684	5465	1219
	Class IV		3574	2321	1253
	Total		17104	12029	5075

Rangpur	Class I	Doctors	2348	1078	1270
		Non-doctors	33	9	24
	Class II		2702	1777	925
	Class III		5507	4136	1371
	Class IV		2359	1785	574
	Total		12949	8785	4164
Sylhet	Class I	Doctors	1430	790	640
		Non-doctors	19	7	12
	Class II		1692	839	853
	Class III		3622	2407	1215
	Class IV		1652	1092	560
	Total		8415	5139	3276

2. Number of doctors who obtained FCPS degree in different subjects from July 2015 to July 2016

Sl. no.	Subject	July 2015	Jan. 2016	July 2016
1	Anesthesiology	6	5	5
2	Biochemistry	0	0	0
3	Conservative dentistry and endodontics	1	3	2
4	Oral and maxillofacial surgery	6	2	8
5	Dermatology and venereology	7	6	1
6	Family medicine	0	0	0
7	Gastroenterology	1	0	0
8	Urology	0	1	2
9	Hematology	0	5	0
10	Histopathology	0	1	0
11	Medicine	26	27	64
12	Microbiology	0	0	1
13	Obstetrics and gynecology	67	32	69
14	Ophthalmology	6	19	8
15	Otolaryngology	9	10	5
16	Paediatrics	19	22	67
17	Physical medicine and rehabilitation	3	2	5
18	Prosthodontics	3	2	1
19	Psychiatry	1	1	2
20	Radiology and imaging	3	3	5
21	Radiotherapy	3	2	5
22	Surgery	24	13	47
23	Neonatology	0	0	0
24	Pediatric surgery	0	0	0
25	Cardiology	3	0	1
26	Orthodontics and dentofacial orthopedics	4	6	2

Sl. no.	Subject	July 2015	Jan. 2016	July 2016
27	Thoracic surgery	1	0	0
28	Pulmonology	0	0	0
29	Plastic and reconstructive surgery	1	1	4
30	Nephrology	0	0	0
31	Pediatric nephrology	0	1	0
32	Neurology	0	0	0
33	Neuro-surgery	1	0	2
34	Orthopedic surgery	0	0	2
35	Rheumatology	1	0	0
36	Neonatology	0	0	0
37	Infectious disease and tropical medicine	0	0	0
38	Cardiovascular surgery	2	0	2
39	Pediatric hematology and oncology	1	0	0
40	Endocrinology and metabolism	0	0	1
41	Feto-maternal medicine	0	0	1
42	Pediatric neurology and development	0	0	1
43	Transfusion medicine	0	0	0
44	Gynecological oncology	0	1	0
45	Hepatology	0	0	0
46	Pediatric gastroenterology and nutrition	0	0	0
47	Reproductive endocrinology and infertility	0	0	0
	Total	199	165	313

3. Number of doctors who obtained MCPS degree in different subjects from July 2015 to July 2016

Sl. no.	Subject	July 2015	January 2016	July 2016
1	Anesthesiology	2	3	2
2	Clinical pathology	7	3	6
3	Dental surgery	0	2	3
4	Dermatology and venereology	3	5	2
5	Family medicine	1	1	0
6	Forensic medicine	3	2	0
7	Medicine	15	6	10
8	Obstetrics and gynecology	5	5	11
9	Ophthalmology	1	4	8
10	Otolaryngology	3	3	1
11	Pediatrics	0	3	0
12	Psychiatry	3	1	1

Sl. no.	Subject	July 2015	January 2016	July 2016
13	Radiology and imaging	5	3	3
14	Radiotherapy	2	0	1
15	Surgery	3	4	3
16	Transfusion medicine	0	0	0
	Total	53	45	51

4. List of private medical colleges with the number of seats for medical students(August 2017)

Sl. no.	Code no.	Name of college	Seats	Estd.
01	41	Bangladesh Medical College, Road # 14/A, Dhanmondi, Dhaka	120	1985
02	42	Samaj Vittic Medical College, Mirza Nagar, Via Savar Cant. Dhaka	150	1989
03	43	Institute of Applied Health Sciences, Foy's lake, Chittagong	75	1990
04	44	Jahurul Islam Medical College, Bajitpur, Kishoreganj	100	1992
05	45	Medical College for Women & Hospital, Rd # 8-9, Sector 1, Uttara Model Town, Dhaka	90	1992
06	46	ZH Sikder Women Medical College, Monica Estate, Western Dhanmonid, Dhaka	100	1992
07	47	Dhaka National Medical College, 53/1 Jonson Road, Dhaka	130	1995
08	48	Community Based Medical College, 161 K.B.Ismail Road, Mymensingh	125	1995
09	49	Jalalabad Ragib-Rabeya Medical College, Pathan tola, Sylhet.	175	1996
10	50	Shaheed Monsur Ali Medical College, Plot # 26, Rd# 10, St-11, Uttara, Dhaka	130	1998
11	51	North East Medical College, South Surma, Sylhet	120	1998
12	52	Holy Family Red Creasent Mekical College, 1 Eskaton Garden Road, Dhaka	130	2000
13	53	International Medical College, Sataish Bazar, Gushuli, Tongi, Gazipur	120	2000
14	54	North Bengal Medical College, JC Road, Dhanbandi, Sirajganj	85	2000
15	55	East West Medical College, Aichi Nagar, JBCS Sarani, Horirampur Turag, Dhaka	120	2000
16	56	Kumudini Medical College, Mirjapur, Tangail.	110	2001
17	57	Tairunnessa Medical College, Targas, Kunia, Board Bazar, Gazipur	100	2001
18	58	Ibrahim Medical College, Ibrahim Sarani, Segun Bagicha, Dhaka	110	2002
19	59	BGC Trust Medical College, Kanchan Nagar, Chandanaish, Chittagong	125	2002
20	60	Shahabuddin Medical College, Rd # 113/A, Plot # 12, Gulshan Model Town, Dhaka	90	2003
21	61	Enam Medical College, Parbatinagar, Thana Road, Savar, Dhaka	140	2003
22	62	Islami Bank Medical College, Nowdapara, Safura, Airport Road, Rajshahi	75	2004

Sl. no.	Code no.	Name of college	Seats	Estd.
23	63	IBN Sina Medical College, H # 48, Rd # 9/A, Satmoshjid Rd, Dhanmondi, Dhaka	65	2005
24	64	Central Medical College, Comilla Tower, Laksham Road, Comilla	75	2005
25	65	Eastern Medical College, Race Course, Comilla	105	2005
26	66	Khawja Eunos Medical College, Enayetpur, Sirajganj	95	2005
27	67	Chottogram, Ma O Shishu Medical College, Agrabad, Chottogram 4100.	110	2006
28	68	Sylhet Women Medical College, Mirbox Tolla, Sylhet	100	2006
29	69	Nightingale Medical College, Ashulia, Sarker Market, Dhaka	85	2006
30	70	Southern Medical College, Mozaffor Ahmed Chy Rd., East Nasirabad, Chittagong	95	2006
31	71	Northern International Medical College, House # 81, Rd # 7, Dhanmondi, Dhaka	75	2006
32	72	Uttara Adhunik Medical College, Uttara, Dhaka	90	2007
33	73	Delta Medical College, Mirpur, Dhaka	90	2008
34	74	Ad-Din Women Medical College, 2 Bora Moghbazar, Dhaka	90	2008
35	75	Dhaka Community Medical College, 190/Boro Moghbazar, Dhaka	100	2008
36	76	TMSS Medical College. Bogra	130	2008
37	77	Anwer Khan Modern Medical College, Dhanmandi, Dhaka	120	2008
38	78	Prime Medical College, Pirjabad, Rangpur	125	2008
39	79	Rangpur Community Hospital Medical College, Medical East Gate, Rangpur	125	2008
40	80	Northern Private Medical College, Dhap, Chiklibata Burirhat Road, Rangpur	70	2006
41	81	Faridpur Diabetic Association Medical College, Ziltuli, Faridpur	80	2010
42	82	Green Life Medical College, Dhanmondi, Dhaka	100	2010
43	83	Popular Medical College, Road-02, House-25, Dhanmondi, Dhaka	90	2010
44	84	MH Shamarita Medical College, 113 Tejgaon, Love Road, Dhaka 1208	110	2011
45	85	Moonno Medical College, Manikganj	80	2011
46	86	Central International Medical College, 2/1 Ring Road, Shyamoli, Dhaka	90	2011
47	87	Dr. Sirajul Islam Medical College, Moghbazar, Dhaka	95	2011
48	88	Marks Medical College, Mirpur, Dhaka	70	2011
49	89	Moinamoti Medical College, Baro Para, Comilla	100	2012
50	90	Ad-Din-Sakina Medical College, 15, Rail Road, Jessore	65	2012
51	91	Gazi Medical College, Sonadanga, Khulna	90	2012
52	92	Barind Medical College, Sher sha Road, Laksumpur, Rajshahi	100	2012
53	93	City Medical College, Eta Hata, Block-B, Tangail Road, Gazipur	80	2012

