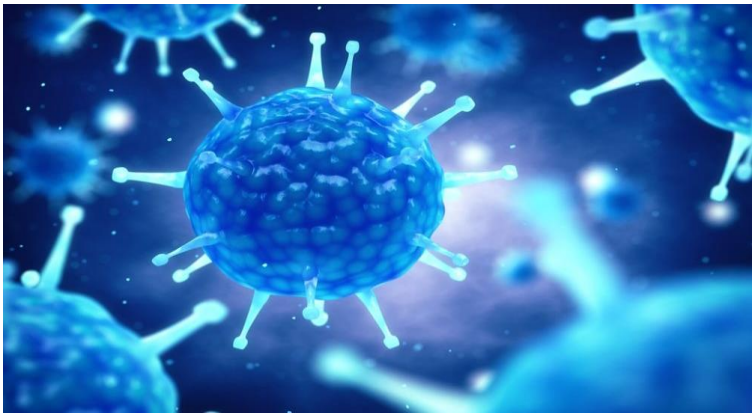
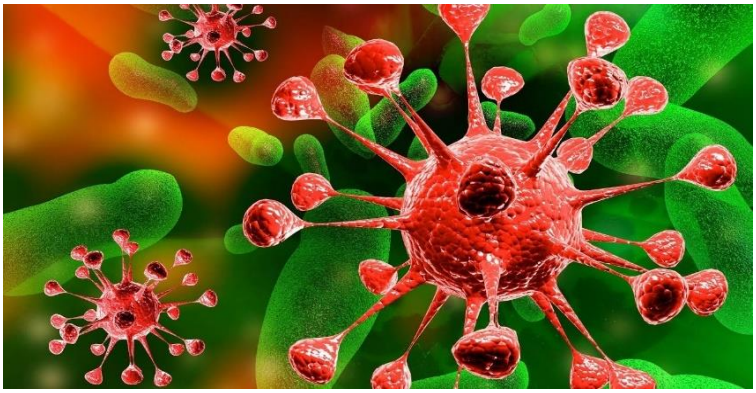
Bangladesh Disease Specific Accounts 2020





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Bangladesh Disease Specific Accounts 2020

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Acronyms

BNHA	Bangladesh National Health Accounts
CGA	Controller General of Accounts
CHE	Current Health Accounts
COI	Cost of Illness
DI	Data International Ltd.
DSA	Disease Specific Account
GBD	Global Burden of Diseases
HEU	Health Economics Unit
HSD	Health Services Division
ICD-10	International Classification of Disease and Related Health Problems 10th revision
ICPC	International Classification of Primary Care
IMS	Intercontinental Marketing Survey
IQVIA	A company formed by the merger of IMS Health and Quintiles
MOHFW	Ministry of Health and Family Welfare
NHA	National Health Accounts
OECD	Organisation for Economic Co-operation and Development
OOPS	Out-of-Pocket Spending
SHA	Systems of Health Accounts
TPE	Total Pharmaceuticals Expenditure
WHO	World Health Organization

Executive Summary

Since 1997, The Health Economics Unit (HEU) under the Health Services Division (HSD) of the Ministry of Health and Family Welfare (MOHFW) has been producing the Bangladesh National Health Accounts (BNHA). Guided by OECD, Eurostat, WHO's the System of Health Accounts 2011 edition (SHA2011), BNHA reports the most comprehensive healthcare expenditure statistics of the country by service provider, type of services provided, and how it is financed.

To better understand the dominant diseases and conditions influencing healthcare spending, HEU produced a Disease Specific Account (DSA) estimate for Bangladesh using the OECD's "Guidelines on the voluntary reporting of disease specific expenditures, December 2013." The DSA 2020 study, like the first effort (2015) uses the most recent BNHA estimates to distribute health expenditures by diseases and conditions. The disease and condition classification in this study adheres to the World Health Organization's International Classification for Disease, Tenth edition (ICD-10).

The DSA analysis can be defined as the reallocation of National Health Accounts' (NHA) Current Health Expenditure (CHE) by beneficiary characteristics, such as age, gender, and the reasons for seeking healthcare services. NHA defines Total Health Expenditure (THE) as the sum of direct health expenditures and capital formation plus education and research expenditures of all healthcare providers. CHE includes all components of THE except expenditures on capital formation, education and research related to the health sector.

With the specific objective of estimating expenditure by disease, the study, in addition to BNHA 2020 data set, used data from multiple studies, including: (i) Healthcare Facility Survey 2020 (HFS2020); (ii) Inpatient Admissions Records Survey 2020; (iii) Outpatient Survey 2022; (iv) Pharmacy Patient Survey 2022; and (v) Household Income and Expenditure Survey (HIES) 2016.

This study sampled 27,836 patients with a total of 2,073 diseases and conditions. These were classified using ICD-10, a system established by the World Health Organization (WHO) for categorizing various health issues (source: https://www.who.int/classifications/icd/icdonlineversions/en/). The ICD-10 consists of 22 chapters, where the initial 21 chapters delineate specific diseases and conditions, and the 22nd chapter includes codes for specialized purposes. Consequently, the tables presented in this report cover these 21 categories and their corresponding sub-categories.

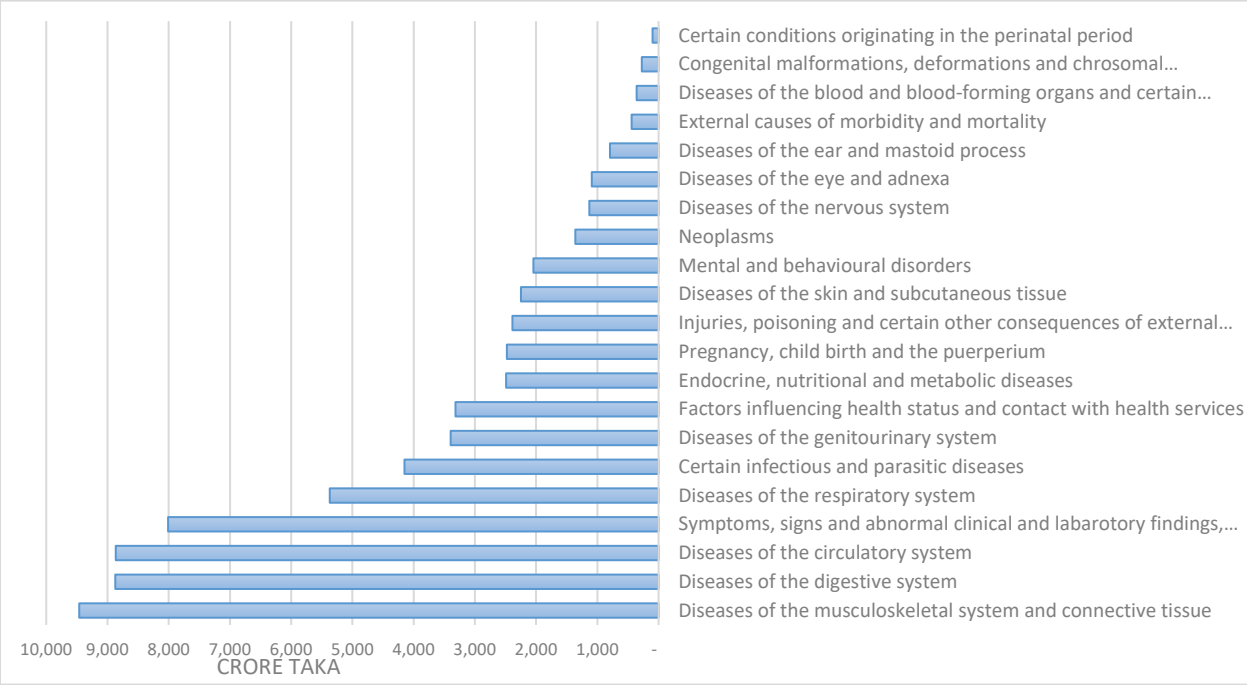
KEY FINDINGS

Overall Findings

In 2020, Bangladesh's Total Health Expenditure (THE) is estimated at Taka 77,735 Crore, while Current Health Expenditure (CHE) is Taka 71,990 Crore. Under this study, approximately 95% of CHE, Taka 68,629 Crore, is apportioned across diseases and conditions. The analysis excluded expenditure estimates related to governance, health system administration, preventive care provided by public and NGO healthcare programmes, etc.

In 2020, the total recurrent expenditure directly linked with diseases and conditions is estimated at Taka 69 thousand crore. The highest expenditure is attributed to Diseases of the musculoskeletal system and connective tissue, totaling Taka 9,461 crore, followed by Diseases of the digestive system (Taka 8,872 crore), Diseases of the circulatory system (Taka 8,865 crore), Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified (Taka 8,010 crore), Diseases of the respiratory system (Taka 5,395 crore) and Certain infectious and parasitic diseases (Taka 4,149 crore). Together, these six disease categories account for 65% of the total disease burden, with the remaining 35% stemming from 16 other categories. Figure 1 presents the recurrent healthcare expenditure on key selected diseases and conditions by ICD-10 Classification, 2020.

Figure 1: Recurrent Healthcare Expenditure of Selected Diseases and Conditions by ICD-10 Classification, 2020



Comparison of DSA 2020 and DSA 2015 Estimates

In assessing shifts in disease prevalence trends in relation to expenses, an analysis compared spending between 2015 and 2020 based on the ICD-10 Chapter. Diseases linked to the musculoskeletal system and connective tissue consistently accounted for the highest expenditure share in both 2015 and 2020 (Table 1). However, only six out of the 22 broader disease categories retained their proportional spending share from 2015 to 2020.

The ranking of the top five categories representing the financial burden of diseases and conditions in 2020 is compared to 2015:

- Diseases of the musculoskeletal system and connective tissue (1, 2020; 1, 2015)
- Diseases of the circulatory system (2, 2020; 2, 2015)
- Diseases of the digestive system (3, 2020; 4, 2015)
- Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified (4, 2020; 9, 2015)
- Diseases of the respiratory system (5, 2020; 3, 2015)

Table 1: Comparison of Expenditure by ICD-10 Chapter: 2020 and 2015

ICD-10 Chapter	Classification of Diseases and Conditions	2015			2020		
		Crore Taka	Col.%	Rank	Crore Taka	Col.%	Rank
A00-B99	Certain infectious and parasitic diseases	3,110.5	8.0%	5	4,149.3	6.0%	6
C00-D48	Neoplasms	889.3	2.3%	15	1,359.0	2.0%	14
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	127.8	0.3%	19	358.1	0.5%	19
E00-E90	Endocrine, nutritional, and metabolic diseases	2,011.4	5.2%	8	2,489.5	3.6%	9
F00-F99	Mental and behavioural disorders	1,491.3	3.8%	11	2,043.6	3.0%	13
G00-G99	Diseases of the nervous system	963.5	2.5%	14	1,130.6	1.6%	15
H00-H59	Diseases of the eye and adnexa	1,008.4	2.6%	13	1,090.5	1.6%	16
H60-H95	Diseases of the ear and mastoid process	734.8	1.9%	18	793.4	1.2%	17
I00-I99	Diseases of the circulatory system	3,541.5	9.1%	4	8,864.6	12.9%	3
J00-J99	Diseases of the respiratory system	3,645.4	9.3%	3	5,369.4	7.8%	5
K00-K99	Diseases of the digestive system	5,098.3	13.1%	2	8,872.1	12.9%	2
L00-L99	Diseases of the skin and subcutaneous tissue	1,499.2	3.8%	10	2,247.1	3.3%	12
M00-M99	Diseases of the musculoskeletal system and connective tissue	5,507.6	14.1%	1	9,460.9	13.8%	1
N00-N99	Diseases of the genitourinary system	2,421.7	6.2%	6	3,394.9	4.9%	7
O00-O99	Pregnancy, child birth and the puerperium	884.6	2.3%	16	2,476.9	3.6%	10
P00-P96	Certain conditions originating in the perinatal period	19.4	0.0%	21	98.0	0.1%	21
Q00-Q99	Congenital malformations, deformations and chrosomal abnormalities	117.1	0.3%	20	273.3	0.4%	20
R00-R99	Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified	1,600.5	4.1%	9	8,009.6	11.7%	4
S00-T98	Injuries, poisoning and certain other consequences of external causes	2,166.4	5.6%	7	2,386.5	3.5%	11
U00-U99	Codes for special purposes	-	0.0%	22	6.0	0.0%	22
V01-Y98	External causes of morbidity and mortality	756.0	1.9%	17	439.6	0.6%	18
Z00-Z99	Factors influencing health status and contact with health services	1,412.4	3.6%	12	3,316.1	4.8%	8
Total		39,007.1	100%		68,628.9	100%	

Expenditure Comparison by Gender and Age

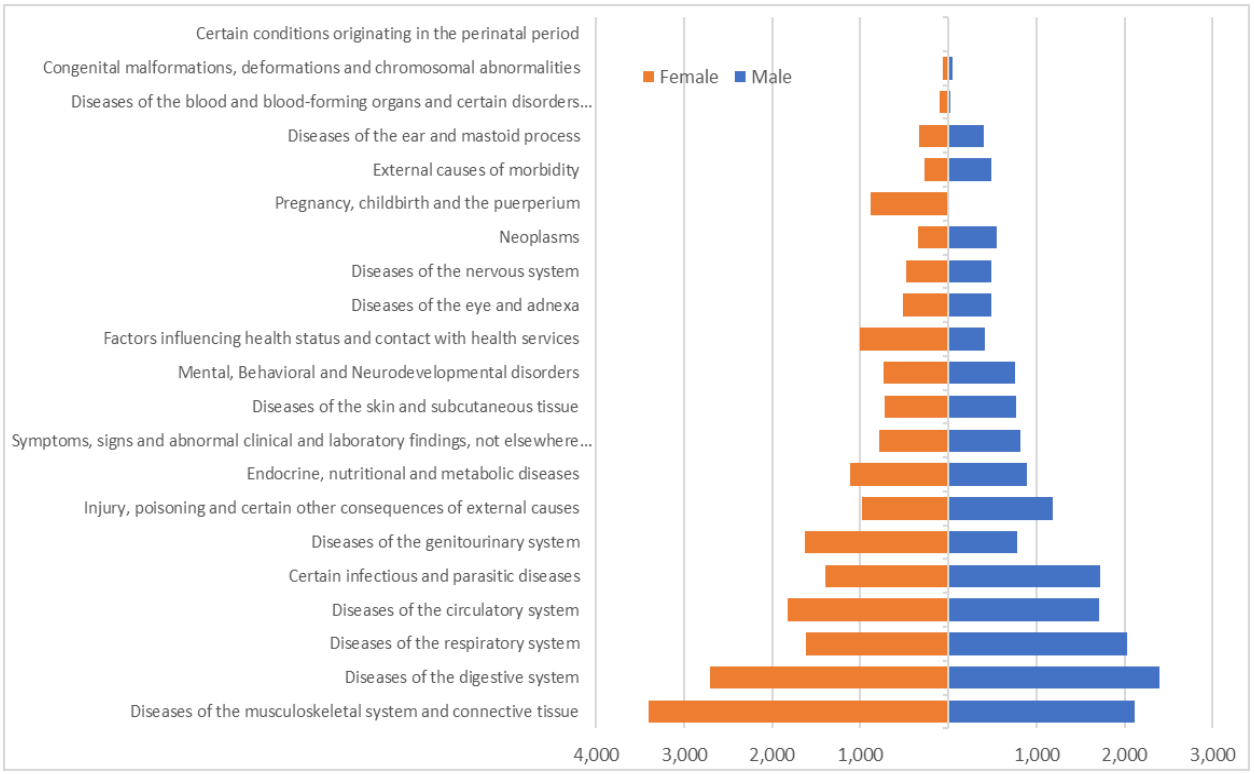
In 2020, total recurrent spending on diseases and conditions in Bangladesh amounted to Taka 26,688 crore for males and Taka 41,179 crore for females (Table 2, Figure 2). Six diseases within the 22 ICD-10 Chapters constituted approximately 66% of healthcare expenditure for both genders. Comparing the prevalence of these six diseases between males and females reveals that females exhibit a higher vulnerability to Diseases of the musculoskeletal system and connective tissue, Diseases of the circulatory system, Diseases of the respiratory system, Diseases of the digestive system, and Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified. Conversely, males allocate a greater proportion of funds toward Certain infectious and parasitic diseases compared to females.

Table 2: Recurrent Healthcare Expenditure by Gender

ICD-10	Classification of Diseases and Conditions	Male	Col.%	Female	Col.%
		Values in Crore Taka			
A00-B99	Certain infectious and parasitic diseases	1,519	45%	1,867	55%
C00-D48	Neoplasms	701	52%	658	48%
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	101	28%	257	72%
E00-E90	Endocrine, nutritional, and metabolic diseases	888	36%	1,596	64%
F00-F99	Mental and behavioural disorders	929	45%	1,115	55%
G00-G99	Diseases of the nervous system	487	43%	644	57%
H00-H59	Diseases of the eye and adnexa	439	40%	652	60%
H60-H95	Diseases of the ear and mastoid process	314	40%	479	60%
I00-I99	Diseases of the circulatory system	3,249	37%	5,608	63%
J00-J99	Diseases of the respiratory system	2,633	49%	2,736	51%
K00-K99	Diseases of the digestive system	3,851	43%	5,018	57%
L00-L99	Diseases of the skin and subcutaneous tissue	1,142	51%	1,104	49%
M00-M99	Diseases of the musculoskeletal system and connective tissue	3,459	37%	6,001	63%
N00-N99	Diseases of the genitourinary system	994	29%	2,401	71%
O00-O99	Pregnancy, child birth and the puerperium	-	0%	2,477	100%
P00-P96	Certain conditions originating in the perinatal period	28	29%	70	71%
Q00-Q99	Congenital malformations, deformations and chrosomal abnormalities	63	23%	211	77%
R00-R99	Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified	3,758	47%	4,251	53%
S00-T98	Injuries, poisoning and certain other consequences of external causes	1,350	57%	1,036	43%
U00-U99	Codes for special purposes	5	81%	1	19%
V01-Y98	External causes of morbidity and mortality	306	70%	134	30%
Z00-Z99	Factors influencing health status and contact with health services	472	20%	1,864	80%
Total		26,688	40%	40,179	60%

An examination of expenditure across different age groups for various diseases and conditions indicates that 58% of the recurrent spending allocated to patients are aimed at treating the reproductive age group, spanning ages 15 to 49. A closer look at this age bracket by gender highlights that 64% of healthcare expenses for females and 50% for males are attributed to individuals within these 15 to 49 age ranges.

Figure 2: Recurrent Healthcare Expenditure 2020 by Sex and ICD-10



I. Introduction

The Bangladesh National Health Accounts (BNHA), guided by OECD, Eurostat, WHO (2011), System of Health Accounts 2011 edition (SHA2011), offers a systematic and comprehensive framework used to track and analyze the financial resources spent on healthcare within the country. Disease Specific Account (DSA) production relies heavily on BNHA both on the methodology and approach and in data collection and analysis. It also uses NHA expenditure estimates, along with other data sources, for estimating outlays by diseases and conditions.

Over the last two decades, the Health Economics Unit (HEU) of the Health Services Division (HSD). Ministry of Health and Family Welfare (MOHFW) has produced six rounds of Bangladesh National Health Accounts (BNHA), Over the years, BNHA estimates, along with the SHA 2011 guidelines, has facilitated expenditure tracking expenditures including: HIV/AIDS, Malaria and Tuberculosis (2015, 2020), Essential Service Package (ESP) (2022), Pharmaceutical (2023). In 2019, for the first time in Bangladesh, a Disease Specific Account (DSA) was produced whereby expenditure on diseases and conditions were estimated for 2015.

This report presents findings of the second attempt to provide a detailed breakdown of expenditures specifically related to a particular disease or medical condition for Bangladesh for 2020. The accounts offer insights into how much is being spent on the prevention, diagnosis, treatment, and management of a specific disease or health condition. While DSA estimate provides valuable understandings of the financial aspects of specific diseases, it is most effective when used in conjunction with other health data, such as epidemiological data, to provide a comprehensive understanding of the disease's impact on public health and healthcare systems.

The World Health Organization (WHO) no longer advocates for the creation of individual subaccounts. Instead, it recommends adopting the SHA 2011 methodology to distribute healthcare expenditures by diseases and conditions. DSA produced thereby represents a more robust and practical approach to estimating expenditure across all diseases and conditions.

This methodology, contingent upon data availability, ensures that expenditures for different diseases can be compared consistently. Moreover, it guarantees that the total expenditures for all diseases align with the estimate of current/recurrent health expenditure, which encompasses all healthcare outlays excluding capital expenditure, education, and research expenses.

Measuring the value of medical spending requires relating expenditures to the health outcomes they produce. This is most readily done at the disease level. For example, the value of spending more on physicians may be reflected in outcomes of hospitalization, or in hospitalizations avoided. This can be assessed only by looking at treatment for particular conditions. Cost of Illness (COI) studies which allocate national health expenditures to a comprehensive set of diseases can provide important input for health policy matters. Since no methodological standards for such studies has been established in Bangladesh, this gap can be addressed in the DSA analysis.

Quantifying the effectiveness of medical expenditures entails establishing a link between these costs and the health results they generate, which is most effectively accomplished when scrutinizing healthcare spending at the level of specific diseases. For instance, the impact of increased investment in physicians can manifest in outcomes such as reduced hospitalizations or the prevention of hospital admissions.

II. Methodology and Approach

Disease-Specific Accounts (DSA) can be defined as the reallocation of National Health Accounts (NHA) Current Health Expenditure (CHE) by beneficiary characteristics such as age, gender, and the reasons for seeking healthcare services. As per the OECD, Eurostat, WHO (2011), A System of Health Accounts guidelines, it is recommended to adopt a prevalence-based approach for estimating expenditures related to diseases. This method involves aggregating all costs associated with disease cases that are predominant within a specific time period to calculate the overall expenses. Costs associated with that patient would encompass expenses such as the time cost of doctors and nurses, bed maintenance, dietary expenses, diagnostic costs, support staff salaries, and the overhead costs of the healthcare facility, among others.

Bangladesh National Health Accounts (BNHA) is the most reliable comprehensive healthcare expenditure database, offering a detailed breakdown of spending categorized by healthcare service providers, the range of services they offer, and the sources of financial backing. This study attempts to redistribute the CHE by beneficiary and the reason behind their utilization of healthcare services. This process requires allocating healthcare expenditure to the beneficiaries (patient) using International Classification of Diseases (ICD), review of literature, published and unpublished documents and, discussions with the officials responsible for implementing various public health programs. According to the BNHA 2020, current health expenditure (CHE) for that year is estimated Taka 71,990 crore. A breakdown of CHE by type of services offered and by financing type is provided in Table 3. Under this study only healthcare expenditure related to "HC.7.1 Governance and health system administration" of CHE is not considered for redistributing by beneficiary.

Table 3: Bangladesh Current health expenditure 2020

HC	Healthcare Services	Government health care financing schemes	Voluntary health care payment schemes	Household out-of-pocket payment	Rest of the world health financing schemes	Current Health Expenditure (CHE)
				Crore Taka		
HC.1.1	Inpatient curative care	3,703.8	508.9	4,321.8	442.8	8,977.3
HC.1.3	Outpatient curative care	4,744.7	572.7	6,915.4	391.5	12,624.3
HC.2.1	Inpatient rehabilitative care	21.2	-	-	-	21.2
HC.3.1	Inpatient long-term care (health)	71.1	-	-	-	71.1
HC.4.1	Laboratory services	28.7	71.4	3,811.4	131.1	4,042.6
HC.4.2	Imaging services	-	-	2,431.9	-	2,431.9
HC.5.1	Pharmaceuticals and other medical non-durable goods	23.4	83.8	35,721.8	275.8	36,104.8
HC.5.2	Therapeutic appliances and other medical goods	-	-	64.6	-	64.6
HC.6.1	Information, education and counseling programmes	1,946.2	446.0	-	1,953.4	4,345.5
HC.6.2	Immunization programmes	235.3	27.9	-	70.0	333.2
HC.6.3	Early diseases detection programmes	48.6	-	-	-	48.6
HC.6.4	Healthy condition monitoring programmes	154.3	-	-	-	154.3
HC.6.5	Epidemiological surveillance and risk and disease control programmes	338.6	64.0	-	549.4	952.0
HC.7.1	Governance and health system administration	1,676.1	57.3	6.9	78.3	1,818.6
		-	-	-	-	-
Total	Total Current Health Expenditure (CHE)	12,991.8	1,832.0	53,274.0	3,892.2	71,989.9

As recommended in SHA2011 guideline (OECD, 2008), this study calculate direct medical costs by disease using a prevalence-based method with top-down cost attribution. This process adopted for this study can be broken down into four key steps:

- Only current health expenditure (CHE) reported under BNHA 2020 is analyzed for distributing them to patient by age, sex and disease or conditions.
- For redistribution of CHE to patient, unit cost of inpatient and outpatient care is calculated by type of facilities and services availed. To be more specific, bed day cost for an inpatient admitted in a medical college hospital versus district hospital or a private hospital so and so forth was calculated considering all services they have utilized (e.g., medicine, pathology, radiology, etc.). Similarly, cost of outpatient visit in the government or private hospital is also calculated.
- Combination of patient data (age, sex, disease, and length of stay or number of visit) with facility costing data is used in creating a comprehensive probability map, representing proportional distribution across all combinations.
- Multiplying the health expenditure for a homogeneous unit by the probability map is used to establish a partial cost of illness table for that unit. Aggregating these partial tables for each unit is therefore used in calculation of the total cost of disease and condition.

With the specific objective of estimating expenditure by disease, the study used data from multiple studies that includes: (i) Healthcare Facility Survey 2020 (HFS2020); (ii) Inpatient Admissions Records Survey 2020; (iii) Outpatient Survey 2022; (iv) Pharmacy Patient Survey 2022; and (v) Household Income and Expenditure Survey (HIES) 2016. A brief description of secondary data to be used under this study is provided below.

(i) **Healthcare Facility Survey 2020 (HFS2020):** This was a nationally representative survey of costs and expenditures at public and private healthcare facilities. The survey will allow estimation of key cost components and inputs including expenditure on pharmaceuticals by type of facility. A total of 160 healthcare facilities were surveyed by HEU as part of its hospital costing study. Under this study, procurement, and disbursement of medicine amongst patients will be collected, coded, and linked with patients. The distribution of the healthcare facilities surveyed is provided in Table 1.

(ii) **Inpatient Admissions Records Survey 2020:** This HEU survey collected data on the characteristics and treatment of a national sample of inpatients from both public and private healthcare facilities. A total of 11,376 inpatients records (Table 4) were collected from public and private hospitals including NGOs. This patient data will be combined with the cost data from the HFS2020 to estimate the distribution of healthcare spending by different types of inpatients, from which the expenditures on pharmaceuticals by diseases and conditions will be derived.

(iii) **Outpatient Survey 2022:** This survey of outpatient was conducted at the same facilities surveyed in the HFS2020. A total of 5,357 outpatients' data were collected from public and private hospitals

including NGOs (Table 4). Through an exit interview, patients were asked to share their prescription or note from the doctor where reasons for encounter is written, and medication recommended. The survey will allow estimating expenditure on pharmaceuticals by type of diseases and conditions.

Table 4: Healthcare Facilities Surveyed to Collect Facility Costing and Utilization Data

Facility Type	Sample	Inpatient	Outpatient
Medical College Hospital	11	2,242	660
Specialty Postgraduate Institute & Hospital	11	1,153	351
Dental College Hospital	1	207	50
General Hospital (not district hospital)	2	310	103
200-250 bed Hospital (not district hospital)	12	1,829	623
District Hospital	2	305	94
Infectious Disease Hospital	2	204	51
Upazila Health Complex	8	2,779	879
50-bed Hospital	1	101	32
31-bed Hospital	2	54	62
20-bed Hospital	2	54	61
Chest Hospital	6	614	81
Chest Disease Clinic	10		293
Union Health Center	3		93
Union Sub-center	8		249
Urban Dispensary	2		65
Trauma Center	1		31
Union Health & Family Welfare Center (UH&FWC)	2		62
Family Planning Clinic	3		95
Community Clinic	10		311
MCWC	7	319	217
Private and NGO Hospital/Clinic	34	1205	894
Total	**160**	**11,376**	**5,357**

(iv) **Pharmacy Patient Survey 2022:** This was a national survey of pharmacy customers and sales conducted by IQVIA (Bangladesh). A total of around 10,500 pharmacies patients' data were collected from a panel of pharmacy maintained by IQVIA. This data will be combined with aggregate estimates of pharmaceutical market sales produced by IQVIA (Bangladesh) to estimate the distribution of pharmacy expenditures by different types of patients.

(v) **Household Income and Expenditure Survey (HIES) 2016:** This was a national household budget survey conducted by Bangladesh Bureau of Statistics (BBS). It will be used in redistributing the pharmaceutical expenditure estimates across all divisions. The HIES 2016 was a large-scale survey of 2,304 Primary Sampling Units (PSUs) comprising 46,080 households.

The financial outlay linked to disease/condition costs in Bangladesh predominantly derives from three key provider categories: (i) governmental institutions, primarily MOHFW hospitals and outpatient centers; (ii) private healthcare establishments, encompassing non-governmental facilities and private practitioners; and (iii) retail pharmaceutical outlets, commonly referred to as pharmacies, which dispense medications to households. BNHA is the most dependable data source to capture expenditures within these three healthcare expenditure domains, sourced from both public and private financing streams.

The data analysis process for this task is conducted in three distinct phases. The initial phase involved identification and classification of all pharmaceutical expenditures for the year 2020 under Bangladesh Health Accounts Sixth Round (BNHA-VI), directly associated with specific diseases or conditions. These expenditures were coded in alignment with their respective disease classifications. Phase II entailed coding of records from inpatient and outpatient cases, along with patient data from pharmacies, utilizing the International Classification of Disease (ICD) and the International Classification of Primary Care (ICPC). Following the completion of disease coding, under Phase III, further segmentation of expenditure data was followed considering disease, age, and gender categories, employing the top-down methodology proposed within the OECD guideline.

In addition to usage of the data sets mentioned earlier, the study team visited public and private healthcare facilities for collecting additional information that BNHA or other studies did not provide. For example, under BNHA how much a health care facility has spent in procurement of drugs is collected, but no details on types of medicine is solicited. Such type of data was collected. The study team visited government offices in-charge of procurement of various vaccines as government expenditure data on procurement of vaccines provided by the Controller General of Accounts (CGA) for the BNHA studies do not provide such information.

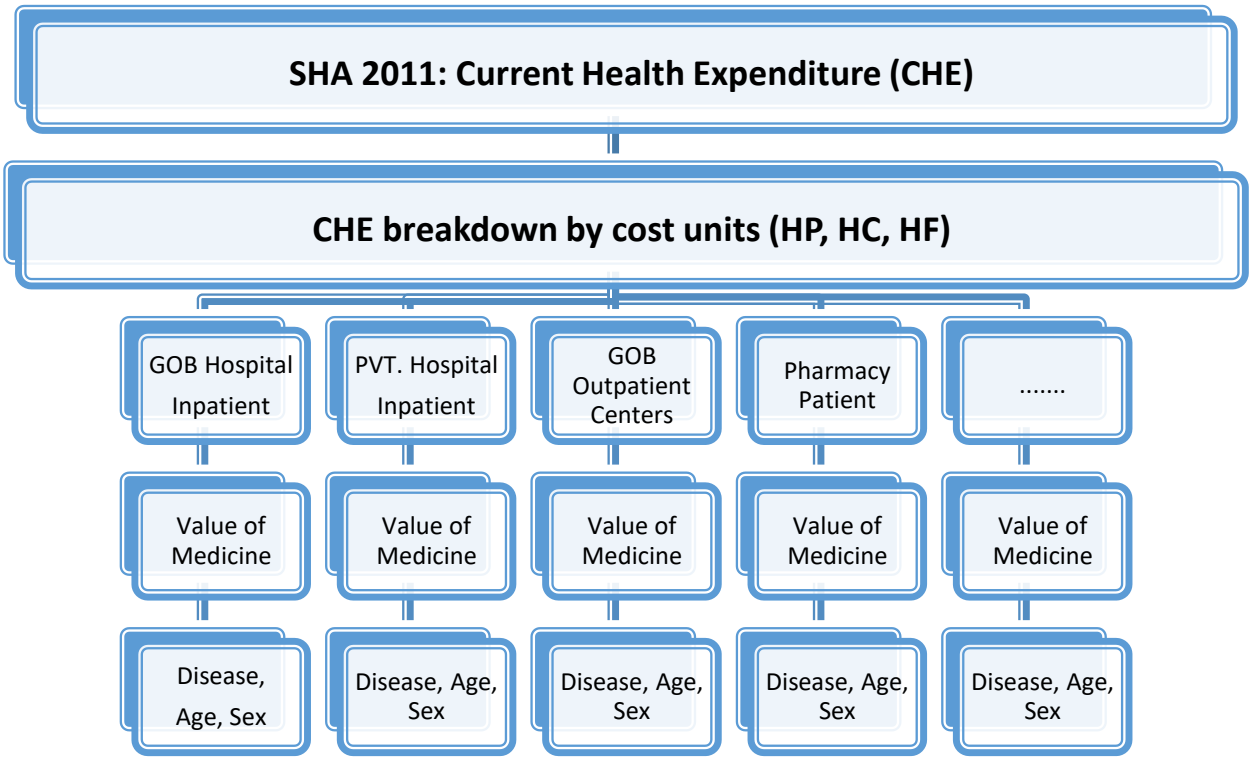
The estimates of pharmaceutical expenditures by diseases and conditions were carried out in several steps. In step 1, detailed data on procurement and utilization of pharmaceuticals by the healthcare providers, and additional patient data was collected to allocate drugs by disease. The key important piece of data for this study was drugs sold by retail drug outlets known as pharmacies, and what type of patient is buying those medicine. In step 2, all data gathered for the study was analyzed to link drug related expenditures with diseases and conditions.

The analysis of the cited cost and utilization data assisted to generate a distribution key to allocate expenditure by patient. Applying the top-down cost accounting approach, healthcare expenses across different types of healthcare facilities were systematically categorized into cost centers. Types of cost centers considered: (i) patient services, which encompass inpatient treatment, outpatient treatment, and preventive care expenditures; (ii) ancillary services, encompassing pharmacy, laboratory, and radiology costs; and (iii) overhead and administrative support expenses. When feasible, inpatient and outpatient costs were further segmented into medical treatment, dental treatment, and family planning services.

Upon categorization of health expenditures into the three major units as delineated above, a distribution key was formulated for each cost unit, grounded in utilization patterns. In constructing this distribution key, six dimensions were taken into account: function, provider, financing schemes, ICD code, gender, and age group. The scale of these keys can vary, ranging from a few combinations to a multitude of permutations. It was of utmost importance that these keys remain comprehensive, with fractions carefully assigned to ensure that they collectively account for 100% of all care dispensed by the respective cost units. The definitive configuration of this intricate probability map was attained through consultation with

the Health Economics Unit (HEU). A schematic depiction outlining the general analysis of disease/condition costs using the top-down methodology is presented in **Figure 3** below.

Figure 3: Steps for Allocating Expenditure by Disease, Age and Sex



A significant aspect of this analysis involved allocating appropriate weights to both hospitals and patients. Utilizing weights to assess the pharmaceutical expenditure enabled national level estimation from the sample-based findings. While the number of days spent in hospitals serves as a valuable metric for a portion of hospital care, it's crucial to acknowledge the substantial cost disparity between a regular ward's hospital day and a day in an intensive care unit.

LIMITATIONS of the Data and the Analysis

The System of Health Accounts (SHA) compatible National Health Accounts (NHA) data is one of the critical data sets used in the production of DSA. Alike many other countries, Bangladesh's NHA is constructed using audited government health expenditure data and expenditure made by the private sector including households. However, Bangladesh is one of such country whose share of private sector spending is much higher than that of the government. According to Bangladesh NHA (BNHA), around 67% of its healthcare expenditure are made by households, where two-third is spent on medicine and only 10% as inpatient expenditure in hospitals. Over the last two decades, BNHA has established a strong protocol (guideline) to capture "expenditure information" from all sources but that has not been the case in obtaining "patient information." Inpatient data was collected from public hospitals while outpatient data was gathered both public and private providers.

Pharmaceuticals sold through "Retail Drug Outlet" known as "Pharmacy" in Bangladesh is the single largest healthcare items are accounted under BNHA. Coding of the Pharmacy Prescription Survey data using International Disease Classification (ICD) version 10 (ICD 10) was found to be a bigger challenge than anticipated. It is the first time HEU used its in-house researchers for coding of the pharmacy patient data. The research team did it's best to code the patient disease and conditions using ICD-10. However, in many instances it was not feasible due to lack of clarity provided in the prescription. A comprehensive training of the HEU researchers used in ICD-10 coding would be helpful for future research.

Expenditures on preventive care incurred in public hospitals are documented and assigned to specific diseases or conditions. The government and NGOs administer immunization programmes, or for the resources allocated to diseases such as Tuberculosis, Malaria, and HIV/AIDS were redistributed accordingly. Nevertheless, this study did not reallocate all other preventive care expenditures across diverse public health programmes to specific diseases due to lack of detailed data availability.

III. Findings

This study primarily aimed to redistribute the recurrent expenditures of the Bangladesh National Health Accounts (BNHA) 2020 towards specific diseases and conditions. Multiple data sources were utilized to create Disease Specific Accounts (DSA). The national estimates of resource allocation for diseases and conditions were derived using both BNHA 2020 data and the data collected during this study. The DSA estimates provided in this report represent the overall expenditure on diseases and conditions, not the cost per individual disease or condition. It attempts to allocate the Current Health Expenditure (CHE) by disease and conditions with a breakdown by age and sex. CHE is basically total health expenditure excluding gross capital formation for the year as well as expenditures related to medical education and research.

Out of the Taka 77,990 Crore Current Health Expenditure (CHE) in 2020, this study allocated approximately 95% of CHE, totaling Taka 68,629 Crore, to diseases and conditions (Table 5). The analysis excluded expenditure estimates related to governance, health system administration, financing administration, preventive care provided by various public and NGO healthcare programmes, and healthcare services as a secondary activity due to insufficient data. Approximately 77% of healthcare spending for disease treatment and health improvement is covered by household out-of-pocket spending (OOPS), with the government accounting for only 20%. The significant portion of household spending is mainly attributed to their expenses on medicines, which amounted to Taka 36,507 Crore in 2020, constituting nearly 69% of OOPS. Table 3 below also provide detailed spending by NGOs and development partners for Disease Specific Accounts (DSA), representing approximately 1% (Taka 713 Crore) and 2% (Taka 1,679 Crore) respectively.

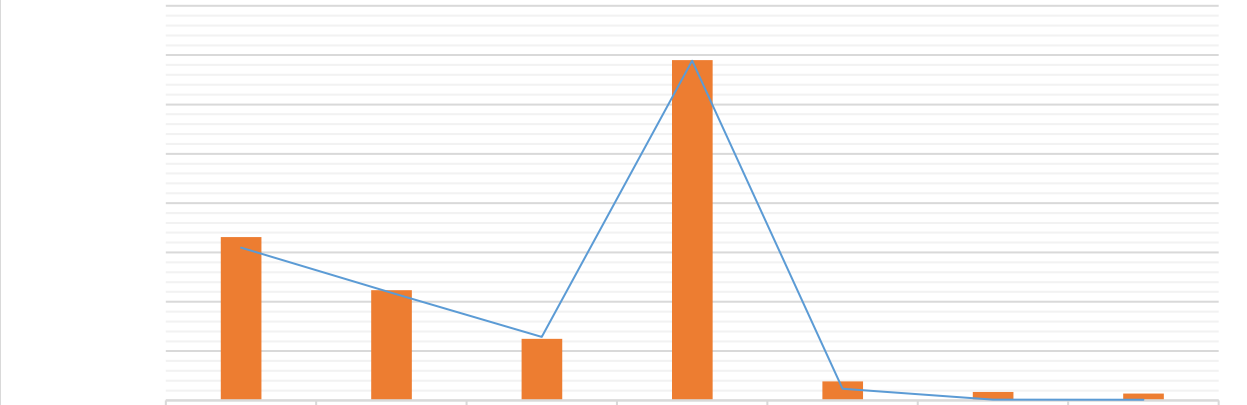
Table 5: Current health expenditure (CHE) by functions and financing schemes, BNHA 2020 (core Taka)

HC		Government health care financing schemes	Voluntary health care payment schemes	Household out-of-pocket payment	Rest of the world health financing schemes	Current Health Expenditure (CHE)
HC.1.1	Inpatient curative care	4,007.9	168.0	3,726.8	-	7,902.7
HC.1.3	Outpatient curative care	4,953.4	144.9	7,768.4	-	12,866.7
HC.4	Ancillary services	952.6	34.2	4,636.9	-	5,623.7
HC.5.1	Pharmaceuticals and other medical non-durable goods	2,195.0	46.1	36,507.2	148.9	38,897.1
HC.6.1	Information, education and counseling programmes	1,157.4	269.2	-	1,183.0	2,609.7
HC.6.2	Immunization programmes	235.3	27.9	-	70.0	333.2
HC.6.3	Early diseases detection programmes	48.6	-	-	-	48.6
HC.6.5	Epidemiological surveillance and risk and disease control programmes	47.3	23.1	-	276.9	347.3
		-	-	-	-	-
Total	Current Health Expenditure	13,597.4	713.4	52,639.3	1,678.9	68,628.9
Row %		19.8%	1.0%	76.7%	2.4%	100.0%

Following the System of Health Accounts (SHA) guideline, BNHA always reported pharmaceuticals expenditure at the healthcare facilities under inpatient and outpatient care. As part of the DSA analysis, pharmaceuticals expenditure (PE) incurred by healthcare facilities has been calculated separately which allowed estimating Total Pharmaceutical Expenditure (TPE) of the country. As a result, total expenditure on pharmaceuticals reported under this study is shown higher compared to the total pharmaceutical expenditure reported under CHE. In 2020, TPE is estimated Taka 35,424 Crore while under BNHA spending on pharmaceuticals is reported Taka 34,502 Crore (Figure 4).

In 2020, the CHE reported a total hospital spending of Taka 16,571 Crore and Taka 11,183 crore for outpatient centers within the Bangladesh National Health Accounts (BNHA). When distributing these expenses according to diseases, this study successfully associated 93% of the hospital expenditure and 85% of the outpatient center costs directly with specific diseases. The lower allocation rate for outpatient centers is primarily due to a significant portion of the effort and resources invested in offering preventive care services, making it challenging to establish a direct link with specific diseases. Likewise, expenses tied to government administration at the central level and financial support from development partners could not be attributed to specific diseases in the majority of instances.

Figure 4: Recurrent Healthcare Expenditure Accounted Under DSA Analysis



	Hospitals	Outpatient centers	Diagnostic	Pharmaceuticals	Preventive care	Administration and financing	Rest of Economy
CHE	16,571.37	11,188.53	6,246.56	34,501.86	1,920.19	875.82	685.59
DSA	15,499.09	10,917.63	6,451.74	34,437.22	1,172.48	79.85	70.91

To report healthcare expenditure by disease and conditions, the International Classification of Diseases (ICD) coding system is widely used by healthcare professionals worldwide. The codes provide a standardized way to record and track diseases and health conditions, aiding in data collection, research, and healthcare management. The tenth edition of ICD (ICD-10) is primarily a classification system based on diseases, disorders, and health conditions, rather than being organized solely by specific organs or body parts. It categorizes diseases and health conditions into chapters based on a wide range of factors, including etiology, affected systems or organs, and other relevant characteristics.