Sl. no.	Code no.	Name of college	Seats	Estd.
54	94	Ashiyon Medical College, Unicom Plaza (4-6th Floor), 42/2 North Avenue, Gulshan 2,	50	2013
55	95	Aichi Medical College, Plot-35&37, Sector 8, Abdullahpur, Uttara, Dhaka	50	2013
56	96	Bashundhara Ad-Din Medical College, Keraniganj, Dhaka	50	2013
57	97	Abdul Hamid Medical College & Hospital, Kishoreganj	60	2014-15
58	98	Bikrampur Bhuiyan's Medical College & Hospital, Srinagar, Munshiganj	50	2014-15
59	99	Universal Medical College, 74G/75 Peacock Square, New Airport Road, Dhaka	50	2014-15
60	100	Care Medical College, 2/1-A Iqbal Road, Mohammadpur, Dhaka	50	2014-15
61	101	Brahmanbaria Medical College, Ghatara, Brahmanbaria	50	2014-15
62	102	Parkview Medical College & Hospital, Taltola, Telihao, VIP Road, Sylhet	50	2014-15
63	103	Marine City Medical College & Hospital, Chittagong	50	2014-15
64	104	Shah Makhdum Medical College, Boalia, Rajshahi	50	2014-15
65	105	Chattagram International Medical College (CIMC), Chattgram	50	2015
66	106	US Bangla Medical College, Rupganj, Narayanganj	40	2015
67	107	Ad-Din Akij Medical College, Khulna	50	2015
68	108	Monoara Sikder Medical College, Shariatpur	40	2015
69	109	Khulna City Medical College, Khulna	50	2016
Total			6186	

5. List of government dental colleges and dental units in government medical colleges (February 2017)

Sl. no.	Name of College	Estd	Seats
01	Dhaka Dental College, Mirpur 14, Dhaka	1960	97
02	Chittagong Medical College Dental Unit, Chittagong	1990	60
03	Rajshahi Medical College Dental Unit, Rajshahi	1989	59
05	Shahid Shuhrawardy Medical College Dental Unit, Dhaka	2012	56
04	Sir Salimullah Medical College Dental Unit, Dhaka	2012	52
06	Mymensingh Medical College Dental Unit, Mymensingh	2012	52
07	MAG Osmani Medical College Dental Unit, Sylhet	2012	52
08	Sher-e-Bangla Medical College Dental Unit, Barishal	2012	52
09	Rangpur Medical College Dental Unit, Rangpur	2012	52
		Total	532

6. List of private dental colleges and dental units in private medical colleges (May 2017)

Sl. no.	Code No	Name of college	Seats	Estd.
01	21	Pioneer Dental College, 111, Malibag, DIT Road, Dhaka	100	1995
02	22	City Dental College, 1085/1 Malibag Chowdhury Para, Dhaka	75	1998
03	23	University Dental College, 120 Siddeshwari Outer Circular Road. Century Arcade, Moghbazar, Dhaka	100	1996
04	24	Bangladesh Dental College, Road # 14/A, Dhanmondi, Dhaka	70	1997
05	25	Sapporo Dental College, Plot-12, Road 1/B, Sector 9, Uttara Model Town, Dhaka	90	2000
06	26	Rangpur Dental College, Medical East Gate, Rangpur	100	2008
07	27	Chittagong International Dental College, 206/1 Hazi Chandmia Road, Samsherpara, Chandgaon, Chittagong	65	2005
08	28	Samaj Vittik Dental College, Miza Nagar, Via Savar Cant, Dhaka	50	1997
09	29	Marks Dental College, A/3 Main Road, Section 14, Mirpur, Dhaka	50	2008
10	30	Update Dental College, 162 Atish Dipankar Road, West Mugda, Dhaka	85	2008
11	31	Udayan Dental College, Rajshahi	50	2008
12	32	Shaphana Dental College, Boro Moghbazar, Dhaka	95	2010
13	33	Mandi Dental College, 295/jha/14 Sikdar Real Estate, Dhanmondi (West), P.S: Hazaribag,, Dhaka 1209	65	2010
14	34	MH Shamarita Medical College Dental Unit. 13/A & 89/1 Panthapath, Dhaka 1215	45	2010
15	35	Kumudini Medical College, Dental Unit, Mirjapur, Tangail	40	2011
16	36	Holy Family Red Creasent Mekical College, 1 Eskaton Garden Road, Dhaka	30	2012
17	36	TMSS- Bogra Medical College Dental Unit	50	2011
18	37	Communityt Medical College Dental Unit, 190 Boro Moghbazar, Dhaka	30	2012
19	38	Green Life Medical College Dental Unit, 32 Bir Uttam K.M. Shafiullah Sarak, Green Road, Dhaka 1205	30	2013
20	39	Community Based Medical College Dental Unit, Mymensingh	30	2014
21	40	Dhaka National Medical College Dental Unit, 53/1 Jonson Road, Dhaka	20	2014
22	41	Delta Medical College Dental Unit, Mirpur, Dhaka	25	2014
23	42	Islami Bank Medical College Dental Unit, Rajshahi	20	2014
24	43	Al-Amin Dental College, Sylhet	40	2015
25	44	Ibrahim Medical College Dental Unit, Shahbag, Dhaka	30	2015
		Total	1,385	

7. List of government MATS with number of seats (2017)

Sl. no.	Division	Name of MATS	No. of seats
1	Chittagong	Medical Assistant Training School, Comilla	52
		Medical Assistant Training School, Noakhali	102
2	Dhaka	Medical Assistant Training School, Faridpur	52
		Medical Assistant Training School, Tangail	102
3	Khulna	Medical Assistant Training School, Bagerhat	152
		Medical Assistant Training School, Kushtia	102
		Medical Assistant Training School, Jhenaidah	52
4	Rajshahi	Medical Assistant Training School, Sirajganj	102
		Total seats	716

8. List of private MATS with number of seats (2017)

Sl. no.	Division	Name of institution	Year of establishment	No. of seats
1	Chittagong	Comilla Medical Assistant Training School, Ramalla Road, Thakurpara, Comilla	2008	75
2		Chittagong Medical Assistant Training School, Haliashohor, Chittagong	2011	100
3		Noakhali Paramedical Centre (NPCMATS), Maijdibazar, Noakhali, Chittagong	2011	90
4		Moynamoti Medical Assistant Training School, Comilla	2011	50
5		Maizdi Medical Assistant Training School, House Teest, Maizdi Court, Noakhali	2013	50
6		Impulse Medical Assistant Training School (MATS), Jahan Plaza, Maizdi Court, Sadar, Noakhali	2015	50
7		Cox's Bazar Institute of Medical Technology and MATS, Fuwad Al Khatib Hospital Bhuban, Central Jame Masjid Road, Cox's Bazar	2015	50
8		Institute of Health Technology MATS, Chittagong City Corporation, 180 Kabi Nazrul Islam Road, Firingi Bazar, Chittagong	2015	50
9		Life Care Medical Institute, Feni Road, Choumohoni, Begumganj, Noakhali	2013	50
10		Compact Medical Institute, Hazari Road, Feni	2013	50
11		PBM Medical Assistant Training Institute, Khagrachhari Sadar, Khagrachhari	2013	50
12		Brahmanbaria Medical Assistant Training School, Shimraikandi Power House, Brahmanbaria	2011	60
13		Chandpur Medical Assistant Training School, Chandpur	2010	50

SI. no.	Division	Name of institution	Year of establishment	No. of seats	
14	Mymensingh	Rumdo Medical Assistant Training School, Mymensingh	2008	100	
15		Taleb Ali Medical Assistant Training School, Natun Bazar, Mymensingh	2010	75	
16		Dr. Halima Khatun Medical Assistant Training School, Mymensingh	2011	75	
17		Jashimuddin Medical Assistant Training School, New College Road, Jamalpur	2011	60	
18		JMATS & Medical Institute, College Road, Jamalpur	2013	50	
19		Scholar Medical Assistant Training School (MATS), Maskanda, Mymensingh	2012	50	
20		Resource Medical Assistant Training School, Sadar Hospital Road, Netrakona	2013	75	
21		British Bangla Medical Assistant Training School, 23 Rambabu Road, Mymensingh	2013	50	
22		Ideal Medical Assistant Training School, Fulpur, Mymensingh	2014	60	
23		Desh Medical Assistant Training School, Sarda Gosh Road, Mymensingh	2012	50	
24		RIMT Medical Assistant Training School, Boundary Road, Mymensingh	2015	50	
25		Akanda Medical Assistant Training School, Charpara, Mymensingh	2013	50	
26		Dhaka	AR Medical Assistant Training School, Mohammadpur, Dhaka	2009	75
27			Advance Medical Assistant Training School, Green Road, Dhaka	2008	100
28			Bangladesh Medical Assistant Training School, Uttara, Dhaka	2009	50
29	Dhaka Medical Assistant Training School, Mirpur, Dhaka		2008	120	
30	New Pilot Medical Assistant Training School, Akur Takur, Tangail		2009	50	
31	Rabeya Medical Assistant Training School, Savar, Dhaka		2008	75	
32	Rampura Medical Assistant Training School, Rampura, Dhaka		2008	80	
33	SAIC Institute of Medical Assistant, Mirpur, Dhaka		2008	80	
34	SIMT Medical Assistant Training School, Sewden Plaza, Mirpur, Dhaka		2008	100	
35	Spark SIMT Medical Assistant Training Academy, Mirpur, Dhaka		2008	60	
36	SPKS Medical Assistant Training School, Mirpur, Dhaka		2008	100	

Sl. no.	Division	Name of institution	Year of establishment	No. of seats
37		Sumona Medical Assistant Training School, Sadarghat, Dhaka	2008	60
38		The Medical Assistant Training School, House no.820, Begum Rokeya Soroni, Mirpur, Dhaka	2008	175
39		Trauma Medical Assistant Training School, Shewrapara, Mirpur, Dhaka	2010	200
40		Non-government Institute of Medical Assistants, Faridpur	2010	100
41		Eden Medical Assistant Training School, Mirpur, Dhaka	2010	70
42		Tangail Medical Assistant Training School, Sabalia, Tangail	2010	180
43		Shyamoli Medical Assistant Training School, Mohammadpur, Dhaka	2010	200
44		Rajbari Community Medical Assistant Training School, Rajbari	2010	100
45		National Institute of Medical and Dental Technologist & MATS, Mohammadpur, Dhaka	2010	50
46		Prince Medical Assistant Training School, Savar, Dhaka	2010	75
47		Khondoker Abdul Mannan Medical Institute (MATS), Dahuya, Kishoreganj	2011	50
48		Shahid SA Memorial Medical Institute, Uttara, Dhaka	2011	50
49		Paramedical Institute & MATS, Bhuapur, Tangail	2011	50
50		Institute of Medical Technology & MATS, Jalkuri, Siddirganj, Narayanganj	2011	50
51		Fortune Institute of Medical Technology, Kamarpara Road, Turag Thana, Dhaka	2011	50
52		New Turag General Hospital Private Limited, Station Road, Tongi, Gazipur	2011	50
53		Rajdhani Medical Assistant Training School (Rajdhani MATS), Mirpur, Dhaka	2011	100
54		Dhaka Microlab Institute of Medical Technology (IST, MATS)	2011	50
55		Nidasa Medical Assistant Training School, 20/24 North South Road, Siddik Bazar, Dhaka	2011	50
56		Bibartan Medical Assistant Training School, Mirpur, Dhaka	2012	30
57		Matri Sheba Medical Training School (MATS), Kona Bari, Gazipur	2012	25
58		Ideal Medical Training Institute & Health Technology, Mymensingh Road, Sabalia, Tangail	2011	50

Sl. no.	Division	Name of institution	Year of establishment	No. of seats
59		Jefri Institute of Health Science Technology & MATS, Dhanmondi, Rayer Bazar, Dhaka	2013	50
60		D-Medical Assistant Training School, Mirpur Bus Stand, Dhaka	2013	50
61		Athik Medical Assistant Training School, Brammondi, Narsingdi	2013	50
62		Ma Medical Assistant Training School, Itahat, Gazipur	2013	50
63		Shyamoli Ideal Medical Assistant Training School, 1/3 Shatmosjid Road, Mohammadpur, Dhaka	2014	75
64		The Radium MATS & Technology Institute, Ghior, Manikganj	2014	50
65		Uttara Adhunik Medical Institute MATS, Abdullahpur, Uttara, Dhaka	2014	50
66		Dhaka City Medical Assistant Training School, Swamibag, Dhaka	2014	50
67		Bangladesh Cancer Society Medical Assistant Training School, Darussalam, Mirpur, Dhaka	2014	50
68		Momotaj Medical Assistant Training School, Dhanshiri, Dhamrai, Dhaka	2014	50
69		Byte Medical Assistant Training School & Health Technology Institute, Uthuli, Shibaloy, Manikganj	2014	50
70		Central Institute of Health Science & MATS , Mirpur 14, Dhaka	2015	50
71		Eastern Medical Assistant Training School, Tikatuli, Dhaka	2015	50
72		Ekhlas Uddin Khan Medical Assistant Training School, Ghior, Manikganj	2015	50
73		Gurukul Medical Assistant Training School, Dhokhin Bhabanipur, Rajbari	2015	50
74		Tongi Medical Assistant Training School, Road no. 10, Sector 11, Uttara, Dhaka	2015	50
75		Firoza Medical Assistant Training School, Sholakia, Kishoreganj	2012	50
76		Jamuna Medical Assistant Training School, Tangail Sadar	2012	75
77		Ghatail Medical Assistant Training School, Ghatail, Tangail	2011	80
78		Shahjalal Rahmatullah Medical Institute of MATS, Main Road, Tangail	2012	100
79		Jenemic Medical Assistant Training School, Paikandi, Gopalganj	2012	50

Sl. no.	Division	Name of institution	Year of establishment	No. of seats
80		Confidance Medical Institute (CME), Manikganj, Manikganj Bus Stand, Manikganj	2013	50
81		Alta Medical Assistant Training School, (UMATS), Shewrapara, Mirpur, Dhaka	2015	50
82		Army Medical Core Centre and School, Ghatail Senanibas, Tangail	2013	650
83		Lake View Medical Assistant Training School, (Lake View-MATS), Tepakhola Bus Stand, Lakpara Faridpur	2015	50
84		Community Medical Assistant Training Institute, Barisal Road, Kazi Furniture Bhabon, Faridpur	2012	50
85		IACIB Medical Assistant Training School, Jinjira, Savar, Dhaka	2013	50
86		MR Medical Assistant Training School, Lalmatia, Block-A, Dhaka	2013	50
87		GTN Medical Assistant Training School and Medical Technology, Sadar Hospital Road, Gazipur	2013	50
88		Pacific Medical Assistant Training School, New Bus Stand, Dewla, Tangail	2015	50
89		Uniq Medical Assistant Training School, Shakhipur, Tangail	2012	50
90		Trust Medical Assistant Training School, Kalabagan, Dhanmondi, Dhaka	2015	50
91		Shah Faridpur Medical Assistant Training School, Faridpur	2013	50
92		Savar Central Medical Assistant Training Institute, Talbag, Savar, Dhaka	2015	50
93		Institute of Medical and Dental Technology and MATS, Milk Vita Road, Dewla, Tangail	2015	50
94		Ittehad Medical Assistant Training School, Rokeya Soroni, Mirpur, Dhaka	2015	50
95		Institute of Health and Development Item Welfare Organization Medical Assistant Training School, Shayamoli, Dhaka	2012	50
96		Arrow Medical Institute, BF, Dhaka Cantonment	2015	50
97		Polly Shastho Medical Assistant Trainnig School, Manikganj Sadar, Manikganj	2011	50
98		Mawna Medical Assistant Training School, Mawna Chowrasta Sreepur, Gazipur, Dhaka	2013	50
99		Professor <i>Sohrab</i> Uddin Institute of Medical Assistant, Sablia, Tangail	2010	140

SI. no.	Division	Name of institution	Year of establishment	No. of seats
100	Rajshahi	Rajshahi Medical Assistant Training School, Chandipur, Rajshahi	2008	100
101		Health Ways Medical Assistant Training School, Santahar, Bogra	2008	60
102		SIMT Medical Assistant Training School, Kanojgari, Bogra	2008	75
103		TMSS Medical Assistant Training School, Thangamara, Bogra	2008	150
104		Udayan Medical Assistant Training School, Rajshahi	2008	180
105		Ideal Medical Technology, Sherpur Road Colony, Bogra	2011	80
106		People's International Medical Assistant Training School, Airport Sarak, Sapura, Rajshahi	2011	50
107		Galaxy Medical Assistant Training School, Sapura, Rajshahi	2011	100
108		Pabna Community Medical Assistant Training School, Bishnupur, Sathia, Pabna	2011	50
109		Bangladesh Institute of Medical Technology, Hatem Kha, Boalia, Rajshahi	2011	50
110		PIMT Medical Assistant Training School, (MATS), Bogra	2011	100
111		Natore Medical Assistant Training School, Natore	2011	50
112		ASI Medical Assistant Training School, (MATS), Sirajganj	2011	50
113		NDC Medical Assistant Training School, (NDC MATS), Paharpur Road, Joypurhat	2010	75
114		Pabna Medical Assistant Training School, Mujib Palace, PP Road, Singa, Pabna	2011	50
115		Joypurhat Medical Assistant Training School, Joypurhat	2010	50
116		Radium Medical Training School, Talainari, Boalia, Rajshahi	2012	50
117		Sirajganj Modern Medical Training School, Coddarmore, Sirajganj	2012	25
118		Medical Training Institute (MTI), Bonarpara, Saghata, Gaibandha	2015	50
119		Hamida Medical Training School, Masterpara, Gaibandha	2015	50
120		TS Medical Assistant Training School, New Bagura Road, Sirajganj	2011	80
121		Morning Glory Medical Assistant Training School, Shibtola, Chapainowabganj	2011	80

Sl. no.	Division	Name of institution	Year of establishment	No. of seats
122		SDDL Medical Assistant Training School (MATS), Jamilnagar, Bogra	2011	80
123		Prime Medical Assistant Training School, Talaimari, Rajshahi	2011	100
124		State Medical Assistant Training Academy, Mill Gate Sarak, Kaliganj, Jhenaidah	2010	50
125		Uttar Banga Medical Assistant Training School (Uttar Banga MATS), Tinmatha Railgate, Bogra	2011	50
126		Mohasthan Medical Assistant Training School, Gokul, Bogra	2013	100
127		Rubi Medical Assistant Training School, Naogoan	2013	50
128		Doctor's Medical Assistant Training School, Rajpara, Rajshahi	2013	50
129		DAF Bangladesh Medical Training School, Rajshahi	2013	50
130		Mahi Sawar Medical Assistant Training School, Bogra	2013	50
131		Afford Medical Assistant Training School, Boalia, Rajshahi	2013	75
132		Bright Nation Medical Assistant Training School, Pabna Sadar, Pabna	2013	75
133		Padma Medical Assistant Training School, Kashiadanga, Rajshahi	2013	50
134		BIMT Medical Assistant Training School, Shajahanpur, Bogra	2013	75
135		Combined Medical Assistant Training School, Bogra	2013	50
136		Peerless Medical Assistant Training School, Puthia, Rajshahi	2013	50
137		Amena Medical Assistant Training School, Talaimari Bazar, Rajshahi	2013	50
138		NIAK Medical Assistant Training School, College Road, Shibbari, Bogra	2014	75
139		Royal Medical Assistant Training School, Sherpur Road, Bogra	2014	75
140		Jonoseba Medical Assistant Training School, Arambag, Chapainowabganj	2014	50
141		SM Institute of Medical Technology & MATS, Sirajganj	2014	50
142		Saleha Medical Assistant Training School, Boro Bongram, Rajshahi	2014	50
143		Labcare Medical Assistant Training School, Munshi Meherullah Sorok, Sirajganj	2014	50
144		Al Amana Medical Assistant Training School, Loskorpor, Pabna	2014	50