The structure of ICD-10 involves a multi-axial system that includes the following key components:

Chapters: Diseases and conditions are grouped into chapters based on their characteristics, often related to the affected body system or type of disease.
Blocks: Within each chapter, there are blocks that further categorize conditions based on etiology, anatomy, or other relevant factors.
Categories: Each block contains specific categories representing individual diseases, disorders, or health conditions. These categories are assigned alphanumeric codes for standardized identification.

While the primary organization of ICD-10 is based on diseases and health conditions, the structure allows for classification based on organ systems, anatomy, and related factors within the respective chapters and blocks. This allows for a comprehensive and detailed classification of a wide range of medical conditions for various healthcare and administrative purposes.

For example, Chapter II of ICD-10 is "Neoplasms," which includes various categories related to different types of tumors and cancers, regardless of the specific organ or body part affected. Within this chapter, categories further specify the organ or tissue type involved. In summary, while ICD-10 is not strictly an organ or body part-based classification, it does include a structured approach to categorizing diseases and conditions based on various factors, including the affected organs or body systems. For reporting of disease and conditions prevails in Bangladesh, the analysis and tables prepared under this study is limited to Chapters and Blocks.

Table 6 and Figure 2 provide a breakdown of the 21 diseases and conditions classified under ICD-10, along with the respective expenditures for each category for the year 2020. The overall recurrent expenditure on these diseases and conditions in 2020 is estimated to be Taka 67 thousand crore. The highest expenditure is attributed to Diseases of the musculoskeletal system and connective tissue, totaling Taka 9,480 crore, followed by Diseases of the circulatory system (Taka 8,888 crore), Diseases of the digestive system (Taka 8,583 crore), Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified (Taka 7,561 crore), and Diseases of the respiratory system (Taka 5,439 crore). Together, these five disease categories account for 59% of the total disease burden, with the remaining 41% stemming from 15 other categories.

A total of 2,073 diseases and conditions are identified among the 27,836 patients surveyed under this study. As previously mentioned, these diseases and conditions were categorized using the International Classification of Disease (ICD) 10th Revision, a system provided by the World Health Organization (WHO) for statistical classification of diseases and related health problems (ICD-10) (source: https://www.who.int/classifications/icd/icdonlineversions/en/). The ICD-10 comprises 22 chapters, with the first 21 chapters specifying particular diseases and conditions, while chapter 22 contains codes for special purposes. Consequently, the tables presented in this report encompass the same 21 categories and their respective sub-categories.

Table 6: Recurrent Healthcare Expenditure by ICD-10

ICD-10	Classification of Diseases and Conditions	Total	Col.%	Rank
		Crore Taka		
A00-B99	Certain infectious and parasitic diseases	4,149.3	6.0%	6
C00-D48	Neoplasms	1,359.0	2.0%	14
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	358.1	0.5%	19
E00-E90	Endocrine, nutritional and metabolic diseases	2,489.5	3.6%	9
F00-F99	Mental and behavioral disorders	2,043.6	3.0%	13
G00-G99	Diseases of the nervous system	1,130.6	1.6%	15
H00-H59	Diseases of the eye and adnexa	1,090.5	1.6%	16
H60-H95	Diseases of the ear and mastoid process	793.4	1.2%	17
I00-I99	Diseases of the circulatory system	8,864.6	12.9%	3
J00-J99	Diseases of the respiratory system	5,369.4	7.8%	5
K00-K99	Diseases of the digestive system	8,872.1	12.9%	2
L00-L99	Diseases of the skin and subcutaneous tissue	2,247.1	3.3%	12
M00-M99	Diseases of the musculoskeletal system and connective tissue	9,460.9	13.8%	1
N00-N99	Diseases of the genitourinary system	3,394.9	4.9%	7
O00-O99	Pregnancy, child birth and the puerperium	2,476.9	3.6%	10
P00-P96	Certain conditions originating in the perinatal period	98.0	0.1%	21
Q00-Q99	Congenital malformations, deformations and chrosomal abnormalities	273.3	0.4%	20
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	8,009.6	11.7%	4
S00-T98	Injuries, poisoning and certain other consequences of external causes	2,386.5	3.5%	11
U00-U99	Codes for special purposes	6.0	0.0%	22
V01-Y98	External causes of morbidity and mortality	439.6	0.6%	18
Z00-Z99	Factors influencing health status and contact with health services	3,316.1	4.8%	8
Total		68,628.9	100%	

Figure 5: Recurrent Healthcare Expenditure

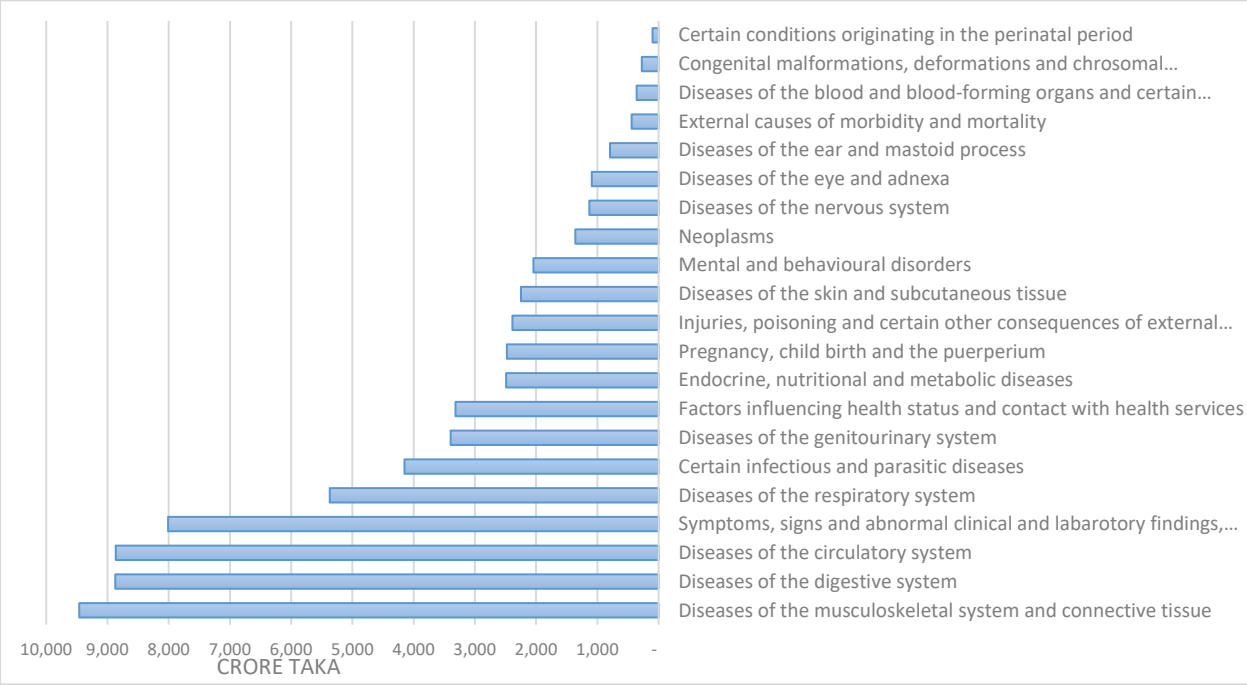
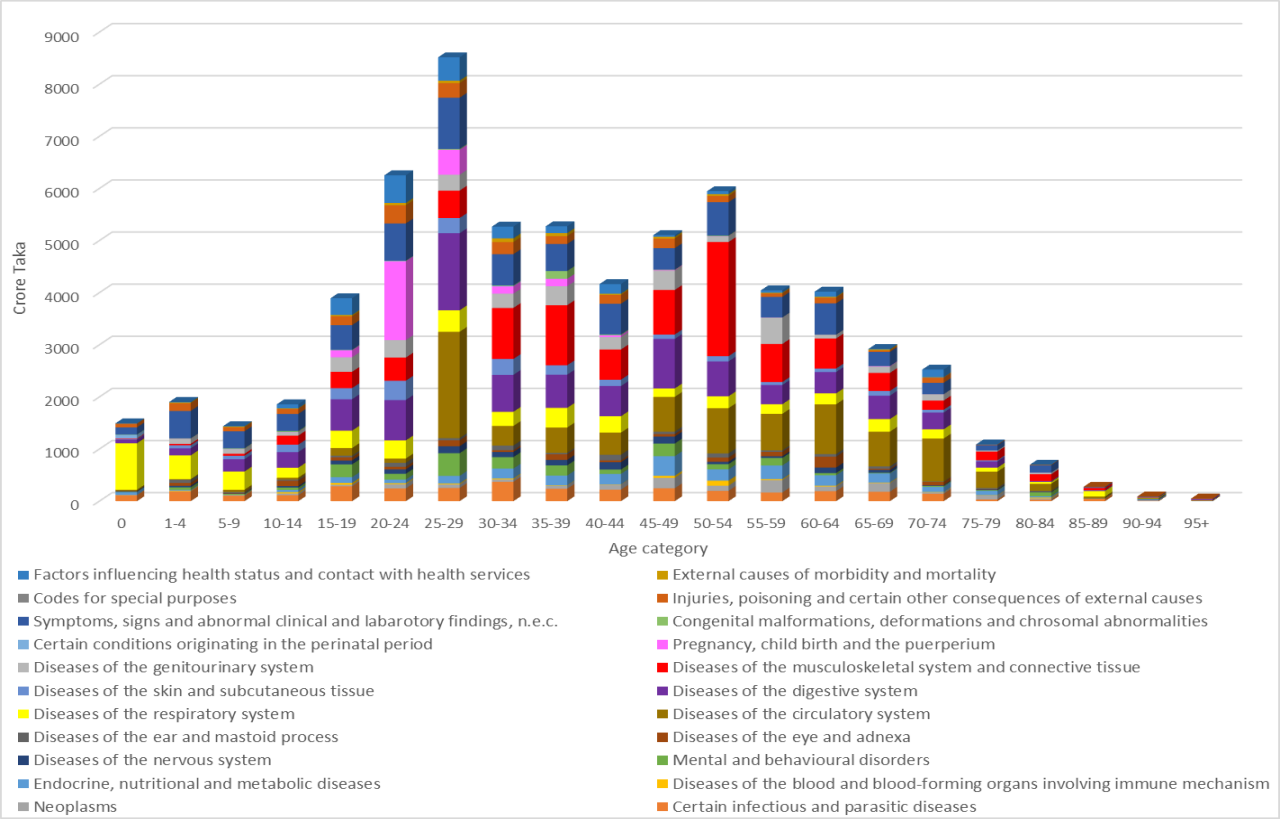


Figure 3 presents the distribution of diseases and conditions across different age categories in 2020. Compared to the other age group categories, those between 25-29 age spent the highest amount on recurrent health expenditure to address their diseases and conditions – Taka 8,518 crore.

While "Diseases of the musculoskeletal system and connective tissue" represent the largest share of expenditure, an age group breakdown indicates such is not always the case for different cohorts. For example, the 25-29 age bracket population spend more on "Diseases of the circulatory system" and "Diseases of the digestive system," amounting to Taka 2,040 crore and Taka 1,479 crore respectively, than on musculoskeletal problems. These two categories combined account for approximately 41% of spending, while around 6% attributed to "Diseases of the musculoskeletal system and connective tissue." Outlays on Diseases of the musculoskeletal system and connective tissue is dominant for the population age between 30 to 64 years.

Figure 6: Recurrent Healthcare Expenditure by Age Group and Diseases



To evaluate changes in disease prevalence trends concerning spending, an analysis was conducted comparing expenditures in 2015 and 2020 by the ICD-10 Chapter. Diseases associated with the musculoskeletal system and connective tissue consistently has the highest share of expenditure in both 2015 and 2020. Nevertheless, only six out of the 22 broader disease categories maintained their relative expenditure share between the years 2015 and 2020.

The ranking of the top five category of financial burden of diseases and conditions for 2020 are compared and presented in parenthesis for the two years respectively:

- Diseases of the musculoskeletal system and connective tissue (1, 2020; 1, 2015)
- Diseases of the circulatory system (2, 2020; 2, 2015)
- Diseases of the digestive system (3, 2020; 4, 2015)
- Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified (4, 2020; 9, 2015)
- Diseases of the respiratory system (5, 2020; 3, 2015)

Table 7: Comparison of Expenditure by ICD-10 Chapter: 2020 and 2015

ICD-10 Chapter	Classification of Diseases and Conditions	2015			2020		
		Crore Taka	Col.%	Rank	Crore Taka	Col.%	Rank
A00-B99	Certain infectious and parasitic diseases	3,110.5	8.0%	5	4,149.3	6.0%	6
C00-D48	Neoplasms	889.3	2.3%	15	1,359.0	2.0%	14
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	127.8	0.3%	19	358.1	0.5%	19
E00-E90	Endocrine, nutritional and metabolic diseases	2,011.4	5.2%	8	2,489.5	3.6%	9
F00-F99	Mental and behavioural disorders	1,491.3	3.8%	11	2,043.6	3.0%	13
G00-G99	Diseases of the nervous system	963.5	2.5%	14	1,130.6	1.6%	15
H00-H59	Diseases of the eye and adnexa	1,008.4	2.6%	13	1,090.5	1.6%	16
H60-H95	Diseases of the ear and mastoid process	734.8	1.9%	18	793.4	1.2%	17
I00-I99	Diseases of the circulatory system	3,541.5	9.1%	4	8,864.6	12.9%	3
J00-J99	Diseases of the respiratory system	3,645.4	9.3%	3	5,369.4	7.8%	5
K00-K99	Diseases of the digestive system	5,098.3	13.1%	2	8,872.1	12.9%	2
L00-L99	Diseases of the skin and subcutaneous tissue	1,499.2	3.8%	10	2,247.1	3.3%	12
M00-M99	Diseases of the musculoskeletal system and connective tissue	5,507.6	14.1%	1	9,460.9	13.8%	1
N00-N99	Diseases of the genitourinary system	2,421.7	6.2%	6	3,394.9	4.9%	7
O00-O99	Pregnancy, child birth and the puerperium	884.6	2.3%	16	2,476.9	3.6%	10
P00-P96	Certain conditions originating in the perinatal period	19.4	0.0%	21	98.0	0.1%	21
Q00-Q99	Congenital malformations, deformations and chrosomal abnormalities	117.1	0.3%	20	273.3	0.4%	20
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	1,600.5	4.1%	9	8,009.6	11.7%	4
S00-T98	Injuries, poisoning and certain other consequences of external causes	2,166.4	5.6%	7	2,386.5	3.5%	11
U00-U99	Codes for special purposes	-	0.0%	22	6.0	0.0%	22
V01-Y98	External causes of morbidity and mortality	756.0	1.9%	17	439.6	0.6%	18
Z00-Z99	Factors influencing health status and contact with health services	1,412.4	3.6%	12	3,316.1	4.8%	8
Total		39,007.1	100%		68,628.9	100%	

Table 8 and Figure 7 depict the breakdown of expenditures categorized by gender. The total recurrent spending on diseases and conditions in 2020 is estimated Taka 26,688 crore for the male population and Taka 41,179 crore for the female population in Bangladesh. Six diseases among the 22 ICD-10 Chapter constitute approximately 66% of the healthcare expenditure for both genders. These include: (1) Diseases of the musculoskeletal system and connective tissue; (2) Diseases of the circulatory system; (3) Diseases of the digestive system; (4) Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified; (5) Diseases of the respiratory system; and (6) Certain infectious and parasitic diseases.

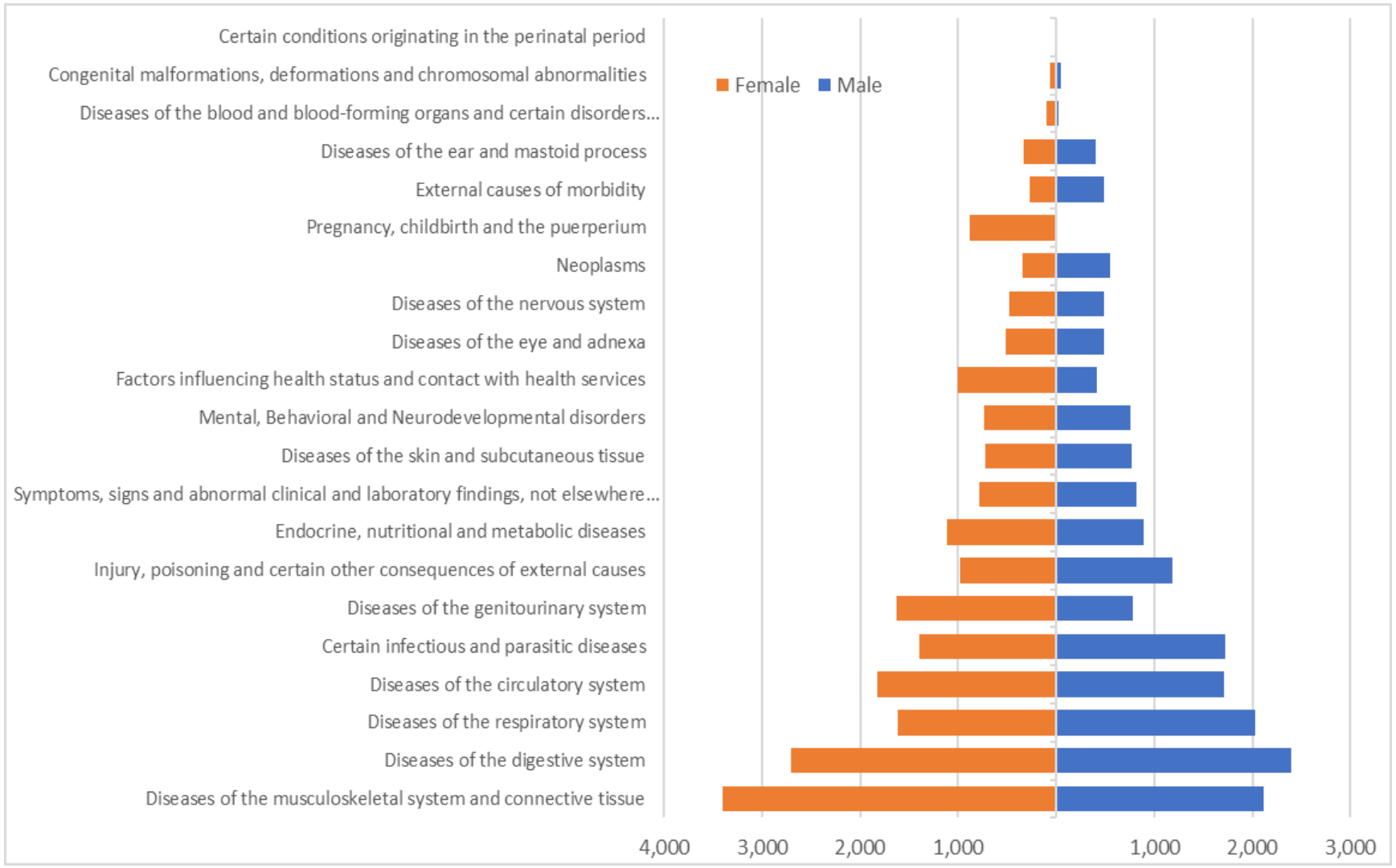
A comparison between males and females regarding these six prevalent diseases indicates that females are more susceptible to Diseases of the musculoskeletal system and connective tissue, Diseases of the

circulatory system, Diseases of the respiratory system, Diseases of the digestive system, and Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified. Conversely, males allocate more funds toward Certain infectious and parasitic diseases compared to females.

Table 8: Recurrent Healthcare Expenditure by Gender

ICD-10	Classification of Diseases and Conditions	Male	Col.%	Female	Col.%
		Values in Crore Taka			
A00-B99	Certain infectious and parasitic diseases	1,519	45%	1,867	55%
C00-D48	Neoplasms	701	52%	658	48%
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	101	28%	257	72%
E00-E90	Endocrine, nutritional and metabolic diseases	888	36%	1,596	64%
F00-F99	Mental and behavioural disorders	929	45%	1,115	55%
G00-G99	Diseases of the nervous system	487	43%	644	57%
H00-H59	Diseases of the eye and adnexa	439	40%	652	60%
H60-H95	Diseases of the ear and mastoid process	314	40%	479	60%
I00-I99	Diseases of the circulatory system	3,249	37%	5,608	63%
J00-J99	Diseases of the respiratory system	2,633	49%	2,736	51%
K00-K99	Diseases of the digestive system	3,851	43%	5,018	57%
L00-L99	Diseases of the skin and subcutaneous tissue	1,142	51%	1,104	49%
M00-M99	Diseases of the musculoskeletal system and connective tissue	3,459	37%	6,001	63%
N00-N99	Diseases of the genitourinary system	994	29%	2,401	71%
O00-O99	Pregnancy, child birth and the puerperium	-	0%	2,477	100%
P00-P96	Certain conditions originating in the perinatal period	28	29%	70	71%
Q00-Q99	Congenital malformations, deformations and chrosomal abnormalities	63	23%	211	77%
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	3,758	47%	4,251	53%
S00-T98	Injuries, poisoning and certain other consequences of external causes	1,350	57%	1,036	43%
U00-U99	Codes for special purposes	5	81%	1	19%
V01-Y98	External causes of morbidity and mortality	306	70%	134	30%
Z00-Z99	Factors influencing health status and contact with health services	472	20%	1,864	80%
Total		26,688	40%	40,179	60%

Figure 7: Recurrent Healthcare Expenditure 2020 by Sex and ICD-10



Analysis of expenditure based on age groups for various diseases and conditions reveal that 58% of the recurrent spending designated for patients are directed towards treating the reproductive age group (ages 15-49). Upon further breakdown of this age group by gender, it is observed that 64% of female healthcare expenses and 50% of male healthcare expenses pertain to individuals aged between 15 and 49 (Table 9).