SI. no.	Division	Name of institution	Year of establishment	No. of seats
145		The Green Medical Assistant Training School, Dhaka Bypass Road, Pabna	2015	50
146		Pabna Ideal Medical Assistant Training School, Salgaria, Pabna	2015	50
147		Asian Medical Assistant Training School, Sreerampur, Sherpur, Bogra	2015	50
148		Neuron Medical Assistant Training School, Boalia, Rajshahi	2015	50
149		Ullapara Medical Assistant Training School, Ullapara, Sirajganj	2012	25
150	Khulna	Khulna Medical Assistant Training School (MATS), Khulna	2011	120
151		Dr. Liza Raton Medical Assistant Training School, 42/1 NS Road, Kushtia	2011	75
152		JM Medical Assistant Training School, Jessore Sadar, Rail Road, Jessore	2015	50
153		The Modern Medical Assistant Training School, (Modern MATS), Khanjahan Ali Road, Khulna	2015	50
154		Alo Medical Assistant Training School, Alobhaban, NS Road, Kushtia	2011	80
155		Chuadanga Ideal Medical Assistant Training School (MATS), Alamdanga Road, Poura College Para, Chuadanga	2012	25
156		Unilab Medical Assistant Training School, Magura	2011	100
157		Brick Medical Assistant Training School, Daulatpur, Kushtia	2014	50
158		Dr. Taher-Dr. Lina Medical Assistant Training School, College Road, Meherpur	2014	50
159		Rupsha Medical Assistant Training School, Fulbari Gate, Khulna	2014	50
160		Oxford Medical Assistant Training School, Stadium More, Magura	2014	50
161		Bushra Medical Assistant Training School, Khulna Road More, Satkhira	2014	50
162		Lalon Sha Medical Assistant Training School and Medical Technology Institute, Chewriya, Kumarkhali, Kushtia	2014	50
163		Muktijudda Tofazzal Hossen Medical Assistantr Training School, Hamdaha, Jhenaidah	2015	50
164		Dr. Mezbah-ur-Rahman Medical Assistant Training School, Jessore	2015	50
165		Padma Gorai Medical Assistant Training School, Kushtia Sadar, Kushtia	2015	50
166	Specialised Medical Assistant Training School, Hospital Road, Kushtia	2015	50	

Sl. no.	Division	Name of institution	Year of establishment	No. of seats
167	Barisal	Morning Sun Assistant Training School (MATS), Nobogram Road, Barisal	2012	25
168		Disabled Welfare Foundation Medical Assistant Training School, Sabujbagh, Patuakhali	2012	50
169		Jomjom Medical Assistant Training School, Kazipara, C&B Road, Barisal	2012	100
170		DWF Medical Assistant Training School, Himel Cottage, C&B Road, Barisal	2014	50
171		Advanced Institute of Medical & Dental Technology with MATS, Chandmari, Barisal	2014	50
172		Progressive Medical Assistant Training School, Bauphol, Patuakhali	2014	50
173		Rangpur	Rangpur Medical Assistant Training School, Islambag, RK Road, Rangpur	2010	105
174	Anwara Medical Assistant Training School, Mirzapur, Suihari, Dinajpur		2011	100
175	Medi Help Medical Assistant Training School, Kamal Kachna, Sadar Rangpur		2015	50
176	Reliable Medical Assistant Training School, Rangpur		2011	75
177	Bengal Medical Assistant Training School, (Bengal MATS), Sahi Monjil, Katkipara, RK Road, Rangpur		2015	50
178	Alfa Medical Assistant Training School, RK Road, Rangpur Sadar		2015	50
179	Renin Medical Assistant Training School, Lalmonirhat		2011	50
180	Central Medical Assistant Training School (MATS), Rangpur		2011	50
181	Green International Medical Assistant Training School, Rangpur		2008	150
182	Prime Medical Assistant Training School, Rangpur		2008	105
183	Rangpur CT MATS, Kelabond C O Bazar, Rangpur		2012	100
184	Birampur Medical Assistant Training School, Birampur, Dinajpur		2012	50
185	Janata Medical Assistant Training School, Nageshwori, Kurigram		2011	50
186	Creative Medical Assistant Training School, Hospital Road, Nilphamari		2012	50
187	North Bengal Medical Assistant Training School, College Road, Gaibandha		2013	50

Sl. no.	Division	Name of institution	Year of establishment	No. of seats
188		Oriental Medical Assistant Training School, Gobindanagar, Thakurgoan	2013	50
189		Institute of Health Technology, MATS, Paharpur, Dinajpur	2013	50
190		Green Life Medical Assistant Training School, New Town, Dinajpur	2014	50
191		Monowara Anowara Medical Assistant Training School, Halpara, Thakurgoan	2015	50
192		Abul Hossain Medical Assistant Training School, Suihari, Dinajpur	2015	50
193		Panchagarh Medical Assistant Training School, Tetulia, Panchagarh	2015	50
194	Sylhet	Jalalabad Medical Assistant Training School, Sylhet	2008	50
195		Maulvibazar Medical Assistant Training School, Kushumbag, Maulvibazar	2008	80
196		Sylhet Medical Assistant Training School, South Surma, Sylhet	2008	70
197		RTM International Medical Assistant Training School, Sylhet Sadar	2013	100
198		Symantik Medical Assistant Training School, Shahjalal Upashohor, Sylhet	2013	100
199		National Lifecare Medical Assistant Training School, Upashohor Road, Sonarpar, Sylhet	2013	50
200		Asha Medical Assistant Training School, Chunarughat, Habiganj	2013	50
Total				13540

9. List of government and private institutes offering different types of nursing degrees in Bangladesh with available number of seats (June 2017)

Government Institutions (N=54) offering Diploma in Nursing Science and Midwifery courses: (43with 2,580 seats) and Diploma in Midwifery (38 with 975 seats)						
Sl. no.	Name of institution	Seats (Nursing)	Seats (midwifery)	Sl. no.	Name of institution	Seats (Midwifery)
1	Nursing Institute, SMMC and MITFORT Hospital	80	25	28	Nursing Institute, Sadar Hospital, Bagerhat	50
2	Nursing Institute, Medical College Hospital, Comilla	80	25	29	Nursing Institute, Sadar Hospital, Kurigram	50
3	Nursing Institute, Medical College Hospital, Faridpur	80	25	30	Nursing Institute, Sadar Hospital, Bhola	50
4	Nursing Institute, Medical College Hospital, Khulna	80	25	31	Nursing Institute, Sadar Hospital, Netrokona	50
5	Nursing Institute, Mohammad Ali Hospital, Bogra	80	25	32	Nursing Institute, Medical College Hospital, Gopalganj	50
6	Nursing Institute, Medical College Hospital, Dinajpur	80	-	33	Nursing Institute, Sadar Hospital, Madaripur	50
7	Nursing Institute, Medical College Hospital, Noakhali	80	25	34	Nursing Institute, Sadar Hospital, Pirojpur	50
8	Nursing Institute, General Hospital, Pabna	80	25	35	Nursing Institute, Sadar Hospital, Barguna	50
9	Nursing Institute, General Hospital, Jessore	80	25	36	Nursing Institute, Sadar Hospital, Naogaon	50
10	Nursing Institute, General Hospital, Kushtia	80	25	37	Nursing Institute, Sadar Hospital, Nilphamari	50
11	Nursing Institute, General Hospital, Tangail	80	25	38	Nursing Institute, Sadar Hospital, Panchagarh	50
12	Nursing Institute, General Hospital, Rangamati	80	25	39	Nursing Institute, Sadar Hospital, Kishoreganj	50
13	Nursing Institute, General Hospital, Patuakhali	80	25	40	Nursing Institute, Sadar Hospital, Jamalpur	50
14	Nursing Institute, General Hospital, Sirajganj	50	25	41	Nursing Institute, Sadar Hospital, Jhainaidah	50
15	Nursing Institute, Sadar Hospital, Munshiganj	50	25	42	Nursing Institute, Sadar Hospital, Chandpur	50
16	Nursing Institute, Sadar Hospital, Chuadanga	50	-	43	Nursing Institute, Sadar Hospital, Habiganj	50
17	Nursing Institute, Sadar Hospital, Magura	50	-	44	Dhaka Nursing College, Medical College Hospital, Dhaka	-
18	Nursing Institute, Sadar Hospital, Cox's Bazar	50	-	45	Mymensingh Nursing College, Medical College Hospital, Mymensingh	-
19	Nursing Institute, Sadar Hospital, Moulavi Bazar	50	25	46	Rajshahi Nursing College, Medical College Hospital, Rajshahi	-
20	Nursing Institute, Sadar Hospital, Sherpur	50	-	47	Chittagong Nursing College, Medical College Hospital, Chittagong	-
21	Nursing Institute, Sadar Hospital, Chapainowabganj	50	-	48	Rangpur Nursing College, Medical College Hospital, Rangpur	-
22	Nursing Institute, Sadar Hospital, Jaypurhat	50	25	49	Sylhet Nursing College, MAG Usmani Medical College Hospital, Sylhet	-
23	Nursing Institute, Sadar Hospital, Shatkhira	70	25	50	Barisal Nursing College, Shere-Bangla Medical College Hospital, Barisal	-
24	Nursing Institute, Sadar Hospital, Thakurgaon	50	-	51	Faujdarhat Nursing College, Chittagong	-
25	Nursing Institute, Sadar Hospital, Rajbari	50	25	52	Bogra Nursing College, Shahid Ziaur Rahman Medical College Hospital, Bogra	-
26	Nursing Institute, Sadar Hospital, B. Baria	70	-	53	Manikganj Nursing College, Manikganj	-
27	Nursing Institute, Sadar Hospital, Feni	50	25	54	Dinajpur Nursing College, near Medical College Hospital, Dinajpur	-

Private Institutions for Diploma in Nursing Science and Midwifery: (140 with 7,035 seats)					
Sl. no.	Name of institution	Seats	Sl. no.	Name of institution	Seats
1.	Holy Family Red Crescent Nursing College, Ino. Eskatan Road, Dhaka	50	71	Uttara Modern Nursing Institute, Uttara, Dhaka	50
2.	Kumudini Nursing Institute, Mirzapur, Tangail	70	72	Royal Nursing Institute, Gazipur, Dhaka	70
3.	Jahurul Islam Nursing College, Bazitpur, Kishoreganj	60	73	Shahjalal Nursing Institute, Tangail	50
4.	Nursing Institute, Cristian Mission Hospital, Rajshahi	50	74	Madhupur Nursing Institute, Madhupur, Tangail	50
5.	Nursing Institute, Cristian Hospital, Chandragohna	30	75	Prof. Shohrab Uddin Nursing Institute, Tangail	40
6	CRP Nursing College, Chapain, Savar, Dhaka	50	76	Bir Muktiyuddha S A Salam Nursing Institute, Faridpur	30
7.	Khaja Younus Ali Nursing College, Enayetpur, Sirajganj	60	77	Rezwan Molla Nursing Institute	40
8.	Diabetic Association Nursing Institute, Jhiltuli, Faridpur	40	78	Abdullah Nursing Institute, South Bhoabanipur, Rajbari	40
9.	Shahid Mansur Ali Nursing Institute, Uttara, Dhaka	70	79	Art Nursing College, Paduar Bazar, South sadar, Comilla	70
10	Fatema Nursing Institute, Ad-Deen Hospital, Moghbazar, Dhaka	50	80	Dr. Zubaeda Khatun Nursing Institute, Karigar para, Rajshahi	40
11	Ad-deen Nursing Institute, 15 Rail Road, Jessore	30	81	Mahi Sawar Nursing Institute, Bogra	40
12	Safina Nursing Institute, Ad-deen Hospital, Thana Para, Kusthia	30	82	SDDL Nursing Institute, Bogra	50
13	Islami Bank Nursing College, Naodapara, Rajshahi	120	83	SFI-Foundation Nursing Institute, Malatinagar, Bogra	30
14	North-East Nursing College, South Surma, Sylhet	120	84	Bright Nation Nursing Institute, Mansurabad Residential Project-1, Pabna	40
15	Nursing Institute, Child Health Foundation Hospital, Mirpur, Dhaka	40	85	Pabna Ideal Nursing Institute, Shalgariya, Pabna	60
16	Cristian Health Project Nursing Institute, Jairampur, Haluaghat, Mymensingh	50	86	Smart Nursing Institute, Laskarpur, Pabna	50
17	Nursing Institute, Medical College for Women and Hospital, Uttara, Dhaka	25	87	Shakhawat H. Memorial Nursing College, Sirajganj	50
18	Chittagong Maa O Shishu Hospital Nursing Insitute, Agrabad, Chittagong	50	88	Ideal Nursing Institute, Sirajganj	50
19	Central Hospital Nursing Institute, Green Road, Dhanmondi, Dhaka	50	89	Sahera Amir Nursing Institute, Mujib Road, Sirajganj	50
20	TMMC Nursing College, Targas, Board Bazar, Gazipur	50	90	Medi Help Nursing Institute, G L Roy Road, Rangpur	50
21	Green Life Nursing College, Dhanmondi, Dhaka	40	91	Manowara Anowara Nursing Institute, Siraj Uddaula Road, Thargaon	80
22	TMSS Nursing College, Thangamara, [Thangamara?] Bogra	100	92	Jahir-Meherun Nursing Institute, Razia Mansion Road, Patuakhali	30
23	East-West Nursing College, Aichi Nagar, Turag, Dhaka	50	93	The North Bengal Nursing Institute, Hajipara, Thakurgaon	40
24	Grameen Caledonian College of Nursing, Mirpur 2, Dhaka	80	94	America-Bangladesh Friendship Nursing Institute, Khanjanpur, Jaypurhat	40
25	IBN Sina Nursing Institute, Kollyanpur, Dhaka	90	95	Naogaon Prime Nursing Institute, Naogaon	40
26	Rangpur Community Nursing College, Dhap, Rangpur	50	96	Barind Institute of Nursing, Boalia, Rajshahi	60
27	College of Nursing Science Dinaipur, Zia Heart Foundation, Dinaipur	70	97	Anowara-Nur Nursing Institute, Khulshi, Chittagong	50
28	GMMR Nursing Institute, Sonadanga, Khulna	70	98	Al-Amin Nursing Institute, Shahjalal Upashahar, Sylhet	40
29	Begum Usman Ara College of Nursing, Chandanaish, Chittagong	50	99	Sylhet Women`s Nursing Institute, Mirboxtola, Sylhet	50
30	Begum Rabeya Khatun Nursing College, Pathatula, Sylhet	80	100	Tangail Diabetic Association Nursing Institute, Sabaliya, Tangail	40

31	Jemison Red Crescent Nursing Institute, 395 Andarkilla, Chittagong	50	101	Marks Nursing College, Mirpur 14, Dhaka	50
32	Dhaka Community Nursing College, Wareles Gate, Moghbazar, Dhaka	50	102	Zam Zam Nursing Institute, Kazipara, Barisal	50
33	Community Based Nursing Institute, Winnerpar, Mymensingh	70	103	Saseg-Gurukul Nursing Institute, Kushtia	50
34	Pabna Community Nursing Institute, Pabna	40	104	Jasim Uddin Nursing Institute, Jamalpur	40
35	Shah Makhdum Nursing Institute, Kharkhari, Bowalia, Rajshahi	40	105	Supreme Nursing Institute, Tangail	50
36	Prime Nursing College, Dhap, Rangpur	80	106	M. Rahman Nursing Institute, Rajshahi	60
37	Lamb Nursing Institute, Parbatipur, Dinajpur	50	107	RIMT Nursing Institute, Mymensingh	40
38	Comilla Diabetic Association Nursing Institute, Comilla	50	108	Dr. Halima Khatun Nursing Institute, Mymensingh	50
39	Majibur Rahman Foundation Nursing Institute, Jamalganj Road, Notunhaat, Jaypurhat	50	109	Mirpur Institute of Nursing Science and Midwifery, Mirpur 1, Dhaka	40
40	Diabetic Association, Rajshahi	70	110	Turag Modern Nursing College, Uttara Model Town, Dhaka	50
41	Munnu Nursing College, Munnu Guild City, Manikganj	50	111	DCMT Nursing Institute, Mohammadpur, Dhaka	50
42	Prime Bank College of Nursing, Pragati Sharani, Kuni Bishwa Road, Dhaka	80	112	Provati Nursing Institute, Rajshahi	30
43	Ideal Nursing College, Sherpur Road, Chakfarid, Bogra	50	113	Global Nursing Institute, Rajshahi	50
44	Safa-Mecca Nursing Institute, Masampur, Sirajganj	40	114	Mamata Nursing Institute, Rajshahi	50
45	Saint Vincent Nursing Institute, Dinajpur	60	115	Bijoy Nursing Institute, Chapainowabganj	50
46	Japan- Bangladesh Friendship Nursing Institute, Shewrapara, Mirpur, Dhaka	60	116	Asian Nursing Institute, Sheikh Para, Khulna	50
47	Anower Khan Modern Nursing College, Dhanmondi 8, Dhaka	50	117	Shandhani Nursing Institute, Meherpur	50
48	Universal Nursing Institute, Mohakhali, Dhaka	50	118	Crescent Nursing Institute, Kushtia	50
49	Kalihati Nursing Institute, Kalihati, Tangail	50	119	Korotowa Nursing Institute, Bogra	50
50	Northern Institute of Nursing Science, Dhap, Rangpur	60	120	Miftu Nursing Institute, Pabna	৳৳৳৳৳৳
51	The Green Life Nursing Institute, Dinajpur	50	121	Bangladesh Adventist Nursing Institute, Kaliakair, Gazipur	50
52	Impact Nursing Institute, Aamjhipi, Meherpur	20	122	Brahmanbaria United Nursing College, Brahmanbaria	40
53	Scholar's Nursing Institute, Charpara, Mymensingh	30	123	CARE Nursing Institute, Mohammadpur, Dhaka	40
54	Scabo Nursing College, Sehra DB Road, , Mymensingh	60	124	Diabetic Association Nursing Institute, Narayanganj	40
55	Gazi Munibur Rahman Nursing College, Kalikapur, Patuakhali	60	125	Dr. Liza Nursing Institute, Kushtia	40
56	BADS Nursing Institute, Bogra	40	126	East-West University Nursing College, Dhaka	৳৳৳৳৳৳
57	MH Shamaria Nursing Institute, Love Road, Tejgaon, Dhaka	40	127	Gaibandha Community Nursing Institute, Gaibandha	40
58	North Bengal Nursing Institute, Jaleshwaritola, Bogra	40	128	Golden Life Nursing Institute, Thakurgaon	40
59	Pallabi Nursing Institute, Mirpur, Dhaka	60	129	Jessore Institute of Nursing Science and Midwifery, Jessore	40
60	Sylhet Red Crescent Nursing Institute, Chouhatta, Sylhet	50	130	New Sonar Bangla Nursing Institute, Rangpur	30
61	Mahbubur Rahman Memorial Hospital and Nursing Institute, Brahmanbaria	40	131	Northern International Nursing College, Dhanmondi, Dhaka	40
62	Dhaka Central International Nursing College and Institute, Shyamoli, Dhaka	60	132	Psyche Nursing College, Mirpur, Dhaka	40