Table 9: Recurrent Healthcare Expenditure by Age Group and Gender

Age Group	Male		Female		Total	
	Crore Taka	Col.%	Crore Taka	Col.%	Crore Taka	Col.%
0	422.0	1.6%	1072.2	2.7%	1494.2	2.2%
1-4	1271.0	4.8%	633.8	1.6%	1904.8	2.8%
5-9	736.3	2.8%	703.2	1.8%	1439.4	2.2%
10-14	874.4	3.3%	984.9	2.5%	1859.2	2.8%
15-19	1324.3	5.0%	2570.4	6.4%	3894.7	5.8%
20-24	1522.0	5.7%	4731.7	11.8%	6253.7	9.4%
25-29	2098.9	7.9%	6419.3	16.0%	8518.2	12.7%
30-34	2120.1	7.9%	3147.1	7.8%	5267.3	7.9%
35-39	2095.1	7.9%	3178.5	7.9%	5273.6	7.9%
40-44	1825.5	6.8%	2340.7	5.8%	4166.2	6.2%
45-49	1825.7	6.8%	3280.7	8.2%	5106.5	7.6%
50-54	2319.5	8.7%	3629.1	9.0%	5948.5	8.9%
55-59	1968.1	7.4%	2074.3	5.2%	4042.3	6.0%
60-64	1978.8	7.4%	2042.2	5.1%	4021.0	6.0%
65-69	1695.4	6.4%	1226.3	3.1%	2921.7	4.4%
70-74	1334.7	5.0%	1190.8	3.0%	2525.4	3.8%
75-79	576.5	2.2%	512.1	1.3%	1088.6	1.6%
80-84	418.6	1.6%	280.8	0.7%	699.4	1.0%
85-89	202.6	0.8%	73.8	0.2%	276.4	0.4%
90-94	33.2	0.1%	57.5	0.1%	90.7	0.1%
95+	39.7	0.1%	11.5	0.0%	51.2	0.1%
Age missing	5.8	0.0%	18.4	0.0%	24.3	0.0%
Total	26687.9	100.0%	40179.1	100.0%	66867.0	100.0%

As evident in Figure 8, expenditure follows an increasing trend from birth up to the age of 29, following which there is a decrease in spending for the age range of 29 to 44. It is documented under the BNHA that expenditure on medicine accounts for the largest share of healthcare expenditure in Bangladesh. Breakdown of healthcare expenditure by age category and type of services shows that medicine as the major component of healthcare expenditure start to dominate from the age of 10 and continues till they reach 84 years.

The per-capita healthcare spending within each age category is determined by distributing the estimated expenditure amongst the total population within that group. In 2020, the per capita healthcare expenditure starts at Taka 6,000 at birth (age 0), gradually declines until around Taka 1,000 by age 10, and then begins to increase again. It peaks at around Taka 12,000 for individuals aged 85 and over. The breakdown of per-capita healthcare expenditure by age category underscores the greater healthcare

burden faced by the aging population in contrast to the younger demographic. The average per-capita health expenditure for the 15-50 age category is approximately Taka 4,679, while it rises to Taka 9,757 for those within the 51-85 age bracket (Figure 9).

Figure 8: Recurrent Healthcare Expenditure 2020 by Age Group and Healthcare Function

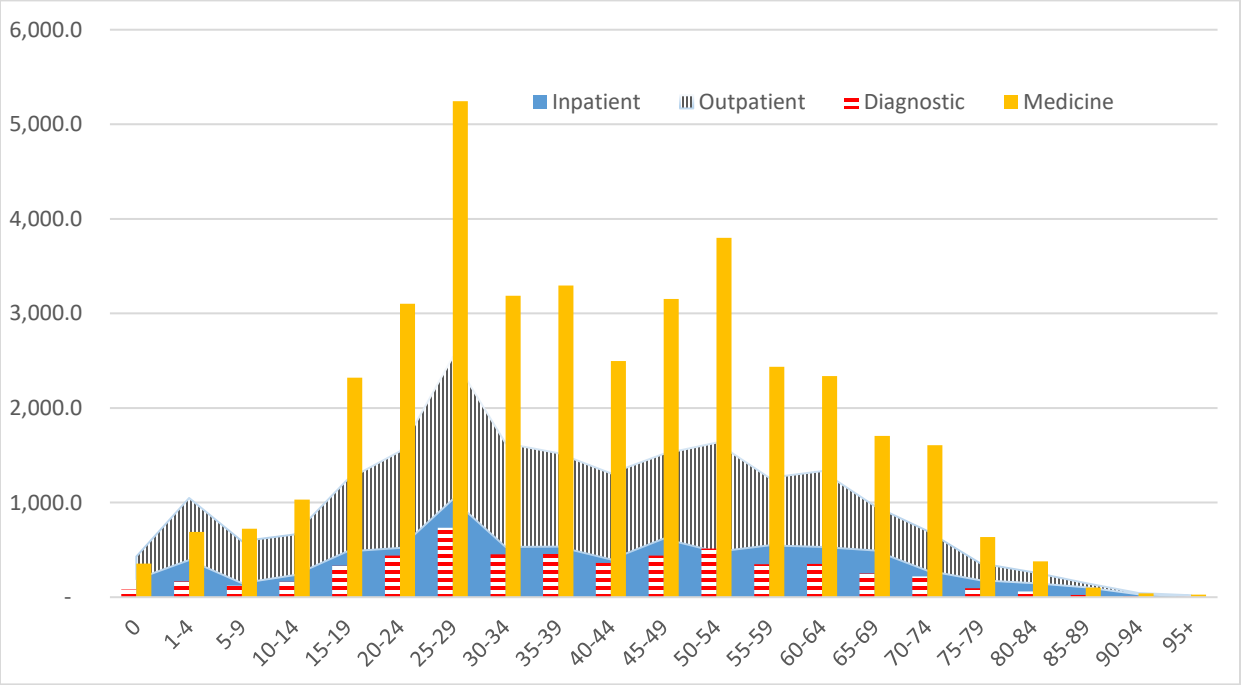


Figure 9: Recurrent Healthcare Expenditure 2020 by Age Group and Healthcare Function

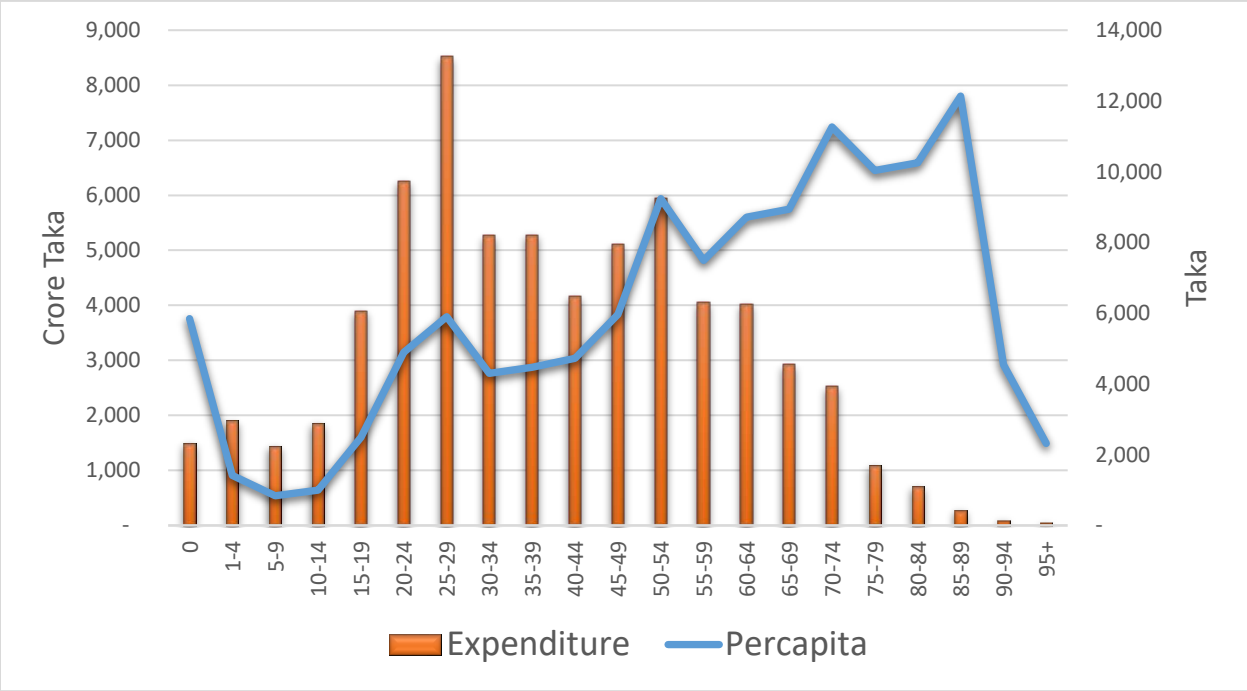
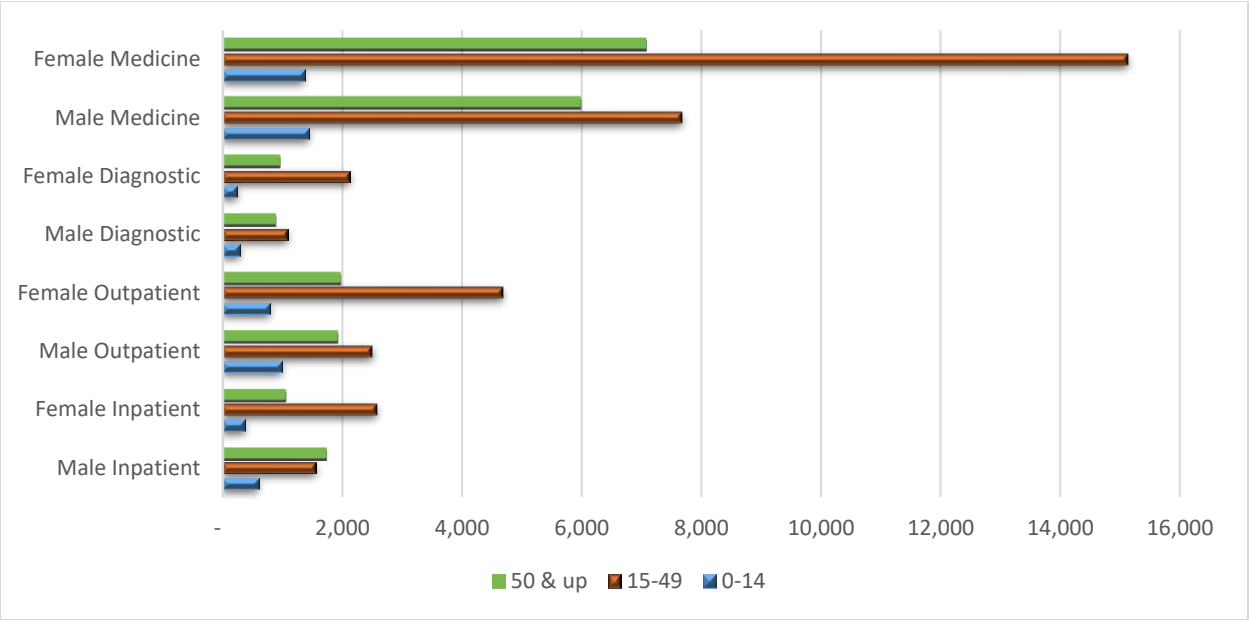


Table 10 and Figure 7 display spending patterns across age groups and genders for four healthcare functions: inpatient care, outpatient care, ancillary services and medication. Individuals aged 15-49, regardless of gender, spend significantly more on all the three categories mentioned compared to their younger or older counterparts. The yearly expenditure on medications within the 15-49 age group totals Taka 15,127 crore for females and Taka 7,669 crore for males. A detailed breakdown of patients within this age range, categorized by disease, indicates that females allocate a notably higher sum towards medicine for managing pain related to musculoskeletal system and connective tissue conditions.

Table 10: Recurrent Healthcare Expenditure by Age Group and Gender

Age Group	Male Inpatient	Female Inpatient	Male OPD	Female OPD	Male Diagnos.	Female Diagnos.	Male Medicine	Female Medicine	Total Male	Total Male
0-14	591	374	982	788	289	243	1,442	1,362	3,304	2,766
15-49	1,551	2,574	2,499	4,677	1,093	2,124	7,669	15,127	12,812	24,502
50 & up	1,744	1,069	1,932	1,981	903	969	5,988	7,078	10,567	11,098
Total	3,886	4,017	5,414	7,447	2,284	3,336	15,098	23,567	26,682	38,366

Figure 10: Recurrent Healthcare Expenditure 2020 by Age Group, Sex and Healthcare Function



An analysis of healthcare spending across different age groups comparing the years 2015 and 2020 shows that population aged between 25-29 years spend the most on healthcare accounting Taka 8,518 crore in 2020 which was Taka 4,178 crore in 2015.

Table 11: Healthcare spending across different age groups comparing the years 2015 and 2020.

Age Category	2015			2020		
	Crore Taka	Col.%	Rank	Crore Taka	Col.%	Rank
0	129.5	0.3%	18	1,494.2	2.2%	15
1-4	1,217.1	3.1%	15	1,904.8	2.8%	13
5-9	1,290.0	3.3%	14	1,439.4	2.1%	16
10-14	1,496.8	3.8%	12	1,859.2	2.7%	14
15-19	2,243.1	5.8%	9	3,894.7	5.7%	10
20-24	3,743.4	9.6%	2	6,253.7	9.1%	2
25-29	4,178.3	10.7%	1	8,518.2	12.4%	1
30-34	3,423.8	8.8%	4	5,269.1	7.7%	5
35-39	3,175.4	8.1%	6	5,275.2	7.7%	4
40-44	2,614.8	6.7%	7	4,166.2	6.1%	7
45-49	3,265.1	8.4%	5	5,106.5	7.4%	6
50-54	3,507.8	9.0%	3	5,948.5	8.7%	3
55-59	2,183.1	5.6%	10	4,045.8	5.9%	8
60-64	2,382.0	6.1%	8	4,021.0	5.9%	9
65-69	1,492.9	3.8%	13	2,921.7	4.3%	11
70-74	1,610.9	4.1%	11	2,525.6	3.7%	12
75-79	601.4	1.5%	16	1,088.6	1.6%	17
80-84	299.7	0.8%	17	699.4	1.0%	18
85-89	99.4	0.3%	19	276.4	0.4%	19
90-94	38.6	0.1%	20	90.7	0.1%	20
95+	14.2	0.0%	21	51.2	0.1%	21
Age Missing				1,779.2	2.6%	
Total	39,007.05	100%		68,628.9	100%	

Table 12 provides recurrent expenditures by inpatient, outpatient, diagnostic, pharmaceutical and portion of preventive care that can be linked directly to a disease or conditions. Of the diseases classified under the 21 ICD-10 chapter, for only 5 for certain diseases and conditions, resources allocated to curative and diagnostic care surpass the costs associated with medication. These include Neoplasms, Certain conditions originating in the perinatal period, Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified, Injuries, poisoning and certain other consequences of external causes, External causes of morbidity and mortality.

A detailed breakdown of the total recurrent cost by curative care and medication indicate that the remaining diseases and conditions necessitate relatively higher resources for medication compared to curative care. On average, share of medicine outlay for all other disease is around 62% of the total curative care where the highest share of expenditure on medicine (72%) is reported for the diseases of the musculoskeletal system and connective tissue.

Table 12: Recurrent Healthcare Expenditure with Breakdown of Cost by Function

ICD10	Classification of Diseases and Conditions	Inpatient	Outpatient	Diagnostic	Pharmaceutical	Preventive	Total
		Crore Taka	Crore Taka	Crore Taka	Crore Taka	Crore Taka	Crore Taka
A00-B99	Certain infectious and parasitic diseases	712.5	691.7	284.0	1,897.5	563.7	4,149.3
C00-D48	Neoplasms	620.4	188.4	99.2	451.0	-	1,359.0
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	29.8	57.1	30.2	241.0	-	358.1
E00-E90	Endocrine, nutritional and metabolic diseases	383.5	385.8	213.7	1,506.5	-	2,489.5
F00-F99	Mental and behavioural disorders	282.3	288.1	175.2	1,298.0	-	2,043.6
G00-G99	Diseases of the nervous system	222.1	164.0	95.5	648.9	-	1,130.6
H00-H59	Diseases of the eye and adnexa	80.9	247.1	98.1	664.5	-	1,090.5
H60-H95	Diseases of the ear and mastoid process	11.9	162.4	68.1	550.9	-	793.4
I00-I99	Diseases of the circulatory system	658.6	1,307.5	773.8	6,124.6	-	8,864.6
J00-J99	Diseases of the respiratory system	574.4	782.7	413.2	2,970.9	628.2	5,369.5
K00-K99	Diseases of the digestive system	938.6	1,662.1	774.4	5,497.1	-	8,872.1
L00-L99	Diseases of the skin and subcutaneous tissue	43.3	481.4	195.3	1,527.1	-	2,247.1
M00-M99	Diseases of the musculoskeletal system and connective tissue	330.2	1,533.6	825.6	6,771.5	-	9,460.9
N00-N99	Diseases of the genitourinary system	559.9	567.7	293.0	1,974.2	-	3,394.9
O00-O99	Pregnancy, child birth and the puerperium	314.5	199.1	116.1	680.5	1,166.7	2,476.9
P00-P96	Certain conditions originating in the perinatal period	61.4	12.5	8.3	15.8	-	98.0
Q00-Q99	Congenital malformations, deformations and chrosomal abnormalities	72.2	34.5	22.3	144.2	-	273.3
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	892.6	2,988.3	699.9	3,428.8	-	8,009.6
S00-T98	Injuries, poisoning and certain other consequences of external causes	491.5	542.1	194.2	1,158.7	-	2,386.5
U00-U99	Codes for special purposes	-	0.8	0.6	4.6	-	6.0
V01-Y98	External causes of morbidity and mortality	222.2	53.7	36.4	127.4	-	439.6
Z00-Z99	Factors influencing health status and contact with health services	400.2	515.7	206.6	1,213.4	980.2	3,316.1
Total		7,902.7	12,866.7	5,623.6	38,897.1	3,338.7	68,628.9

Table 13 presents recurrent healthcare expenses categorized by diseases and conditions for five age groups, ranging from age 0 to 70 and above. The total recurrent expenditure for children under 5 years old amounts to Taka 3,399 crore. The largest portion of spending for this group is on diseases of the respiratory system, totaling Taka 1,347 crore, followed by Taka 663 crore allocated for the treatment of symptoms, signs, and abnormal clinical and laboratory findings not elsewhere classified.

For children aged between 5-14, the total recurrent expenditure is Taka 3,299 crore. The primary expenditure in this category is for symptoms, signs, and abnormal clinical and laboratory findings not elsewhere classified amounting Taka 655 crore, followed by diseases of the respiratory system and diseases of the digestive system, amounting to Taka 539 crore and Taka 538 crore respectively.

According to Table 13, individuals aged 15-49 contribute the largest share of total recurrent healthcare expenditure, accounting for Taka 38,483 crore (56%). The major expenditures in this age group are on diseases of the digestive system (Taka 5,733 crore), diseases of the musculoskeletal system and connective tissue (Taka 4,848 crore), and diseases of the circulatory system (Taka 4,225 crore).

One-fourth of the recurrent healthcare expenditure is accounted under the age group 50-69 amounting Taka 16,937 crore in 2020. Four types of diseases, Diseases of the musculoskeletal system and connective tissue (Taka 3,844 crore), Diseases of the circulatory system (Taka 3,187 crore), Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (Taka 1,910 crore) and Diseases of the digestive system (Taka 1,89 crore) under this age category (year 50-69) accounts for around 64% of the expenditure reported for the group.

The recurrent expenditure distributed by disease and age for individuals aged 70 and above indicates a spending of Taka 4,732 crore in 2020. The major expenditures for this group are on diseases of the circulatory system (Taka 1,324 crore), followed by Taka 522 crore for diseases of the musculoskeletal system and connective tissue disorders, and Taka 495 crore for Diseases of the digestive system. Further disaggregation of the 21 ICD-10 broader category by age is presented in Table 14.