63	Al-Helal Nursing Institute, Mirpur 11, Dhaka	30	133	RTMI Nursing Institute, Sylhet	40
64	Anowara Nursing Institute, Suihari, Dinajpur	80	134	Sheba Nursing Institute, Chapainowabganj	40
65	Hamida Nursing Institute, Mirpur 6, Dhaka	60	135	Shimantik Nursing Institute, Sylhet	40
66	Udayan Nursing College, Safura Upasahar, Rajshahi	70	136	Shirin Rahman Nursing Institute, Jessore	40
67	D.W.F Nursing College, C&B Road, Barisal	70	137	Suratun Nessa Nursing Institute, Mymensingh	40
68	N.I.M.D.T. Nursing Institute, Mohammadpur, Dhaka	40	138	Surma Nursing Institute, Sylhet	40
69	Salahuddin Nursing Institute, Wari, Dhaka	60	139	Unihealth Nursing College, Panthapath, Dhaka	40
70	Prince Nursing Institute, Savar, Dhaka	50	140	Trauma Nursing Institute, Mirpur, Dhaka	40
Private institutions for Diploma in Midwifery: (16 with 560 seats)					
Sl. no.	Name of institution	Seats	Sl. no.	Name of institution	Seats
	Midwifery and Nursing Department, BRAC University				
1	Lamb Centre, Parbatipur, Dinajpur	40	9	ICMH Midwifery Institute, Matuail, Dhaka	30
2	F.I.V.D.B. Centre, Sylhet	40	10	Pallabi Nursing Institute, Mirpur, Dhaka	40
3	Simantik Centre, Sylhet	40	11	Sahera Hasan Midwifery Institute, Manikganj	25
4	OGSB Hospital-Dhaka Centre, Mirpur, Dhaka	50	12	TMSS Nursing College, Thangamara, Gokul, Bogra	30
5	J.B.C.H.P Centre, Mymensingh	30	13	Prime Nursing College, Dhap, Rangpur	40
6	P.H.D Centre, Khulna	30	14	North-East Nursing College, South Surma, Sylhet	40
7	HOPE Foundation, Cox's Bazar	30	15	RTEMI Midwifery Institute, Sylhet	30
			16	Scabo Nursing College, Mymensingh	30
Government: colleges for 4-year BSc in Nursing: (15 with 1,035 seats)					
Sl. no.	Name of institution	Seats	Sl. no.	Name of institution	Seats
1.	Dhaka Nursing College, Dhaka Medical College, Dhaka	100	9	Faculty of Nursing, BSMMU, Shahbag, Dhaka	25
2.	Mymensingh Nursing College, Medical College Hospital, Mymensingh	100	10	Armed Forces Medical Institute, Dhaka Cantonment, Dhaka	60
3.	Rajshahi Nursing College, Medical College Hospital, Rajshahi	100	11	Army Nursing College, Rangpur Cantonment, Rangpur	50
4.	Chittagong Nursing College, Medical College Hospital, Chittagong	100	12	Army Nursing College, Chittagong Cantonment, Chittagong	50
5.	Rangpur Nursing College, Medical College Hospital, Rangpur	100	13	Army Nursing College, Comilla Cantonment, Comilla	50
6.	Sylhet Nursing College, MAG Osmani Medical College Hospital, Sylhet	100	14	Army Nursing College, Jessore Cantonment, Jessore	50
7.	Barisal Nursing College, Sher-e-Bangla Medical College Hospital, Barisal	100	15	Army Nursing College, Bogra Cantonment, Bogra	50
8.	Dinajpur Nursing College, Medical College Hospital, Dinajpur	100			
Government colleges for 2-year Post-Basic BSc in Nursing:(4 with 400 seats)					
Sl. no.	Name of institution	Seats	Sl. no.	Name of institution	Seats
1.	Sheba Mahabiddyalaya, Mohakhali, Dhaka	125	3.	Bogra Nursing College, Shahid Ziaur Rahman Medical College Hospital, Bogra	125
2.	Faujdarhat Nursing College, Chittagong	125	4.	Armed Forces Medical Institute, Dhaka Cantonment	25

Private colleges for 4-year BSc in Nursing course: (45 with 2,185 seats) and 2-year Post-basic: (37 with 1,475 seats)									
Sl. no.	Name of institution	Seats (4-year course)	Seats (Post-basic BSc)	Sl. no.	Name of institution	Seats (4-year course)	Seats (Post-basic BSc)	Sl. no.	Seats (Post-basic BSc)
1.	State College of Health Science, Dhammondi, Dhaka	40	50	24	College of Nursing Science, Zia Heart Foundation Hospital, Dinaipur	30	30		
2.	Kumudini Nursing College, Mirzapur, Tangail	60	60	25	Dhaka Community Nursing College, Moghbazar, Dhaka	40	40		
3.	International Nursing College, Tongi, Gazipur	40	30	26	MH Shamarita Nursing College, Tejgaon, Dhaka	40	30		
4.	North-East Nursing College, South Surma, Sylhet	70	60	27	Fatema Nursing College, Ad-deen Hospital, Moghbazar, Dhaka	50	30		
5.	Begum Rabeya Khatun Nursing College, Pathantula, Sylhet	70	60	28	Islami Bank Nursing College, Naodapara, Rajshahi	50	50		
6.	Prime Nursing College, Dhap, Rangpur	70	85	29	Shakhawat H. Memorial Nursing College, Sirajganj	50	50		
7.	Square Nursing College, Square Hospital, Dhammondi, Dhaka	50	--	30	Udayan Nursing College, Rajshahi	50	50		
8.	United College of Nursing, Gulshan, Dhaka	40	20	31	Art Nursing College, Paduabazar, Comilla	50	40		
9.	TMSS Nursing College, Thangamara, Bogra	25	30	32	Marks Nursing College, Mirpur, Dhaka	50	30		
10.	TMMC Nursing College, Board Bazar, Gazipur	50	50	33	Scabo Nursing College, Mymensingh	50	30		
11.	East-West Nursing College, Aichi Nagar, Turag, Dhaka	60	60	34	Shamsun Nahar Nursing College, Agrabad, Chittagong	50	-		
12.	C.R.P Nursing College, Savar, Dhaka	40	--	35	Anowara Nursing College, Dinaipur	50	30		
13.	BIRDEM Nursing College, Shahbag, Dhaka	50	50	36	Gazi Munibur Nursing College, Patuakhali	40	30		
14.	Khaja Yunus Nursing College, Sirajganj	--	30	37	DWF Nursing College, C&B Road, Barisal	40	30		
15.	Prime Bank Nursing College, Kuril Biswaroad, Dhaka	30	20	38	Munnu Nursing College, Munnu Guild City, Manikganj	40	30		
16.	Anower Khan Nursing College, Dhanmondi 8, Dhaka	40	30	39	Mirza Nursing College, Rajshahi	50	30		
17.	Green Life Nursing College, Green Road, Dhaka	40	30	40	Ideal Nursing College, Bogra	50	30		
18.	I.U.B.A.T, Uttara, Dhaka	125	--	41	Al-Aneen Nursing College, Sylhet	40			
19.	Sheikh Fazilatun Nesa Mujib KPJ Specialized Hospital and Nursing College, Kasimpur, Gazipur	50	40	42	East-West University Nursing College, Dhaka	Under Construction			
20.	Rangpur Nursing College, Rangpur	30	30	43	Holy Family Red Crescent Nursing College, Eskaton, Dhaka	40			
21.	Grameen Caledonian College of Nursing College	60	50	44	Northern International Nursing College, Dhanmondi, Dhaka	40			
22.	Dhaka International Nursing College and Institute, Shyamoli, Dhaka	50	30	45	Unihealth Nursing College, Panthapath, Dhaka	40			
23.	Jahurul Islam Nursing College, Bajitpur, Kisoraganj	50	30						

1-year specialization course in private-sector institutions:4; seats:80					
Sl. no.	Name of institution	Seat	Sl. no.	Name of institution	Seat
01	Diploma in Cardiac Nursing, National Heart Foundation, Mirpur, Dhaka	20	03	Diploma in Cardiac Nursing, Ibrahim Cardiac Hospital, Shahbag, Dhaka	20
02	Diploma in Cardiac Nursing, College of Nursing Science Dinajpur, Zia Heart Foundation	20	04	Diploma in Pediatric Nursing, Dhaka Shishu Hospital, Dhaka	20
18-month course on Junior Midwifery in private-sector institution: (13 with 360 seats)					
Sl. no.	Name of institution	Seats	Sl. no.	Name of institution	Seat
1.	Holy Family Red Crescent Nursing College, Moghbazar, Dhaka	60	8.	Junior Midwifery Institute, Kumudini Hospital, Mirzapur, Tangail	20
2.	Junior Midwifery Institute, Shahid Mayez Uddin Memorial Red Crescent Hospital, Banglabazar, Dhaka	20	9.	Jemison Red Crescent Midwifery Institute, Andarkilla, Chittagong	50
3.	Memon Maternity Hospital, Chittagong City Corporation, Chittagong	30	10.	Cristian Hospital, Chandraghona, Rangamati	20
4.	Gias Uddin Ahmed Red Crescent Maternity Hospital and Training Institute, Chandpur	20	11.	Prime Nursing College, Dhap, Rangpur	20
5.	Junior Midwifery Institute, Ptema Hospital, Jessore	20	12.	Central Hospital Nursing Institute, Green Road, Dhanmondi, Dhaka	20
6.	Ad-deen Nursing Institute, 15 Rail Road, Jessore	20	13	Scabo Nursing College, Mymensingh	40
7.	Junior Midwifery Institute, Cristian Hospital, Bogra	20			
Training institutions under Family Planning Department NIPORT (or training of family welfare visitors (n=12))					
Sl. no.	Name of institution	Seats	Sl. no.	Name of institution	Seat
1	Family Welfare Visitor Training Institute, Azimpur, Dhaka	-	7	Family Welfare Visitor Training Institute, Garib Shah Road, Bogra	-
2	Family Welfare Visitor Training Institute, Adjacent to Medical College, Tangail	-	8	Family Welfare Visitor Training Institute, Kushtia	-
3	Family Welfare Visitor Training Institute, Kalibari Road, Barisal	-	9	Family Welfare Visitor Training Institute, West Khabaspur, Faridpur	-
4	Family Welfare Visitor Training Institute, Chhoto Boyar, Khulna	-	10	Family Welfare Visitor Training Institute, East Shahi Eidgah TV Gate, Sylhet	-
5	Family Welfare Visitor Training Institute, Rajbari, Dinajpur	-	11	Family Welfare Visitor Training Institute, Bamrupa, Rangamati	-
6	Family Welfare Visitor Training Institute, Kuchaitoli Post, Rajabazar, Comilla	-	12	Family Welfare Visitor Training Institute, Adjacent to Rajshahi Medical College	-
Private-sector institutions for training of community paramedics: (23 with 1,270 seats)					
Sl. no.	Name of institution	Seats	Sl. no.	Name of institution	Seat
1	Radda Community Paramedic Institute, Mirpur, Dhaka	60	13	Population Services and Training Centre, Niketon, Dhaka	60
2	Prokash Medical Institute, Chandra, Gazipur	30	14	DWF Community Paramedic Institute, C&B road, Patuakhali	120

3	Faridpur Community Paramedic Institute, Faridpur	60	15	National Institute of Medical and Dental Technology, Mohammadpur, Dhaka	60
4	SIT-Foundation Community Paramedic Institute, Malatinagar, Bogra	60	16	Chapainowabganj Community Paramedic Institute, Chapainowabganj	60
5	A.I.T.A.M Welfare Organization, Mohammadpur, Dhaka	60	17	Bangladesh Community Paramedic Institute, Rajshahi	60
6	B F Community Paramedic Institute, Jamalganj Road, Jaypurhat	30	18	Institute of Patuakhali Medical Technology, Patuakhali	40
7	Institute of Community Health Bangladesh, Moghbazar, Dhaka	60	19	Sancroed Community Health Service Centre and Hospital, Sunamganj	40
8	R.T.M International, Shewrapara, Dhaka	60	20	Institute of Health Science, Sajeda Foundation Hospital, Keraniganj, Dhaka	40
9	R.T.M International Community Paramedic Institute, Sylhet	100	21	Birampur Community Paramedic Institute, Birampur, Dinajpur	30
10	Shimantik Institute of Human Resource Development, Sylhet	60	22	Rabeya Community Paramedic Institute, Savar, Dhaka	30
11	Rangpur Community Paramedic Institute, TMSS, Rangpur	60	23	J.T.S Community Paramedic Institute, Hajjaribag, Dhaka	30
12	TMSS Community Paramedic Institute, Thangamara, Bogra	60			

ANNEX TO CHAPTER 11

1. Numbers of outdoor visits and admissions in the National Institute of Cardiovascular Diseases (NICVD) during 2002-2016

Year	Admission		Outdoor visits				Total	Children	Daily average	Average length of stay (day)	Bed-occupancy rate (%)
	Total	Daily Average	Male	Female	Children						
2002	17081	47	52740	29532	4674	86944	238	6.91	129.63		
2003	20083	55	54550	31939	5150	91639	251	7.07	157.76		
2004	21522	59	56482	31250	4857	92589	254	6.9	164.03		
2005	22419	62	59950	34608	5497	100055	274	6.46	160.39		
2006	24376	67	61565	34861	6060	102486	281	6.47	175.8		
2007	29147	80	76732	41792	7417	125941	345	5.48	174.8		
2008	33946	93	91147	47889	8534	147570	404	5.21	147.7		
2009	41554	114	99102	51539	9367	160008	438	5.16	141.83		
2010	42779	117	100868	51364	9726	161958	444	5.35	152.82		
2011	43275	119	103930	50081	9802	163813	449	5.41	146.63		
2012	44559	122	113157	51488	9721	174366	478	5.17	153.21		
2013	43341	119	113901	50606	7762	172269	472	5.21	152.05		
2014	49283	135	133461	57652	9420	200533	549	4.86	159.37		
2015	63,390	174	149,766	67,829	4,591	222,186	609	4.04	166.18		
2016	64906	177	146177	68328	11633	226138	620	4.25	178.33		

2. Number of ETTs (Exercise Tolerance Test) done at NICVD from 2001 to 2016

Year	Male (No.)	Female (No.)	Total (No.)	Male (%)	Female (%)
2001	210	24	234	89.74	10.26
2002	254	55	509	49.90	10.81
2003	731	102	833	87.76	12.24
2004	828	167	995	83.22	16.78
2005	823	180	1003	82.05	17.95
2006	1233	321	1554	79.34	20.66
2007	1437	301	1738	82.68	17.32
2008	1798	339	2137	84.14	15.86
2009	1610	288	1898	85.23	15.25
2010	1549	212	1761	87.96	12.04
2011	1353	323	1678	80.63	19.25
2012	1945	497	2442	79.65	20.35
2013	1684	372	2056	81.91	18.09
2014	2303	709	3012	76.46	23.54
2015	3193	1213	4406	72.47	27.53
2016	3166	1378	4544	69.67	30.33

3. Number of cath-lab procedures done in the NICVD (2003-2016)

Procedure	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Coronary angiography	2827	3210	2780	3105	3266	3980	4437	4711	4426	4881	4239	4241	3452	5537
Cardiac cath	308	225	227	229	295	380	340	334	251	256	240	183	99	163
Angiography	13	69	6	0	0	0	1	6	12	1	5	-	-	-
Renal	42	93	85	106	87	112	112	124	124	120	150	121	112	186
Peripheral	55	162	91	106	87	112	113	130	136	121	155	121	112	186
Total	0	0	0	0	0	0	9	7	17	6	4	-	-	-
Angioplasty	0	0	4	7	43	23	3	18	12	22	13	-	2	40
Renal	0	0	4	7	43	23	12	25	29	28	17	-	2	40
Peripheral	0	0	4	7	43	23	12	18	12	22	13	-	2	40
Total	0	0	4	7	43	23	12	25	29	28	17	-	2	40

Other interventions	PCI	371	599	488	584	574	889	1149	1312	1254	1681	1828	1898	1413	2316
	PTMC	189	273	295	280	20	130	154	187	117	137	137	111	89	111
	TPM	646	715	708	675	850	741	950	647	905	1090	910	992	1077	1198
	PPM	320	333	368	321	359	414	487	402	418	461	439	525	552	568
	EPS & RFA	0	0	0	161	204	113	177	66	72	56	57	35	130	255
	Device closure	0	0	0	1	0	0	0	0	0	-	-	-	69	165
	Others	12	13	11	4	0	18	40	56	34	97	93	123	93	191
	Total	1538	1933	1870	2026	2007	2305	2957	2670	2800	3522	3464	3684	3423	4804

4. Number of cardiac and vascular surgeries performed in the NICVD (2000-2016)

Year	Open-heart surgery						Closed-heart surgery sur-gery			Vascular surgery		
	CABG	Valve	Congenital	Other	Total		Routine	Emergency	Total	Routine	Emergency	Total
2000	44	133	88	26	291	186	74	213	287			
2001	60	134	133	3	330	157	100	193	293			
2002	112	89	210	4	415	151	114	232	346			
2003	170	142	162	22	496	140	69	153	222			
2004	180	159	205	17	561	95	92	208	300			
2005	267	102	237	20	626	93	90	206	296			
2006	226	113	255	28	622	70	95	405	500			
2007	188	165	256	46	655	58	121	447	568			
2008	233	182	327	21	763	63	152	840	992			
2009	218	264	364	11	854	71	219	1001	1220			
2010	152	304	365	37	859	88	254	1036	1290			
2011	101	207	342	67	717	98	183	1640	1823			
2012	175	249	468	57	949	82	254	1274	1528			
2013	147	293	450	26	916	41	265	1214	1479			
2014	103	310	492	28	943	48	265	1258	1523			
2015	147	239	393	149	928	31	301	1560	1861			
2016	206	226	464	99	995	---	222	1602	1824			

5. Number of injuries and deaths from different types of accidents in different districts during Jan-Jul 2017

Month	District	Type	Injured	Dead
Jan	Dhaka	Gas Cylinder Burst	5	2
Jan	Gaibandha	Bus-Truck Collision	7	1
Jan	Comilla	Bus lost control	10	2
Jan	Jessore	Bus lost control	9	2
Jan	Comilla	Microbus Hit	1	2
Jan	Gazipur	Bus-Truck Collision	2	5
Jan	Kushtia	Truck-Autorickshaw Collision	3	2
Jan	Dhaka	Bus-Truck Collision	0	2
Jan	Mymensingh	Bus-Truck Collision	19	1
Jan	Sylhet	Landslide	0	5
Jan	Comilla	Leguna-Car Collision	2	1
Feb	Dhaka	Bus-Truck Collision	25	5
Feb	Rajshahi	Bus lost control	25	1
Feb	Narayanganj	Truck fell into ditch	0	4
Jan	Faridpur	Bus-Van Collision	25	13
Feb	Narsingdi	Bus-Microbus Collision	6	12
Feb	Manikganj	Bus fell into ditch	11	0
Feb	Mymensingh	Bus-Nosimon Collision	7	0
Feb	Faridpur	Bus-Bus Collision	15	4
Feb	Cox's Bazar	Bus lost control	15	0
Feb	Mymensingh	Bus lost control	18	0
Feb	Sirajganj	Bus-Truck Collision	23	4
Feb	Barisal	Bus Hit	0	1
Feb	Cox's Bazar	Microbus fell into ditch	3	4
Feb	Dhaka	Gas-Cylinder Burst	9	0
Mar	Patuakhali	Crane Accident	2	1
Mar	Dhaka	Bus-Bus Collision	4	1
Mar	Munsiganj	Unknown	5	1
Mar	Gaibandha	Bus lost control	6	6
Mar	Dhaka	Bus lost control	5	0
Mar	Magura	Unknown	0	2
Mar	Manikganj	Bus-Motor Cycle Collision	1	1
Mar	Mymensingh	Bus-Pickup Van Collision	4	10
Mar	Chuadanga	Truck-Nosimon Collision	14	10
Mar	Mymensingh	Truck-Nosimon Collision	9	0
Mar	Bagerhat	Troller Capsize	6	5
Apr	Chittagong	Troller Capsize	35	4
Apr	Sylhet	Lightening	0	1
Apr	Pabna	Storm	100	0
Apr	Feni	Lightening	19	0
Apr	Manikganj	Bus-Bus Collision	30	0
Apr	Mymensingh	Truck-Pickup Collision	0	3
Apr	Mymensingh	Bus lost control	20	1