Table 13: Recurrent Healthcare Expenditure by Age Group

ICD-10	Classification of Diseases and Conditions	0-4	5-14	15-49	50-69	70 & up	Age missing	Total
A00-B99	Certain infectious and parasitic diseases	296.3	220.5	1,862.7	740.0	266.5	763.4	9,062.1
C00-D48	Neoplasms	13.2	40.7	581.4	593.1	130.6	-	2,718.1
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	13.6	30.6	142.3	140.2	31.5	-	716.2
E00-E90	Endocrine, nutritional and metabolic diseases	70.4	49.9	1,280.9	853.4	230.5	4.4	4,983.5
F00-F99	Mental and behavioural disorders	50.5	58.2	1,529.8	297.2	107.8	-	4,087.1
G00-G99	Diseases of the nervous system	41.6	33.8	772.1	239.9	43.2	-	2,261.1
H00-H59	Diseases of the eye and adnexa	59.0	112.1	449.8	395.0	74.7	-	2,181.1

ICD-10	Classification of Diseases and Conditions	0-4	5-14	15-49	50-69	70 & up	Age missing	Total
H60-H95	Diseases of the ear and mastoid process	64.1	43.6	420.5	207.8	54.0	3.4	1,590.2
I00-I99	Diseases of the circulatory system	33.3	82.5	4,225.0	3,187.2	1,324.3	12.3	17,741.5
J00-J99	Diseases of the respiratory system	1,347.3	538.8	2,216.7	863.5	401.0	2.1	10,741.0
K00-K99	Diseases of the digestive system	208.1	537.8	5,733.3	1,896.6	495.1	1.1	17,745.2
L00-L99	Diseases of the skin and subcutaneous tissue	68.2	208.4	1,567.5	316.2	86.8	-	4,494.2
M00-M99	Diseases of the musculoskeletal system and connective tissue	37.9	210.2	4,847.6	3,843.6	521.6	-	18,921.8
N00-N99	Diseases of the genitourinary system	95.0	156.8	2,170.2	796.0	174.9	2.1	6,791.8
O00-O99	Pregnancy, child birth and the puerperium	3.4	4.6	2,447.3	17.0	2.6	2.0	4,955.8
P00-P96	Certain conditions originating in the perinatal period	70.2	3.0	21.6	2.4	0.8	-	196.1
Q00-Q99	Congenital malformations, deformations and chrosomal abnormalities	12.5	29.2	209.4	20.1	2.2	-	546.5
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	663.0	654.9	4,292.8	1,909.6	487.0	2.3	16,021.5
S00-T98	Injuries, poisoning and certain other consequences of external causes	219.5	173.3	1,532.2	322.4	134.3	4.6	4,777.6
U00-U99	Codes for special purposes	-	-	0.5	0.8	4.7	-	11.9
V01-Y98	External causes of morbidity and mortality	15.5	25.4	305.5	83.8	8.1	1.2	880.5
Z00-Z99	Factors influencing health status and contact with health services					149.8	980.2	5,426.3
						-	-	-
Total		3,398.9	3,298.7	38,483.4	16,937.0	4,731.7	1,779.2	68,628.9

Note: Values are in Crore Taka

Table 14: Recurrent Healthcare Expenditure 2020 by Broader Age group and International Disease Classification Chapter Heading

ICD10	Classification of Diseases and Conditions	0	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49
A00-B99	Certain infectious and parasitic diseases	112.8	183.5	105.7	114.9	285.6	245.1	253.1	372.0	238.0	221.3	247.5
C00-D48	Neoplasms	6.6	6.5	7.9	32.8	29.8	80.4	68.6	47.4	59.6	95.8	199.9
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	1.2	12.4	3.9	26.6	35.3	19.9	17.7	16.7	6.7	5.0	41.1
E00-E90	Endocrine, nutritional and metabolic diseases	52.9	17.5	6.3	43.5	110.2	70.5	145.8	190.1	187.5	201.2	375.6
F00-F99	Mental and behavioural disorders	5.3	45.2	15.4	42.9	244.8	110.2	435.3	219.1	194.7	83.2	242.6
G00-G99	Diseases of the nervous system	10.5	31.1	5.3	28.5	75.1	83.0	134.4	98.8	105.4	141.9	133.3
H00-H59	Diseases of the eye and adnexa	5.1	53.9	9.0	103.1	59.7	52.0	112.8	34.1	109.0	34.3	48.0
H60-H95	Diseases of the ear and mastoid process	1.7	62.4	21.4	22.2	32.4	75.0	43.3	89.7	25.4	108.1	46.6
I00-I99	Diseases of the circulatory system	22.5	10.8	44.9	37.7	146.7	82.8	2,039.9	375.6	487.1	425.3	667.5
J00-J99	Diseases of the respiratory system	892.0	455.3	348.7	190.1	333.5	346.9	412.2	271.6	377.4	313.9	161.2
K00-K99	Diseases of the digestive system	71.7	136.4	237.6	300.3	603.3	775.6	1,479.3	709.0	636.7	579.7	949.9
L00-L99	Diseases of the skin and subcutaneous tissue	10.6	57.6	66.4	142.0	212.8	370.8	292.1	304.7	180.6	121.1	85.2
M00-M99	Diseases of the musculoskeletal system and connective tissue	9.8	28.1	37.1	173.1	312.7	443.5	525.4	979.3	1,152.5	579.8	854.5
N00-N99	Diseases of the genitourinary system	2.3	92.7	91.8	65.0	280.3	335.7	304.4	274.3	364.5	238.9	372.1
O00-O99	Pregnancy, child birth and the puerperium	0.6	2.8	1.6	3.0	133.4	1,512.0	477.6	139.5	140.7	32.8	11.4
P00-P96	Certain conditions originating in the perinatal period	67.5	2.7	1.7	1.3	2.6	4.4	2.1	8.0	1.4	3.0	0.0
Q00-Q99	Congenital malformations, deformations and chrosomal abnormalities	5.7	6.8	10.1	19.1	7.2	7.3	15.8	10.2	148.9	13.9	6.0
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	137.3	525.7	326.1	328.8	473.0	715.2	983.0	599.9	518.7	590.1	413.0
S00-T98	Injuries, poisoning and certain other consequences of external causes	70.4	149.1	76.7	96.6	170.4	347.7	279.0	232.0	150.3	169.0	183.9
U00-U99	Codes for special purposes	-	-	-	-	-	-	0.5	-	-	-	-
V01-Y98	External causes of morbidity and mortality	1.7	13.8	16.0	9.4	24.8	44.7	47.9	71.3	59.8	22.1	34.9
Z00-Z99	Factors influencing health status and contact with health services	6.0	10.5	5.9	78.3	321.2	530.9	448.0	225.8	130.3	185.8	32.4
Total		1,494.2	1,904.8	1,439.4	1,859.2	3,894.7	6,253.7	8,518.2	5,269.1	5,275.2	4,166.2	5,106.5

Note: Values are in Crore Taka

Table 14: Recurrent Healthcare Expenditure 2020 by Broader Age group and International Disease Classification Chapter Heading (continued)

ICD10	Classification of Diseases and Conditions	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94	95+	Total
A00-B99	Certain infectious and parasitic diseases	198.3	167.1	192.6	182.0	143.7	32.2	29.1	50.0	11.1	0.4	4,149.3
C00-D48	Neoplasms	99.9	238.9	89.9	164.4	25.3	76.1	26.7	-	2.6	-	1,359.0
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	96.2	18.1	15.3	10.5	6.0	6.0	15.8	2.3	1.1	0.4	358.1
E00-E90	Endocrine, nutritional and metabolic diseases	216.2	261.1	200.1	176.0	100.1	83.6	25.1	0.8	19.4	1.6	2,489.5
F00-F99	Mental and behavioural disorders	100.0	145.0	41.2	11.1	17.7	13.1	73.4	3.6	-	-	2,043.6
G00-G99	Diseases of the nervous system	45.9	32.1	106.1	55.8	13.1	13.6	7.0	5.7	3.7	-	1,130.6
H00-H59	Diseases of the eye and adnexa	80.5	84.1	209.2	21.2	62.3	5.9	3.6	-	-	2.8	1,090.5
H60-H95	Diseases of the ear and mastoid process	80.7	28.8	50.6	47.7	8.5	23.5	16.4	-	5.7	-	793.4
I00-I99	Diseases of the circulatory system	867.5	700.7	954.2	664.9	825.8	313.6	137.1	27.9	16.7	3.3	8,864.6
J00-J99	Diseases of the respiratory system	227.5	185.0	209.9	241.1	177.0	75.3	32.9	104.8	5.5	5.4	5,369.4
K00-K99	Diseases of the digestive system	668.8	368.9	408.8	450.1	321.1	121.3	10.0	12.8	5.1	24.7	8,872.1
L00-L99	Diseases of the skin and subcutaneous tissue	101.2	57.1	67.5	90.4	53.0	21.0	8.2	3.6	0.9	-	2,247.1
M00-M99	Diseases of the musculoskeletal system and connective tissue	2,190.9	730.0	576.1	346.6	177.5	166.6	132.6	42.7	2.2	-	9,460.9
N00-N99	Diseases of the genitourinary system	107.2	500.6	67.5	120.7	117.9	20.4	29.5	1.9	2.3	3.0	3,394.9
O00-O99	Pregnancy, child birth and the puerperium	3.7	2.4	2.5	8.4	1.8	-	0.8	-	-	-	2,476.9
P00-P96	Certain conditions originating in the perinatal period	0.5	1.9	-	-	0.2	0.2	0.4	-	-	-	98.0
Q00-Q99	Congenital malformations, deformations and chrosomal abnormalities	11.3	4.3	3.3	1.2	2.2	-	-	-	-	-	273.3
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	641.2	394.2	601.3	272.9	217.7	102.1	141.1	15.3	9.7	1.2	8,009.6
S00-T98	Injuries, poisoning and certain other consequences of external causes	120.0	66.5	109.2	26.7	97.8	10.2	8.1	5.1	4.6	8.5	2,386.5
U00-U99	Codes for special purposes	-	0.8	-	-	4.7	-	-	-	-	-	6.0
V01-Y98	External causes of morbidity and mortality	35.6	12.6	15.8	19.8	5.9	0.7	1.6	-	-	-	439.6
Z00-Z99	Factors influencing health status and contact with health services	55.5	45.5	99.8	10.2	146.4	3.1	0.3	-	-	-	3,316.1
Total		5,948.5	4,045.8	4,021.0	2,921.7	2,525.6	1,088.6	699.4	276.4	90.7	51.2	68,628.9

Note: Values are in Crore Taka

Comparative Analysis of Expenditures Using Independent Samples t-Test

Table 15 illustrates statistical contrasts in expenditure patterns across genders within specific ICD-10 chapters, focusing on distinct health parameters. It compares mean expenditure, median values, and standard deviations for different genders within these chapters, including t-values, p-values, and indicators of significance (at the 95% confidence level). The analysis uncovered significant variations in health expenditure comparisons between genders across several diseases and conditions described under ICD-10 chapters such as "Certain infectious and parasitic diseases," "Endocrine, nutritional, and metabolic diseases," "Diseases of the circulatory system," "Diseases of the respiratory system," "Diseases of the digestive system," "Diseases of the Musculoskeletal System and Connective Tissue," and "Diseases of the genitourinary system." These discrepancies were particularly notable in expenditure patterns between males and females.

On the other hand, expenditure differences for diseases and conditions have been found not significant for the following diseases and conditions: Chapter II : Neoplasms, Chapter III: Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism; ICD-10 Chapter V: Mental, Behavioral and Neurodevelopmental disorders; ICD-10 Chapter VI: Diseases of the nervous system; ICD-10 Chapter VII: Diseases of the eye and adnexa; ICD-10 Chapter VIII: Diseases of the ear and mastoid process; and ICD-10 Chapter XII: Diseases of the skin and subcutaneous tissue

Table 15: Comparison of expenditure between male and female using independent samples t-Test

ICD 10 Chapter	Group	N	Mean	Median	Std. Dev.	T-Value	P-Value	Significant
ICD-10 Chapter I: Certain infectious and parasitic diseases	Male	4,737	2,153	281	10,220	**-3.41**	**0.0007**	**Yes**
	Female	4,487	3,117	359	16,129			
	Overall	9,224	2,622	314	13,431			
ICD-10 Chapter II: Neoplasms	Male	1,102	4,396	445	22,155	0.79	0.4317	Not
	Female	1,208	3,743	466	17,145			
	Overall	2,310	4,055	449	19,693			
ICD-10 Chapter III: Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	Male	214	3,243	261	13,441	-1.23	0.2185	Not
	Female	405	5,359	347	29,225			
	Overall	619	4,628	313	24,933			
ICD-10 Chapter IV: Endocrine, nutritional and metabolic diseases	Male	1,449	4,085	708	12,655	**-3.34**	**0.0009**	**Yes**
	Female	1,914	6,346	755	25,828			
	Overall	3,363	5,371	736	21,208			
ICD-10 Chapter V: Mental, Behavioral and Neurodevelopmental disorders	Male	1,475	4,057	462	22,112	-1.40	0.1616	Not
	Female	1,554	5,232	587	24,049			
	Overall	3,029	4,660	526	23,130			
ICD-10 Chapter VI: Diseases of the nervous system	Male	817	3,998	478	17,373	-1.43	0.1536	Not
	Female	985	5,287	580	20,966			
	Overall	1,802	4,702	534	19,425			
ICD-10 Chapter VII: Diseases of the eye and adnexa	Male	1,013	3,010	427	12,750	-1.66	0.0981	Not
	Female	981	4,298	563	20,905			
	Overall	1,994	3,644	487	17,258			
ICD-10 Chapter VIII: Diseases of the ear and mastoid process	Male	754	2,818	452	13,524	-1.27	0.2029	Not
	Female	970	3,725	593	16,020			
	Overall	1,724	3,329	529	14,982			
ICD-10 Chapter IX: Diseases of the circulatory system	Male	3,366	6,240	638	27,355	**-2.29**	**0.0218**	**Yes**
	Female	2,598	13,651	634	162,857			
	Overall	5,964	9,468	634	109,484			
ICD-10 Chapter X: Diseases of the respiratory system	Male	4,167	4,211	503	18,352	**-3.34**	**0.0008**	**Yes**
	Female	3,192	6,302	700	31,484			
	Overall	7,359	5,118	580	24,932			
	Male	5,731	4,600	465	27,597	**-4.05**	**0.0001**	**Yes**

ICD 10 Chapter	Group	N	Mean	Median	Std. Dev.	T-Value	P-Value	Significant
ICD-10 Chapter XI: Diseases of the digestive system	Female	5,504	8,054	667	57,250			
	Overall	11,235	6,292	549	44,688			
ICD-10 Chapter XII: Diseases of the skin and subcutaneous tissue	Male	1,987	3,829	491	22,582	-0.53	0.5995	Not
	Female	2,154	4,164	611	17,852			
	Overall	4,141	4,003	547	20,258			
ICD-10 Chapter XIII: Diseases of the Musculoskeletal System and Connective Tissue	Male	3,627	5,955	752	28,636	**-3.91**	**0.0001**	**Yes**
	Female	4,079	9,923	929	57,279			
	Overall	7,706	8,055	845	46,112			
ICD-10 Chapter XIV: Diseases of the genitourinary system	Male	2,324	2,891	457	12,190	**-4.41**	**0.0000**	**Yes**
	Female	3,174	5,811	618	34,491			
	Overall	5,498	27,414	551	46,112			
ICD-10 Chapter XVI: Certain conditions originating in the perinatal period	Male	184	950	214	2,410	-1.13	0.2608	Not
	Female	300	1,572	172	9,056			
	Overall	484	1,335	185	7,285			
ICD-10 Chapter XVII: Congenital malformations, deformations and chromosomal abnormalities	Male	247	1,705	333	4,201	-1.42	0.1567	Not
	Female	242	6,469	279	52,013			
	Overall	489	4,062	298	36,751			
ICD-10 Chapter XVIII: Symptoms, signs and abnormal clinical and laboratory findings, n.e.c.	Male	7,763	3,138	431	12,743	**-2.79**	**0.0052**	**Yes**
	Female	8,064	3,898	508	20,702			
	Overall	15,827	3,525	472	17,267			
ICD-10 Chapter XIX: Injury, poisoning and certain other consequences of external causes	Male	4,171	2,181	342	9,315	-1.56	0.12	Not
	Female	2,583	3,270	393	34,793			
	Overall	6,754	2,597	363	22,732			
ICD-10 Chapter XX: External causes of morbidity	Male	1,480	1,311	264	4,434	-0.28	0.779	Not
	Female	722	1,392	192	7,171			
	Overall	2,202	1,337	238	5,482			
ICD-10 Chapter XXI: Factors influencing health status and contact with health services	Male	524	5,706	482	36,380	-0.08	0.9329	Not
	Female	2,976	5,846	544	27,225			
	Overall	3,500	5,825	536	28,775			

ICD-10 Chapter I: Certain infectious and parasitic diseases (A00-B99)

The ICD-10 code range for Certain infectious and parasitic diseases A00-B99 is medical classification list by the World Health Organization (WHO).ICD-10 Code range (A00-B99), Certain infections and parasitic disease, contains ICD-10 codes for Intestinal infectious diseases, zoonotic bacterial diseases, Other bacterial diseases, predominantly sexual mode of transmission, Other spirochetal diseases, HIV diseases, viral diseases, Mycoses, Protozoal diseases, Helminthiases, Pediculosis, ascariasis and other infestations, Sequelae of infectious and parasitic diseases.

https://coder.aapc.com/icd-10-codes-range/1

Under Chapter 1 of the ICD-10 disease classifications, a total of 125 categories of diseases were identified for which treatment was availed in 2020 from healthcare facilities in Bangladesh. An expenditure of Taka 3,296 was allocated to address these types of infectious diseases (**Table 16**). Amongst these, Tuberculosis (Taka 900 crore), Protozoal diseases (Taka 842 crore), Mycoses (Taka 481 crore), and Certain zoonotic bacterial diseases (Taka 398 crore) are the top four diseases requiring a higher level of spending. Notably, Tuberculosis sees higher expenditure for males (Taka 605.3 crore) than females (Taka 559.3 crore). Similarly, Protozoal diseases cause higher spending on females (Taka 489.1 crore) than on males (Taka 358.5 crore).

Table 16: Recurrent Expenditure for Certain Infectious and Parasitic Diseases by Gender

ICD10	Classification of Diseases and Conditions	Male	Female	Total	Col.%
A00-B99	**Certain infectious and parasitic diseases**		Crore Taka		
A00-A09	Intestinal infectious disease	391.7	508.8	900.4	26.6%
A15-A19	Tuberculosis	197.6	200.6	398.2	11.8%
A20-A28	Certain zoonotic bacterial diseases	0.6	0.2	0.8	0.0%
A30-A49	Other bacterial diseases	22.5	93.0	115.5	3.4%
A50-A64	Infections with a predominantly sexual mode of transmission	3.0	20.7	23.7	0.7%
A65-A69	Other spirochaetal diseases	1.5	3.7	5.2	0.2%
A70-A74	Other diseases caused by chlamydiae	-	1.2	1.2	0.0%
A80-A89	Viral diseases of the central nervous system	13.8	17.4	31.1	0.9%
A90-A99	Arthropod-borne viral fevers and viral haemorrhagic fevers	8.6	6.5	15.1	0.4%
B00-B09	Viral infections characterised by skin and mucousmembrane lesions	18.2	40.9	59.1	1.7%
B15-B19	Viral hepatitis	23.4	6.8	30.3	0.9%
B25-B34	Other viral diseases	286.7	194.7	481.4	14.2%
B35-B49	Mycoses	354.8	487.4	842.3	24.9%
B50-B64	Protozoal diseases	21.9	53.9	75.7	2.2%
B65-B83	Helminthiases	26.0	64.1	90.1	2.7%
B85-B89	Pediculosis, acariasis and other infestations	78.4	48.6	127.0	3.7%
B90-B94	Sequelae of infectious and parasitic diseases	0.7	7.2	7.9	0.2%
B95-B97	Bacterial, viral and other infectious agents	0.6	-	0.6	0.0%
B98-B98	Other specified infectious agents as the cause of diseases classified to other	0.1	0.4	0.4	0.0%
B99-B99	Other infectious diseases	69.2	111.0	180.1	5.3%
Total	Certain infectious and parasitic diseases	1,518.9	1,867.1	3,386.0	100%

Figure 11: Recurrent Expenditure by Certain Infectious and Parasitic Diseases and Age Category, 2020

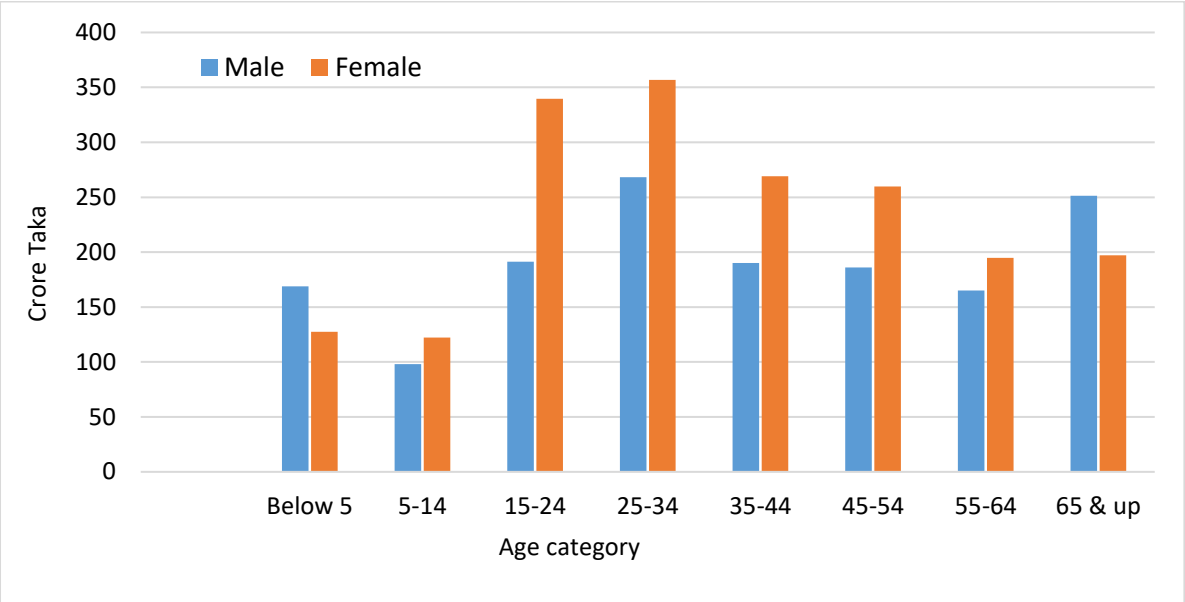
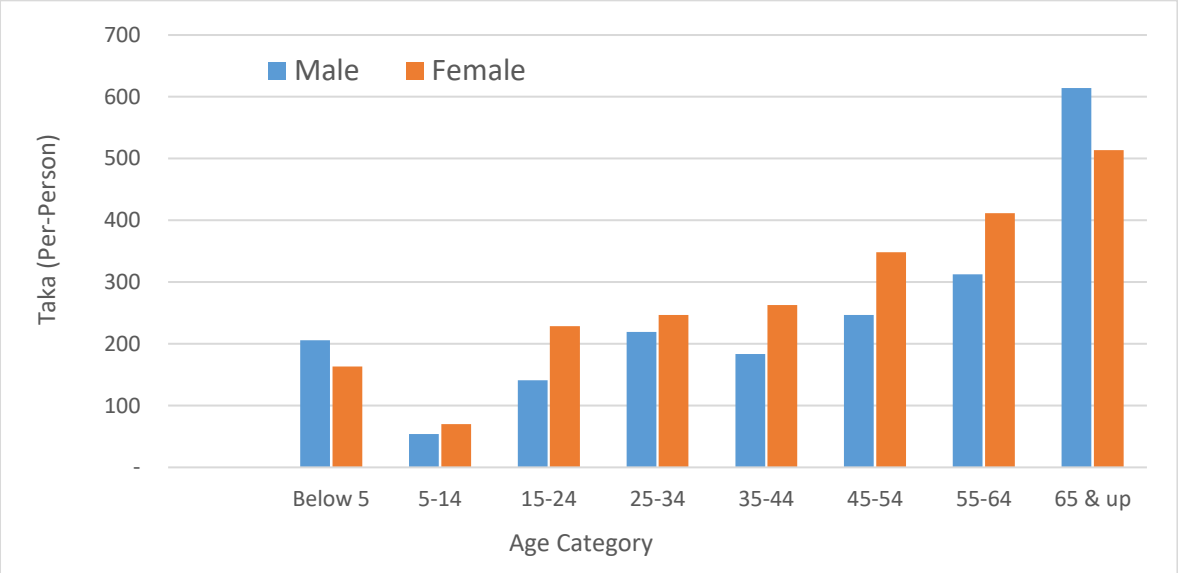


Figure 12: Per-Capita Expenditure by Certain Infectious and Parasitic Diseases and Age Category, 2020



ICD-10 Chapter II: Neoplasms (C00-D49)

The ICD-10 code range for Neoplasms C00-D49 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (C00-D49), Neoplasms, contains ICD-10 codes for Malignant neoplasms, situ neoplasms, Benign neuroendocrine tumors, Neoplasms of unspecified behavior, polycythemia vera and myelodysplastic syndromes.

https://coder.aapc.com/icd-10-codes-range/24

In line with the ICD-10 classification Chapter 2, there were 152 disease categories distributed across 17 blocks that received treatment in the year 2020. Taka 1,359 crore is utilized to address this category of diseases (refer to Table 17). The prominent diseases in this neoplasm category are Malignant neoplasms of digestive organs (Taka 336 crore), Malignant neoplasm of respiratory and intrathoracic organs (Taka 227 crore), Malignant neoplasms of ill-defined, secondary and unspecified sites (Taka 110 crore), In situ neoplasms (Taka 88 crore), and Benign neoplasms (Taka 86 crore). Malignant neoplasms of digestive organs witness higher expenditure for males (Taka 256 crore) compared to females (Taka 80 crore).