Month	District	Type	Injured	Dead
Apr	Munsiganj	Truck-CNG 3-wheeler Collision	2	1
Apr	Comilla	Microbus-Covered Van Collision	5	0
Apr	Magura	Bus lost control	2	0
Apr	Munsiganj	Bus lost control	16	0
Apr	Munsiganj	Bus hit	3	0
Apr	Jhenaidah	Truck-Bus Collision	10	0
Apr	Kushtia	Bus-Bus Collision	15	0
Apr	Narsingdi	Microbus-Car collision	6	4
Apr	Bogura	Bus fell into ditch	0	2
Apr	Kushtia	Pickup-Van Motor Cycle Collision	1	2
Apr	Dinajpur	Boiler Blust	15	7
Apr	Pabna	Bus Bus Collision	33	3
Apr	Lokkhipur	Lightening	0	1
Apr	Sylhet	Lightening	0	1
Apr	Manikganj	Lightening	0	1
Apr	Chittagong	Lightening	0	1
Apr	Kishoreganj	Lightening	0	1
Apr	Khagrachari	Lightening	0	1
Apr	Norail	Lightening	0	1
Apr	Netrokona	Lightening	0	1
Apr	Madaripur	Lightening	0	1
Apr	Pabna	Lightening	0	3
Apr	Comilla	Lightening	0	1
Apr	Sirajganj	Truck lost control	10	3
Apr	Sirajganj	Lightening	0	1
Apr	Tangail	Truck-Truck Collision	1	2
Apr	Rajshahi	Boat Capsize	0	5
May	Dhaka	Lightening	2	1
May	Chapainawabganj	Lightening	0	2
May	Dhaka	Food poisoning	30	0
May	Tangail	Bus fell into ditch	22	7
May	Madaripur	Lightening	0	1
May	Narayanganj	Lightening	0	2
May	Pabna	Lightening	1	0
May	Naoga	Lightening	0	1
May	Jessore	Bus lost control	45	6
May	Munsiganj	Lightening	1	1
May	Munsiganj	Lightening	1	1
May	Gaibandha	Storm	0	1
May	Norail	Storm	0	1
May	Jhenaidah	Bus lost control	31	1
May	Mymensingh	Bus lost control	0	2
May	Sylhet	Bus lost control	10	3
May	Chittagong	Bus-Pickup Van Collision	12	5
May	Mymensingh	Lightening	1	1
May	Gopalganj	Private Car-Autro-rickshaw collision	2	3

Month	District	Type	Injured	Dead
May	Gaibandha	Truck-Truck Collision	2	2
May	Lakshmipur	Lightening	4	1
May	Narayanganj	Bus-Leguna Collsion	7	1
May	Gaibandha	Bus fell into ditch	30	0
May	Chittagong	Bus lost control	0	1
May	Dinajpur	Bus-Autorickshaw Collision	2	2
May	Norail	Lightening	1	1
May	Khulna	Gas Cylinder Burst	0	0
Jun	B. Baria	Lightening	3	2
Jun	Munsiganj	Covered van lost control	4	2
Jun	Rangamati	Landslide	65	23
Jun	Chittagong	Landslide	0	4
Jun	Bandarban	Landslide	0	7
Jun	Gaibandha	Minibus-Ambulance Collision	5	1
Jun	Gopalganj	Bus-Microbus Collision	10	5
Jul	Dhaka	Bus-Private Car Collision	7	1
Jul	Kushtia	Lightening	0	5
Jul	Gazipur	Boiler Blast	2	13
Jul	Natore	Truck lost control	0	3
Jul	Dhaka	Fire	1	2
Jul	Comilla	Lorry-Auto-rickshaw Collision	1	4
Jul	Magura	Bus-Bus Collision	12	2
Jul	Magura	Truck fell into ditch	2	2
Jul	Netrokona	Food poisoning	8	0
Jul	Chittagong	Unknown fever	26	0
Jul	Munsiganj	Bus fell into ditch	8	0
Jul	Narayanganj	Van-Leguna Collision	4	0
Jul	Comilla	Bus-Lorry Collision	11	2
Jul	Narsingdi	bus trolley Collision	7	0
Jul	Chittagong	Covered van-Leguna Collision	5	4
Jul	Chittagong	Boiler blast	8	0
Jul	Comilla	Truck-CNG 3-wheeler Collision	2	1
Jul	Dhaka	Bus lost control	20	1
Jul	Lalmonirhat	Truck-Motorcycle Collision	0	1
Jul	Sylhet	Boat Capsize	0	2
Jul	Dhaka	Wall collapse	4	1
Jul	Jessore	Bus lost control	50	0
Jul	Magura	Bus-Easybike Collision	4	0
Jul	Chittagong	Landslide	0	5
Jul	Jhenaidah	Lightening	0	2
Jul	Manikganj	Bus-Microbus Collision	5	1
Jul	Sirajganj	Bus lost control	7	2
Jul	Lalmonirhat	Truck lost control	1	2
Jul	Bandarban	Landslide	2	4
Jul	Cox's Bazar	Landslide	0	4
Jul	Rangpur	Motorcycle-Lorry Collision	1	1

6. Numbers of outdoor and indoor patient visits (both sexes and all ages) at NIKDU from 2012 to 2016

Type of patient	2012			2013			2014			2015			2016							
	Male	Female	Child	Total	Male	Female	Child	Total	Male	Female	Child	Total	Male	Female	Child	Total				
Outpatients	32098	15179	3140	50417	34566	17100	3071	54737	41082	19219	3455	63756	48856	28016	4461	81333	62925	38823	5687	107435
Inpatients	2563	1373	503	4439	2742	1608	391	4741	3088	1970	495	5553	3196	2020	528	5744	3101	1964	559	5624

7. Number of new patients visiting outdoor, indoor and emergency departments with bed-occupancy rates at NIMHR from 2012-2016

Type of patient	2012			2013			2014			2015			2016			Bed-occupancy rate				
	Male	Female	Child	Total	Male	Female	Child	Total	Male	Female	Child	Total	Male	Female	Child		Total			
OPD (new patients)	14,959	8,939		23,898	13,382	8,814	2,780	24,976	17,856	12,303	4,855	35,014	15,675	5,717		42,703	22,874	18,626	6,106	47,606
Indoor patients	1,249	679		1,928	1,320	744	76	2,140	1,943	1,071	106	3,120	1,067	101	3,085	2,770	1,625	1,221	117	4,512
Emergency patients	1,159	667		1,826	1,302	731	70	2,103	1,448	810	87	2,345	920	110	2,501	1,896	1,221	132		3,249
Bed-occupancy rate	63.83%			67.62%			72.30%			82.87%			76.98%							

8. Number of patients who attended 15 SBKs from July 2016 to June 2017

Sl. no.	MCH	OPD	PA	WBC	IPD	Total	Follow-up clinic										Grand Total		
							GDA	TIA	MDC (Motor)	MDC (S+F)	MDC (LV)	SLC	DT	EPL	PA	OPD		MH	Total FU
1	Dhaka Medical College Hospital	524	235	77	26	862	114	68	56	22	52	190	223	347	138	41	17	1268	2130
2	Shaheed Suhrawardy Medical College Hospital	900	240	49	36	1225	196	82	73	41	34	70	125	269	87	336	91	1404	2629
3	Sir Salimullah Medical College Hospital	514	201	5	58	778	78	37	89	20	14	84	180	428	121	119	8	1178	1956
4	Sylhet MAG Osmani Medical College Hospital	1094	110	0	13	1217	214	19	34	1	21	66	367	15	46	1105	25	1913	3130
5	Sher-e-Bangla Medical College Hospital, Barisal	558	177	14	79	828	114	37	69	35	40	54	366	73	300	366	27	1481	2309
6	Chittagong Medical College Hospital	1036	226	3	13	1278	86	17	4	11	81	111	410	2289	173	654	0	3836	5114
7	Rajshahi Medical College Hospital	1133	134	12	1	1280	55	16	28	4	5	105	544	163	88	445	6	1459	2739
8	Khulna Medical College Hospital	1277	208	20	14	1519	63	43	120	33	31	72	831	458	153	893	33	2730	4249
9	Rangpur Medical College Hospital	794	245	13	13	1065	135	7	38	10	11	43	170	89	207	181	29	920	1985
10	Mymensingh Medical College Hospital	1303	181	30	79	1593	77	21	39	12	136	32	752	378	150	1127	38	2762	4355
11	M Abdur Rahim Medical College Hospital	412	116	7	2	537	107	26	86	23	51	39	20	83	48	92	3	578	1115
12	Faridpur Medical College Hospital	608	128	13	57	806	134	26	39	22	24	143	155	221	114	215	19	1112	1918
13	Comilla Medical College Hospital	626	98	74	5	803	83	30	53	7	42	55	692	70	65	359	7	1463	2266
14	Shahid Ziaur Rahman Medical College Hospital	1133	242	20	7	1402	108	46	47	4	59	100	1594	174	166	824	4	3126	4528
15	Cox's Bazar Medical College Hospital	923	194	38	7	1162	92	35	61	8	25	64	453	165	191	445	1	1540	2702
Total		12835	2735	375	410	16355	1656	510	836	253	626	1228	6882	5222	2047	7202	308	26770	43125



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