Table 17: Recurrent Expenditure for Neoplasms by Gender

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
C00-D49	**Neoplasms**	Crore Taka			
C00-C14	Malignant neoplasms of lip, oral cavity and pharynx	34.7	32.2	66.9	4.9%
C15-C26	Malignant neoplasms of digestive organs	255.8	80.3	336.1	24.7%
C30-C39	Malignant neoplasm of respiratory and intrathoracic organs	125.1	101.5	226.6	16.7%
C40-C41	Malignant neoplasm of bone and articular cartilage	10.8	4.0	14.8	1.1%
C43-C44	Melanoma and other malignant neoplasms of skin	13.3	2.1	15.4	1.1%
C45-C49	Malignant neoplasms of mesothelial and soft tissue	4.3	18.8	23.0	1.7%
C50-C50	Malignant neoplasm of breast	-	63.6	63.6	4.7%
C51-C58	Malignant neoplasms of female genital organs	-	73.1	73.1	5.4%
C60-C63	Malignant neoplasms of male genital organs	27.5	1.0	28.5	2.1%
C64-C68	Malignant neoplasm of urinary tract	5.0	3.1	8.1	0.6%
C69-C72	Malignant neoplasms of eye, brain and other parts of central nervous system	0.7	49.7	50.4	3.7%
C73-C75	Malignant neoplasms of thyroid and other endocrine glands	3.4	9.1	12.5	0.9%
C76-C80	Malignant neoplasms of ill-defined, secondary and unspecified sites	76.5	33.2	109.7	8.1%
C81-C96	Malignant neoplasm of lymphoid, haematopoietic and related tissue	47.8	11.5	59.3	4.4%
D00-D09	In situ neoplasms	70.4	17.5	88.0	6.5%
D10-D36	Benign neoplasms	10.0	75.5	85.5	6.3%
D37-D48	Neoplasms of uncertain or unknown behaviour	15.8	81.9	97.7	7.2%
Total	Neoplasms	701.0	658.0	1359.0	100%

Figure 13: Recurrent Expenditure by Neoplasms and Age Category, 2020

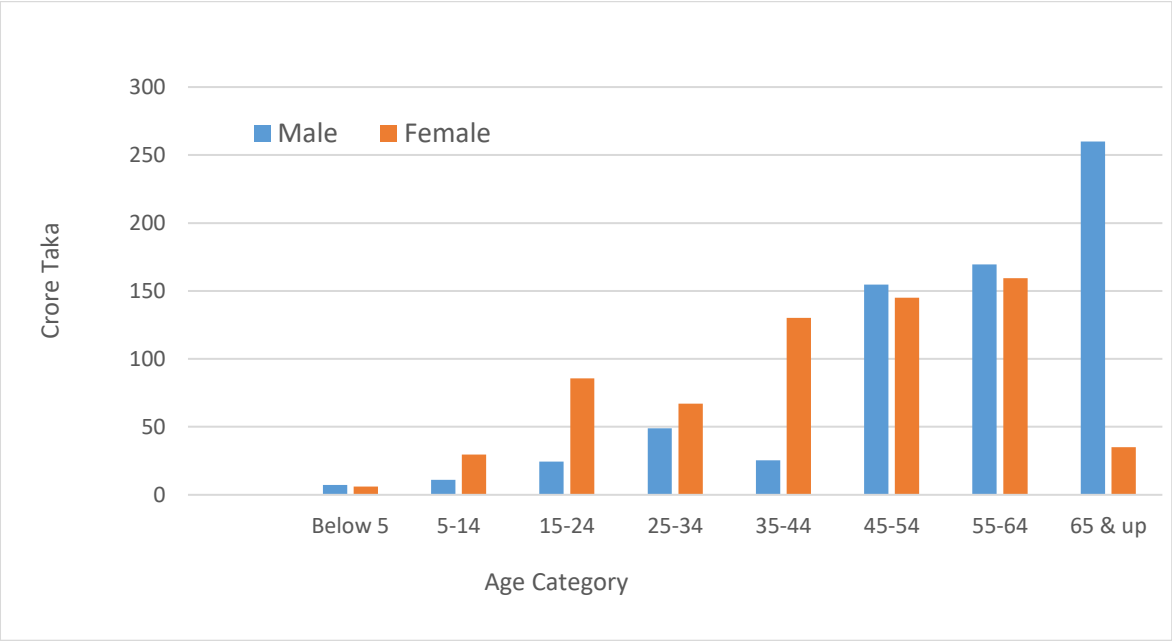
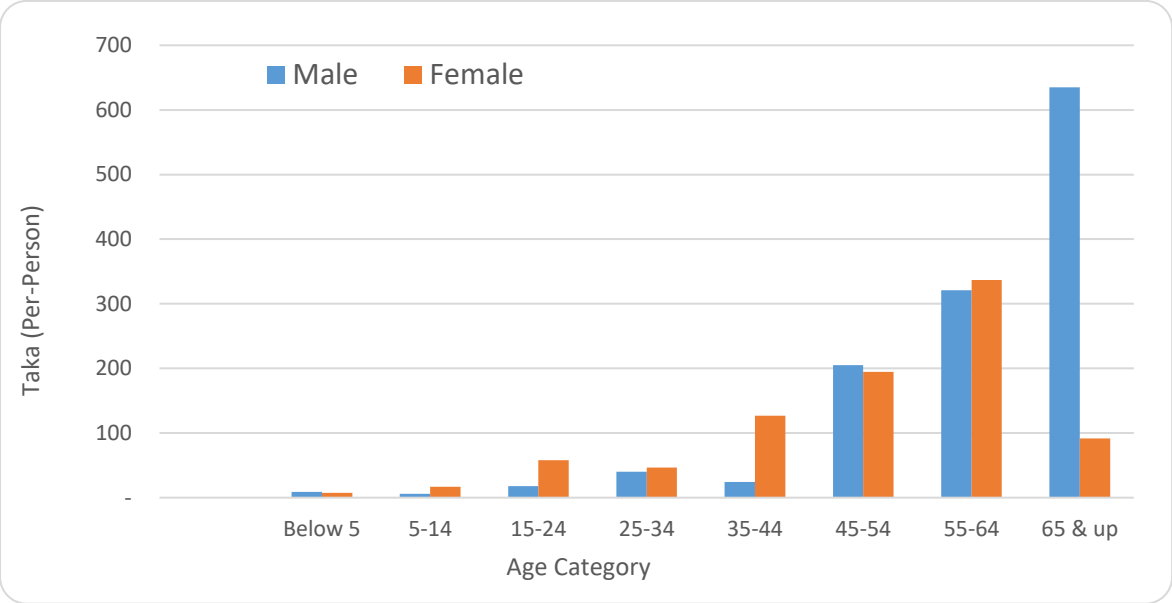


Figure 14: Per-Capita Expenditure by Neoplasms and Age Category, 2020



ICD-10 Chapter III: Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (D50-D89)

The ICD-10 code range for Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism D50-D89 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (D50-D89), Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism, contains ICD-10 codes for Nutritional anemias, Hemolytic anemias, Aplastic and other anemias and other bone marrow failure syndromes, Coagulation defects, purpura and other hemorrhagic conditions, Other disorders of blood and blood-forming organs.

https://coder.aapc.com/icd-10-codes-range/48

A total of 21 categories of diseases under 7 blocks of Chapter 3 of the ICD-10 were identified who availed of treatment in 2020 from health care facilities in Bangladesh. An expenditure of Taka 358 crore was designated to address these diseases (Table 18). Women are more susceptible to these conditions, and consequently, a relatively higher amount was spent compared to their male cohort. Total recurrent expenditure for females for these diseases amounts to Taka 257 crore, whereas for males, it was Taka 100 crore. Approximately 79% of the spending within the category of Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism was disbursed to two disease blocks: Nutritional anemias (41%) and Aplastic and other anemias (38%).

Table 18: Recurrent Expenditure for Diseases of the Blood and Blood-Forming Organs and Certain Disorders Involving Immune Mechanism by Gender

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
D50-D89	**Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism**		*Crore Taka*		
D50-D53	Nutritional anemias	17.7	128.5	146.2	40.8%
D55-D59	Hemolytic anemias	34.1	3.7	37.8	10.6%
D60-D64	Aplastic and other anemias	33.4	101.6	135.1	37.7%
D65-D69	Coagulation defects, purpura and other hemorrhagic conditions	15.0	20.4	35.4	9.9%
D70-D77	Other diseases of blood and blood-forming organs	0.3	2.4	2.7	0.7%
D80-D89	Certain disorders involving the immune mechanism	0.3	0.6	0.9	0.3%
Total		100.9	257.2	358.1	100%

Figure 15: Recurrent Expenditure by Diseases of the Blood and Blood-Forming Organs and Certain Disorders Involving Immune Mechanism and Age Category, 2020

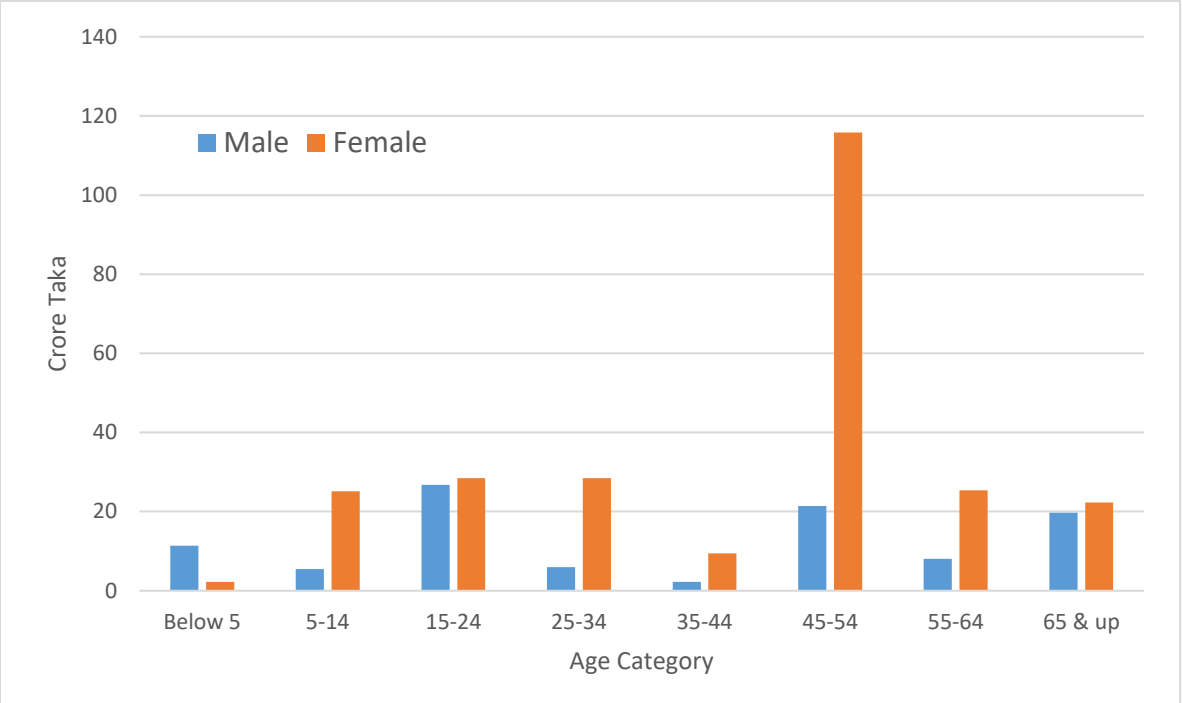
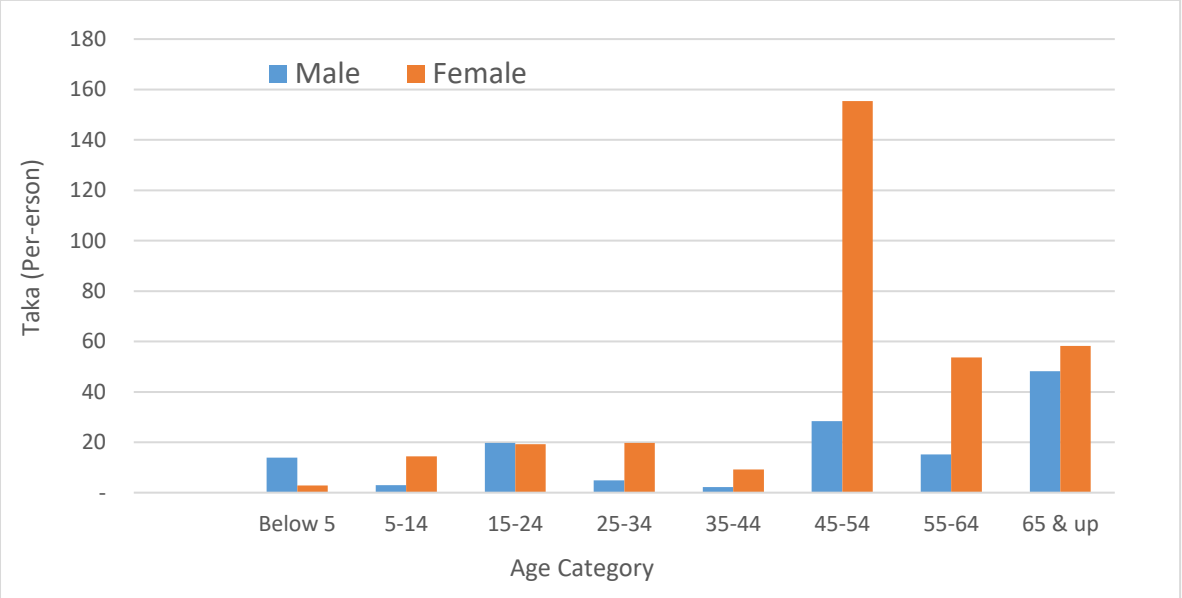


Figure 16: Per-Capita Expenditure by Diseases of the Blood and Blood-Forming Organs and Certain Disorders Involving Immune Mechanism and Age Category, 2020



ICD-10 Chapter IV: Endocrine, nutritional and metabolic diseases (E00-E89)

The ICD-10 code range for Endocrine, nutritional and metabolic diseases E00-E89 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (E00-E89), Endocrine, nutritional and metabolic diseases, contains ICD-10 codes for Disorders of thyroid gland, Diabetes mellitus, Other disorders of glucose regulation and pancreatic internal secretion, Disorders of other endocrine glands, Intraoperative complications of endocrine system, Malnutrition, Other nutritional deficiencies.

https://coder.aapc.com/icd-10-codes-range/56

In adherence to the ICD-10 classification Chapter 4, a total of 81 diseases categorized under 8 blocks of disease classifications were identified who availed treatment in 2020 from healthcare facilities. A sum of Taka 2,484 crore was spent to address these diseases (Table 19). The recurrent expenditure for these diseases was higher for females (Taka 1,596 crore) compared to males (Taka 888 crore). Notably, Diabetes mellitus alone account for almost 81.3% of the expenditure in this category. Women spend more (Taka 139 crore) than men (Taka 29 crore) on disorders of the thyroid gland.

Table 19: Recurrent Expenditure for Endocrine, Nutritional and Metabolic Diseases by Gender

ICD-10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
E00-E89	**Endocrine, nutritional and metabolic diseases**				
E00-E07	Disorders of thyroid gland	28.9	139.2	168.2	6.8%
E10-E14	Diabetes mellitus	781.3	1,237.1	2,018.4	81.3%
E15-E16	Other disorders of glucose regulation and pancreatic internal secretion	3.2	14.7	17.8	0.7%
E20-E35	Disorders of other endocrine glands	10.2	42.9	53.1	2.1%
E40-E46	Malnutrition	7.2	7.9	15.1	0.6%
E50-E64	Other nutritional deficiencies	0.4	19.5	19.8	0.8%
E65-E68	Obesity and other hyperalimentation	5.4	44.4	49.8	2.0%
E70-E90	Metabolic disorders	51.9	90.0	141.9	5.7%
Total		888.4	1595.7	2484.0	100%

Note: Values are in Crore Taka

Figure 17: Recurrent Expenditure by Endocrine, Nutritional and Metabolic Diseases and Age Category, 2020

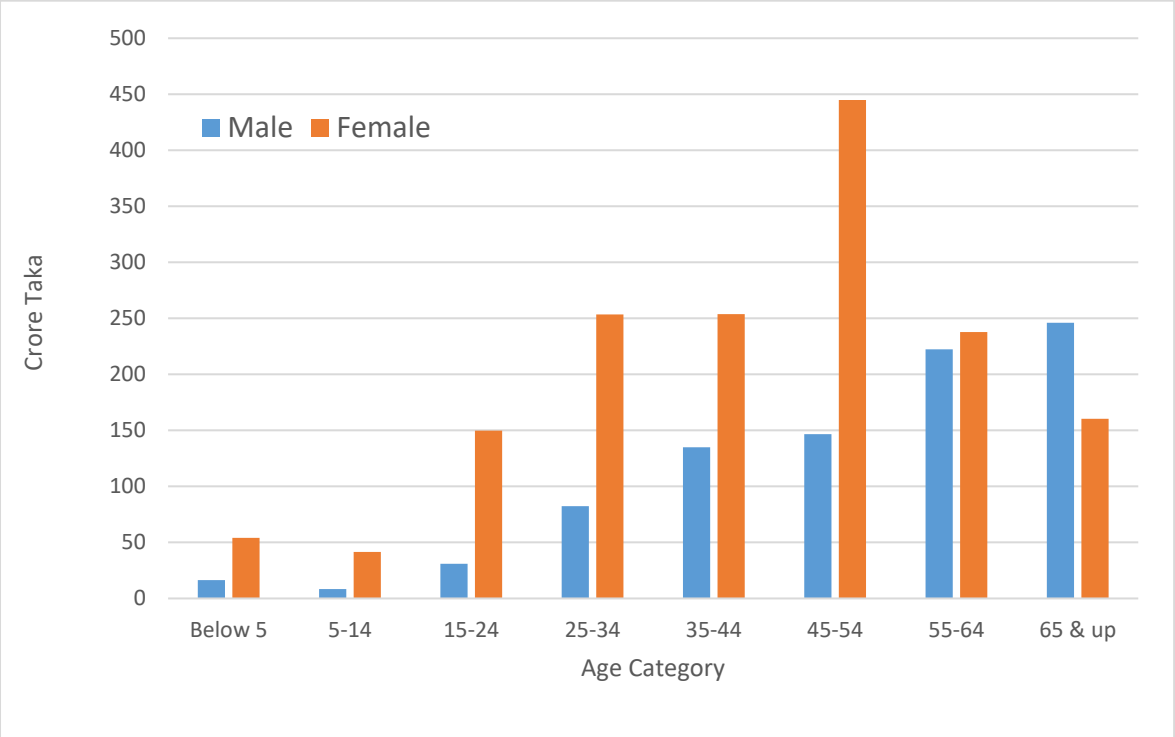
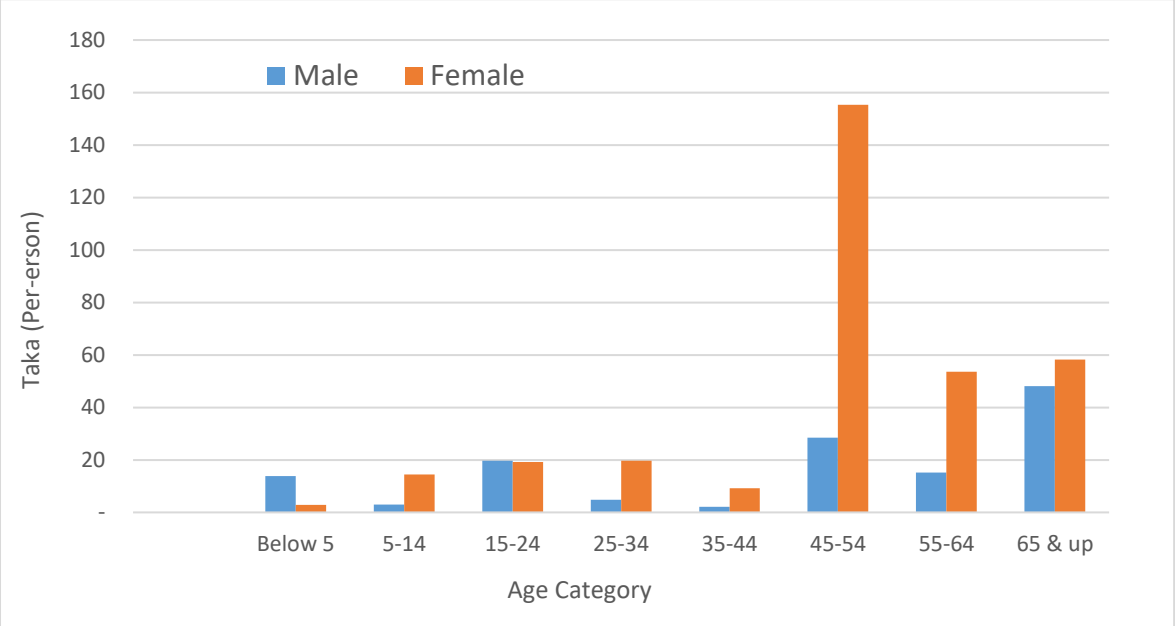


Figure 18: Per-Capita Expenditure by Endocrine, Nutritional and Metabolic Diseases and Age Category, 2020



ICD-10 Chapter V: Mental, Behavioral and Neurodevelopmental disorders (F01-F99)

The ICD-10 code range for Mental, Behavioral and Neurodevelopmental disorders F01-F99 is medical classification list by the World Health Organization (WHO).ICD-10 Code range (F01-F99), Mental, Behavioral and Neurodevelopmental disorders, contains ICD-10 codes for Mental disorders due to known physiological conditions, Mental and behavioral disorders due to psychoactive substance use, Schizophrenia, schizotypal, delusional, and other non-mood psychotic disorders, Mood [affective] disorders, Anxiety, dissociative, stress-related, somatoform and other nonpsychotic mental disorders.

https://coder.aapc.com/icd-10-codes-range/67

Under Chapter 5 of the ICD-10 disease classifications, a total of 99 categories of diseases were identified who availed treatment in 2020 from healthcare facilities. A total of Taka 2,044 crore was expended to address these diseases (Table 20). Expenditure on Neurotic, stress-related, and somatoform disorders accounts for one-third of the total expenditure under this disease category with higher amount for women (Taka 409 crore) than for men (Taka 268 crore). Similarly, for Organic, including symptomatic, mental disorders incur higher spending was incurred for women (Taka 349 crore) than for men (Taka 88 crore). Notably, more spending was allocated to Schizophrenia, schizotypal, and delusional disorders for men (Taka 228 crore) than on women (Taka 111 crore).

Table 20: Recurrent Expenditure for Mental, Behavioral and Neurodevelopmental Disorders by Gender

ICD-10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
F01-F99	**Mental, Behavioral and Neurodevelopmental disorders**		Crore Taka		
F00-F09	Organic, including symptomatic, mental disorders	88.3	349.2	437.6	21.4%
F10-F19	Mental and behavioural disorders due to psychoactive substance use	3.7	5.9	9.6	0.5%
F20-F29	Schizophrenia, schizotypal and delusional disorders	228.2	110.7	339.0	16.6%
F30-F39	Mood [affective] disorders	143.5	129.7	273.1	13.4%
F40-F48	Neurotic, stress-related and somatoform disorders	267.7	409.4	677.1	33.1%
F50-F59	Behavioural syndromes associated with psychological disturbances and physical factors	165.9	46.3	212.2	10.4%
F60-F69	Disorders of adult personality and behaviour	1.2	2.6	3.8	0.2%
F70-F79	Mental retardation	13.7	5.0	18.8	0.9%
F80-F89	Disorders of psychological development	10.9	1.0	11.9	0.6%
F90-F98	Behavioural and emotional disorders with onset usually occurring in childhood and adolescence	1.4	48.7	50.1	2.5%
F99-F99	Unspecified mental disorder	4.2	6.3	10.5	0.5%
Total		928.7	1114.9	2043.6	100%

Figure 19: Recurrent Expenditure by Mental, Behavioral and Neurodevelopmental Disorders and Age Category, 2020

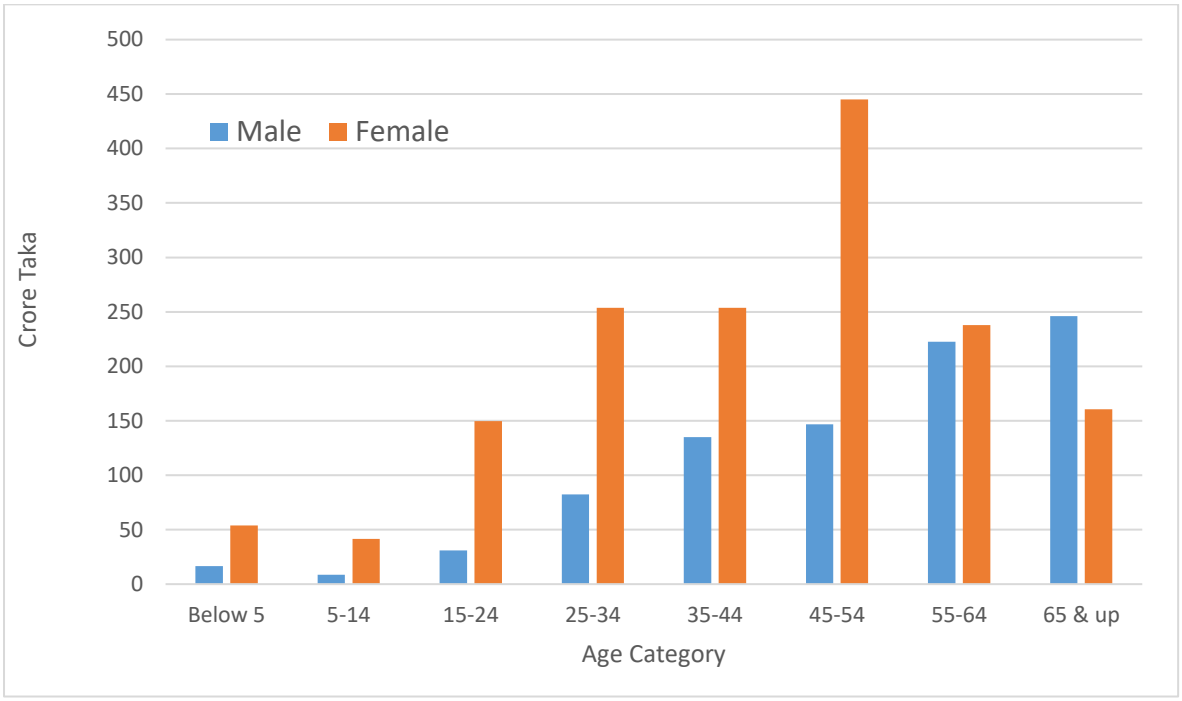
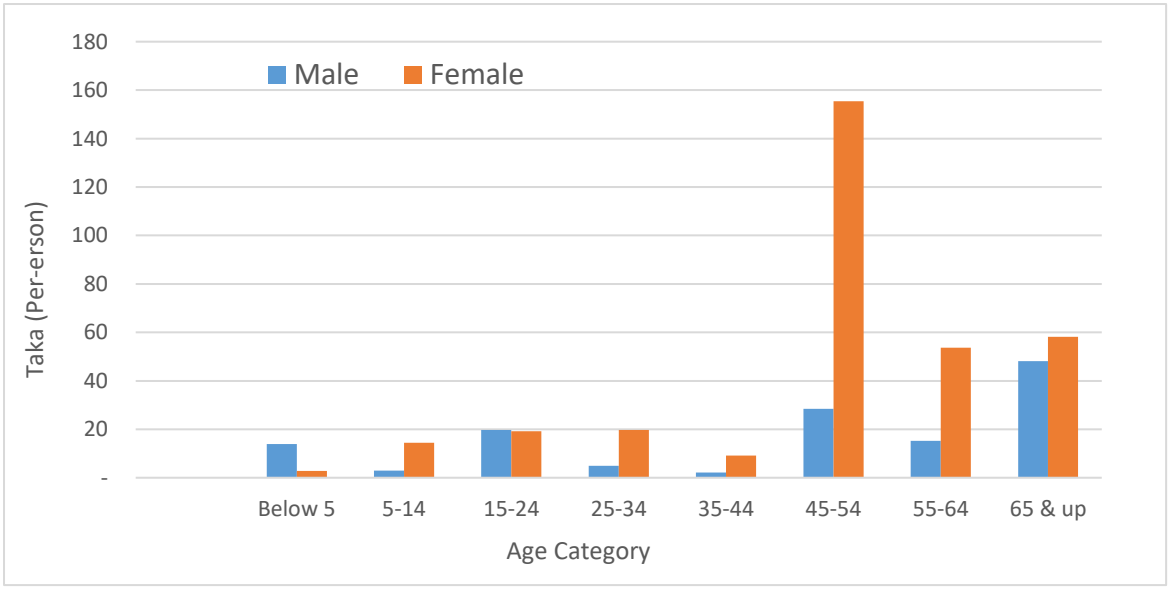


Figure 20: Per-Capita Expenditure by Mental, Behavioral and Neurodevelopmental Disorders and Age Category, 2020



ICD-10 Chapter VI: Diseases of the nervous system (G00-G99)

The ICD-10 code range for Diseases of the nervous system G00-G99 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (G00-G99), Diseases of the nervous system, contains ICD-10 codes for Inflammatory diseases of the central nervous system, Systemic atrophies primarily affecting the central nervous system, Extrapyramidal and movement disorders, Other degenerative diseases of the nervous system, Demyelinating diseases of the central nervous system.

https://coder.aapc.com/icd-10-codes-range/79

In line with the ICD-10 classification Chapter 6, there were 67 disease categories distributed across 11 blocks that received treatment in 2020. Taka 1031 crore is utilized to address these diseases, with Taka 488 crore allocated for men and Taka 644 crore for women (see Table 20). The spending on Episodic and paroxysmal disorders is notably higher for women (Taka 420 crore) than for men (Taka 260 crore), accounting for approximately 60% of the expenditure in this group. This is followed by Demyelinating diseases of the central nervous system at 11% (Taka 128 crore) and Nerve, nerve root, and plexus disorders at 10.4% (Taka 118 crore).

Table 21: Recurrent Expenditure for Diseases of Nervous System by Gender

ICD-10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
G00-G99	Diseases of the nervous system		Crore Taka		
G00-G09	In-amatory diseases of the central nervous system	7.8	0.3	8.1	0.7%
G10-G13	Systemic atrophies primarily affecting the central nervous system	0.6	-	0.6	0.1%
G20-G26	Extrapyramidal and movement disorders	8.6	31.7	40.2	3.6%
G30-G32	Other degenerative diseases of the central nervous system	20.5	0.2	20.6	1.8%
G35-G37	Demyelinating diseases of the central nervous system	28.7	99.3	128.0	11.3%
G40-G47	Episodic and paroxysmal disorders	259.5	419.9	679.4	60.1%
G50-G59	Nerve, nerve root and plexus disorders	83.7	33.9	117.6	10.4%
G60-G64	Polyneuropathies and other disorders of the peripheral nervous system	12.4	22.4	34.8	3.1%
G70-G73	Diseases of myoneural junction and muscle	24.7	8.4	33.1	2.9%
G80-G83	Cerebral palsy and other paralytic syndromes	18.0	10.5	28.5	2.5%
G90-G99	Other disorders of the nervous system	22.3	17.4	39.7	3.5%
Total		486.7	643.9	1130.5	100%

Figure 21: Recurrent Expenditure by Diseases of Nervous System and Age Category, 2020

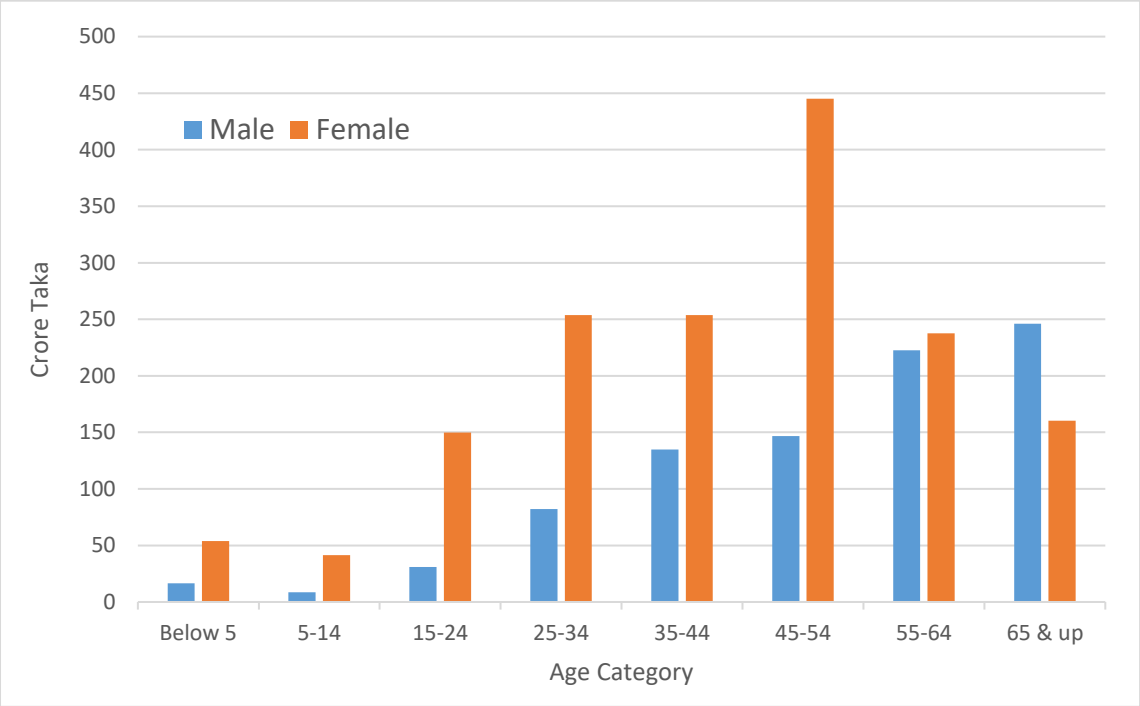
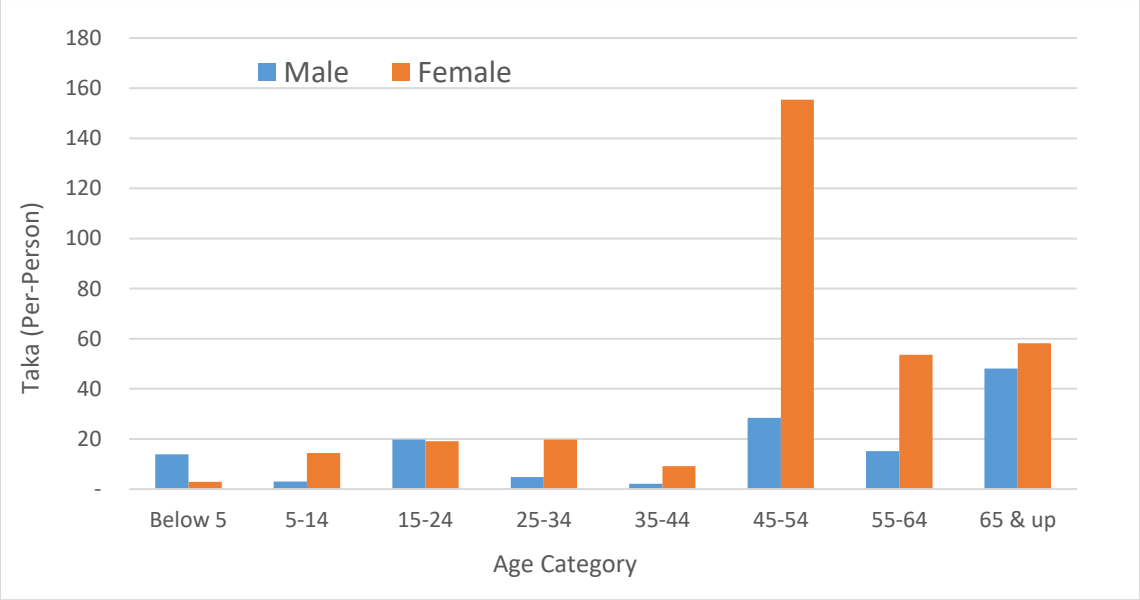


Figure 22: Per-Capita Expenditure by Diseases of Nervous System and Age Category, 2020



ICD-10 Chapter VII: Diseases of the eye and adnexa (H00-H59)

The ICD-10 code range for Diseases of the eye and adnexa H00-H59 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (H00-H59), Diseases of the eye and adnexa, contains ICD-10 codes for Disorders of eyelid, lacrimal system and orbit, Disorders of conjunctiva, Disorders of sclera, cornea, iris and ciliary body, lens, Disorders of choroid and retina, Glaucoma, vitreous body and globe.

https://coder.aapc.com/icd-10-codes-range/91

In accordance with the ICD-10 classification Chapter 7, a total of 80 diseases are categorized under 11 blocks of diseases were identified for which treatment was availed in 2020 from healthcare facilities. A total of Taka 1,091 crore was spent to attend to these type of morbidities, with men spending Taka 439 crore and women Taka 652 crore. (Table 22). The major expenditures in the eye and adnexa morbidity category are for other disorders of the eye and adnexa (Taka 291 crore), Disorders of eyelid, lacrimal system, and orbit (Taka 193 crore) and Glaucoma (Taka 136 crore).

Table 22: Recurrent Expenditure for Diseases of Eye and Adnexa by Gender

ICD-10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
H00-H59	**Diseases of the eye and adnexa**		*Crore Taka*		
H00-H06	Disorders of eyelid, lachrymal system and orbit	78.9	113.9	192.7	17.7%
H10-H13	Disorders of conjunctiva	91.3	41.8	133.0	12.2%
H15-H22	Disorders of sclera, cornea, iris and ciliary body	20.5	33.2	53.7	4.9%
H25-H28	Disorders of lens	43.2	27.8	71.0	6.5%
H30-H36	Disorders of choroid and retina	4.4	48.5	52.9	4.9%
H40-H42	Glaucoma	6.0	130.1	136.1	12.5%
H43-H45	Disorders of vitreous body and globe	6.6	6.3	12.9	1.2%
H46-H48	Disorders of optic nerve and visual pathways	-	12.8	12.8	1.2%
H49-H52	Disorders of ocular muscles, binocular movement, accommodation and refraction	12.4	34.1	46.5	4.3%
H53-H54	Visual disturbances and blindness	6.6	81.3	87.9	8.1%
H55-H59	Other disorders of eye and adnexa	169.1	121.9	290.9	26.7%
H00-H06	Disorders of eyelid, lachrymal system and orbit	438.9	651.7	1090.6	100%

Figure 23: Recurrent Expenditure by Diseases of Eye and Adnexa and Age Category, 2020

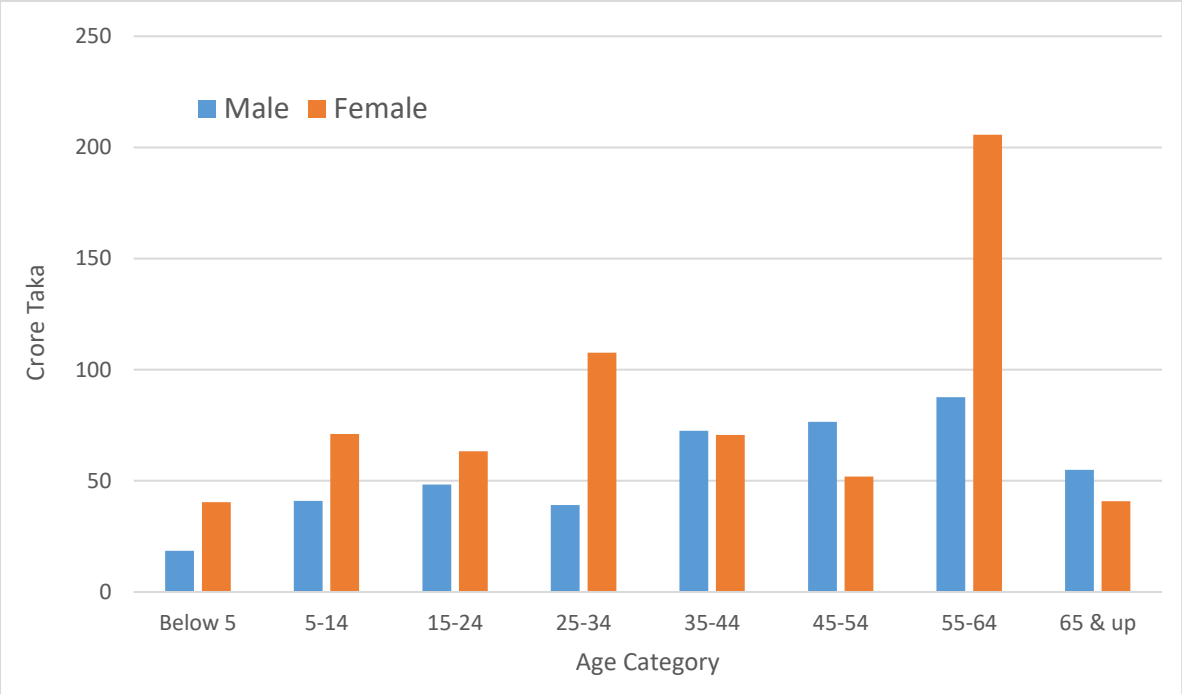
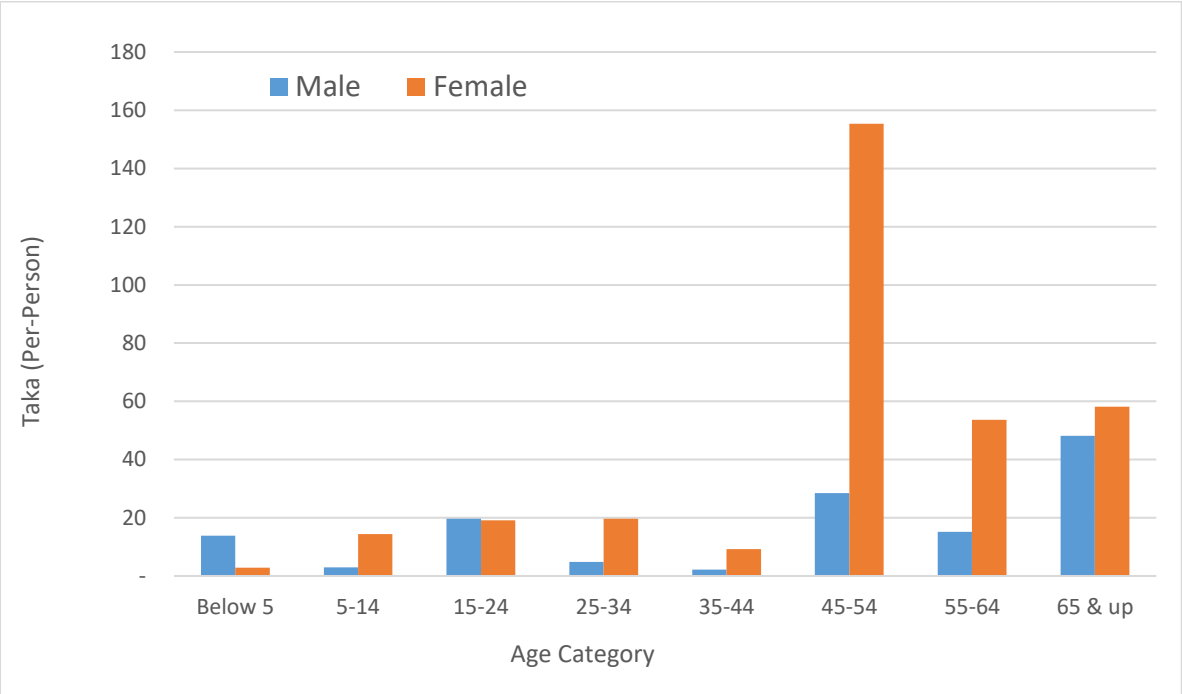


Figure 24: Per-Capita Expenditure by Diseases of Eye and Adnexa and Age Category, 2020



ICD-10 Chapter VIII: Diseases of the ear and mastoid process (H60-H95)

The ICD-10 code range for Diseases of the ear and mastoid process H60-H95 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (H60-H95), Diseases of the ear and mastoid process, contains ICD-10 codes for Diseases of external ear, middle ear and mastoid, inner ear, Other disorders of ear, Intraoperative and postprocedural complications and disorders of ear and mastoid process, not elsewhere classified.

https://coder.aapc.com/icd-10-codes-range/104

Under the ICD-10 classification Chapter 8, a total of 40 diseases under 4 blocks were identified and treatment received from healthcare facilities.A total of Taka 793 crore was expended to address these diseases, with Taka 314 crore on men and Taka 480 crore on women (Table 23). Expenditure on Diseases of the inner ear is higher for women (Taka 223 crore) than for men (Taka 65 crore).

Table 23: Recurrent Expenditure for Diseases of the Ear and Mastoid Process by Gender

ICD-10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
H60-H95	**Diseases of the ear and mastoid process**		*Crore Taka*		
H60-H62	Diseases of external ear	36.5	39.4	75.9	9.6%
H65-H75	Diseases of middle ear and mastoid	106.1	116.2	222.3	28.0%
H80-H83	Diseases of inner ear	64.7	223.3	287.9	36.3%
H90-H94	Other disorders of ear	106.7	100.6	207.3	26.1%
Total		314.0	479.5	793.4	100%

Figure 25: Recurrent Expenditure by Diseases of the ear and mastoid process by Age Category, 2020

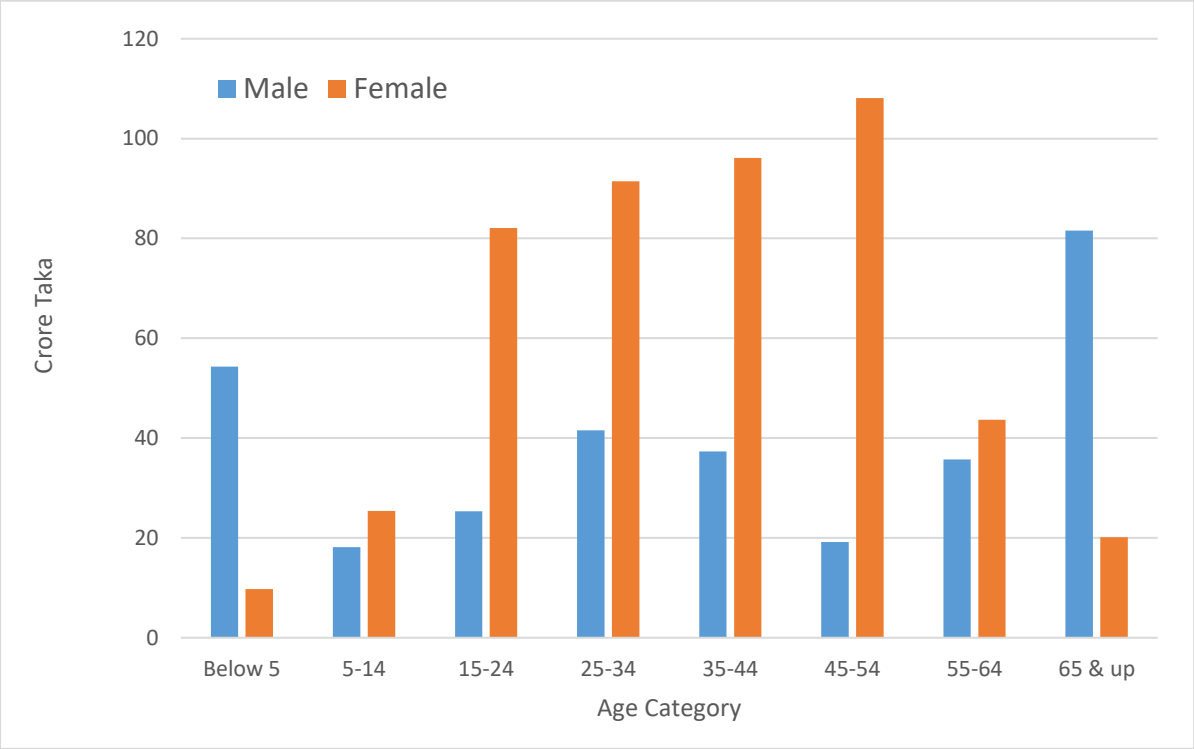
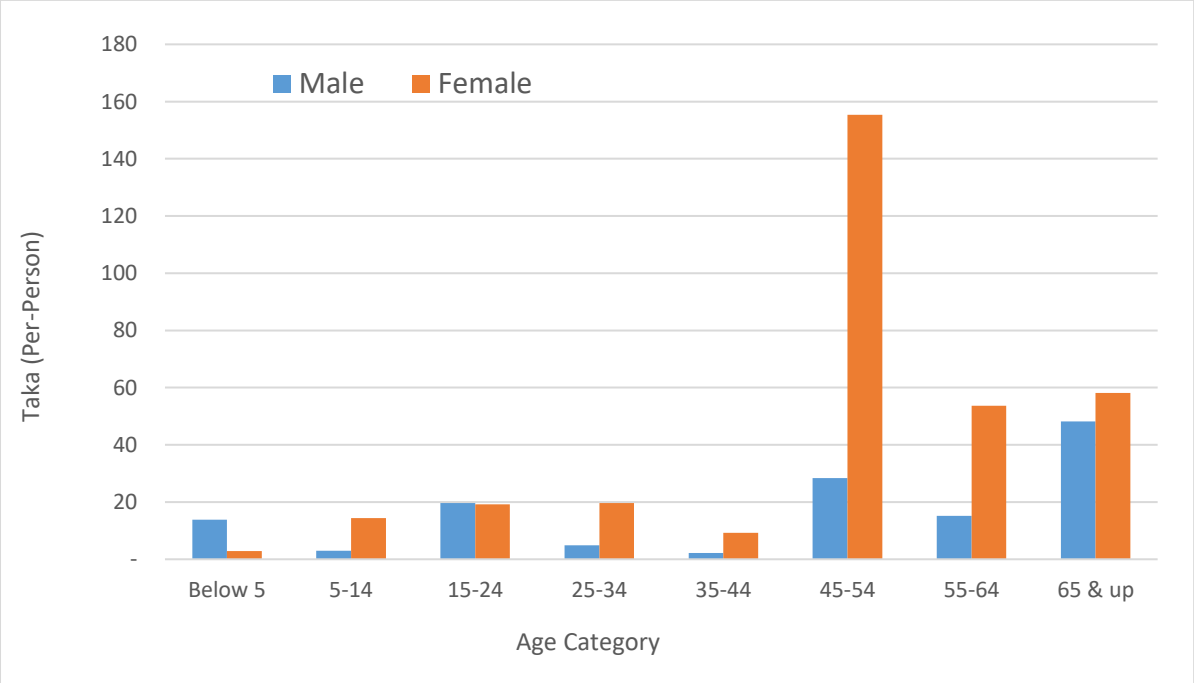


Figure 26: Per-Capita Expenditure by Diseases of the ear and mastoid process and Age Category, 2020



ICD-10 Chapter IX: Diseases of the Circulatory System (I00-I99)

The ICD-10 code range for Diseases of the circulatory system I00-I99 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (I00-I99), Diseases of the circulatory system, contains ICD-10 codes for Acute rheumatic fever, Chronic rheumatic heart diseases, Hypertensive diseases, Ischemic heart, Pulmonary heart disease, Cerebrovascular, Other forms of heart disease.

https://coder.aapc.com/icd-10-codes-range/110

According to the ICD-10 classification Chapter 9, a total of 110 diseases under 10 broader disease classifications are included in this category. A total of Taka 8,856 crore was spent to address these disease categories, with Taka 3,249 crore on men and Taka 5,608 crore on women (Table 24). The expenditure on Hypertensive diseases is higher for women (Taka 4,562 crore) than for men (Taka 1,925 crore). On the other hand, expenditure on Ischemic heart diseases is higher for men (Taka 882 crore) than for women (Taka 482 crore). Expenditures on Cerebrovascular diseases are higher for women (Taka 272 crore) than for men (Taka 216 crore).

Table 24: Recurrent Expenditure for Diseases of the Circulatory System by Gender

ICD-10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
I00-I99	**Diseases of the circulatory system**		*Crore Taka*		
I00-I02	Acute rheumatic fever	21.1	0.5	21.5	0.2%
I05-I09	Chronic rheumatic heart diseases	18.5	17.2	35.7	0.4%
I10-I15	Hypertensive diseases	1,924.7	4,562.2	6,486.9	73.2%
I20-I25	Ischemic heart disease	881.5	482.3	1,363.7	15.4%
I26-I28	Pulmonary heart disease and diseases of pulmonary circulation	16.8	30.9	47.7	0.5%
I30-I52	Other forms of heart disease	69.2	145.2	214.4	2.4%
I60-I69	Cerebrovascular diseases	215.5	272.1	487.6	5.5%
I70-I79	Diseases of arteries, arterioles and capillaries	32.0	32.3	64.3	0.7%
I80-I89	Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified	42.2	42.4	84.6	1.0%
I95-I99	Other and unspecified disorders of the circulatory system	27.1	22.6	49.7	0.6%
Total		3,248.5	5,607.6	8,856.1	100%

Note: Values are in

Figure 27: Recurrent Expenditure by Diseases of the Circulatory System and Age Category, 2020

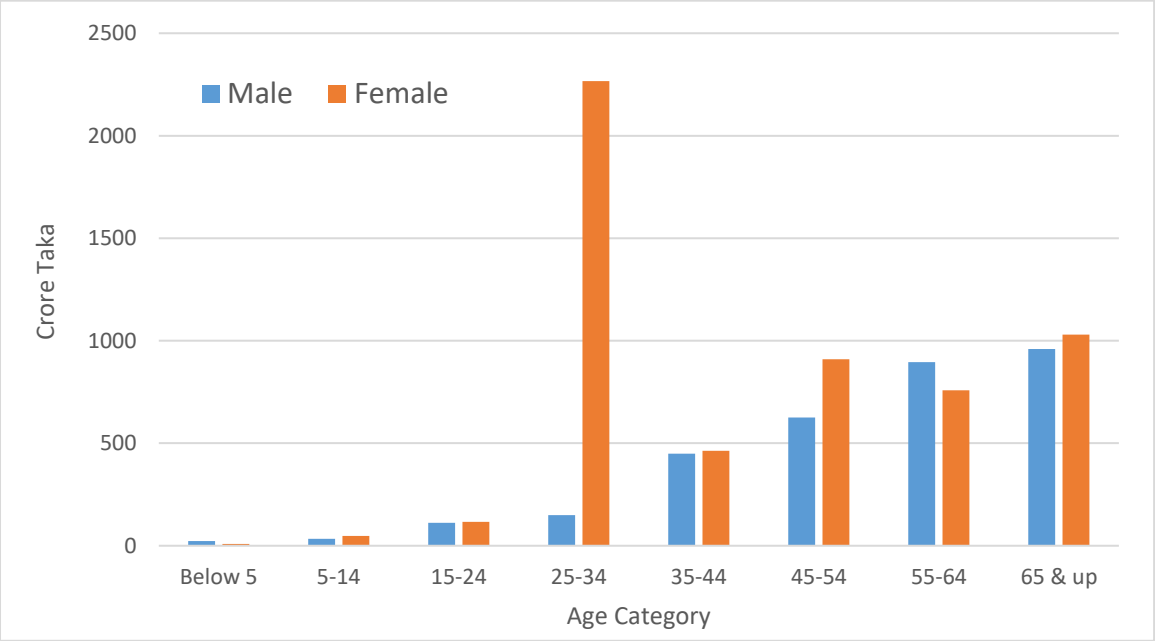
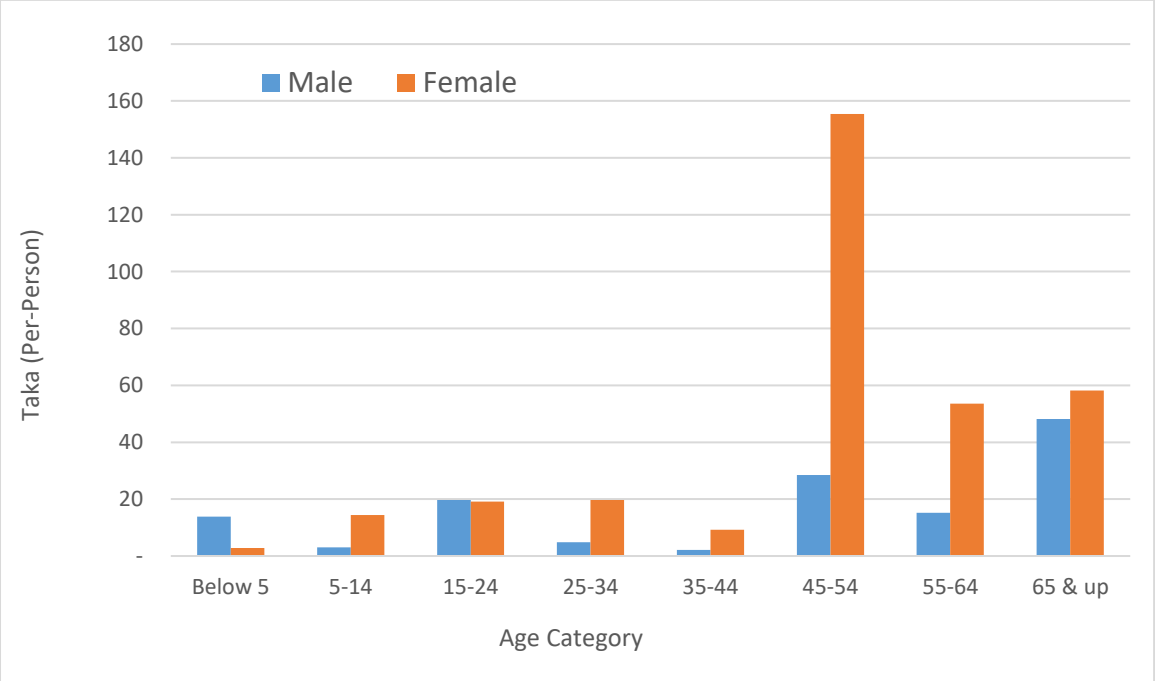


Figure 28: Per-Capita Expenditure by Diseases of the Circulatory System and Age Category, 2020



ICD-10 Chapter X: Diseases of the respiratory system (J00-J99)

The ICD-10 code range for Diseases of the respiratory system J00-J99 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (J00-J99), Diseases of the respiratory system, contains ICD-10 codes for Acute upper respiratory infections, Influenza and pneumonia, Other acute lower respiratory infections, Other diseases of upper respiratory tract, Chronic lower respiratory diseases, Lung diseases due to external agents, Other respiratory diseases principally affecting the interstitium.

https://coder.aapc.com/icd-10-codes-range/110

In line with the ICD-10 classification Chapter 10, a total of 93 diseases under 10 blocks were identified who availed of treatment in 2020. . Taka 5,369 crore was expended to address these disease categories, with Taka 2,633 crore spent on men and Taka 2,796.6 crore on women (Table 25). The major categories of expenditure relate to Acute upper respiratory infections (Taka 2,471 crore) and Chronic lower respiratory diseases (Taka 1,370 crore), both associated with problems in the respiratory system.

Table 25: Recurrent Expenditure for Diseases of Respiratory System by Gender

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
J00-J99	**Diseases of the respiratory system**		*Crore Taka*		
J00-J06	Acute respiratory infections	1,026.3	1,445.1	2,471.3	46.0%
J10-J18	Influenza and pneumonia	286.4	117.4	403.9	7.5%
J20-J22	Other acute lower respiratory infections	297.0	184.0	481.0	9.0%
J30-J39	Other diseases of upper respiratory tract	180.1	348.2	528.3	9.8%
J40-J47	Chronic lower respiratory diseases	775.3	594.7	1,370.0	25.5%
J60-J70	Lung diseases due to external agents	-	1.1	1.1	0.0%
J80-J84	Other respiratory diseases principally affecting thinterstitium	10.3	12.8	23.1	0.4%
J85-J86	Suppurative and necrotic conditions of lower respiratory tract	30.0	9.7	39.8	0.7%
J90-J94	Other diseases of pleura	11.8	7.9	19.8	0.4%
J95-J99	Other diseases of the respiratory system	15.8	15.4	31.2	0.6%
Total		2,633.0	2,736.3	5,369.3	100%

Figure 29: Recurrent Expenditure by Diseases of Respiratory System and Age Category, 2020

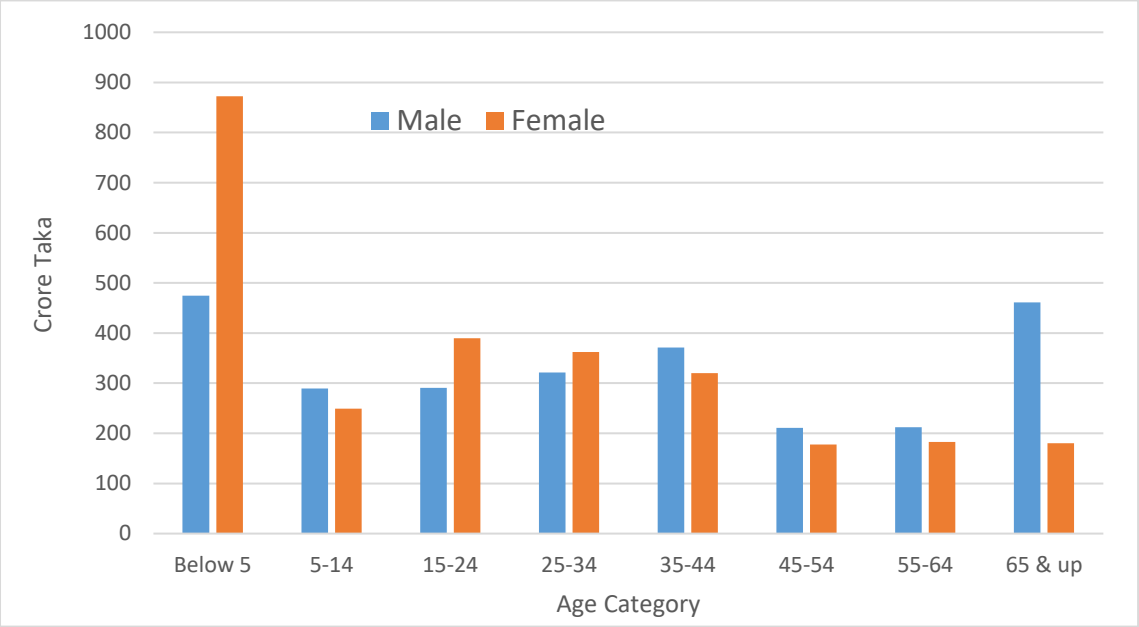
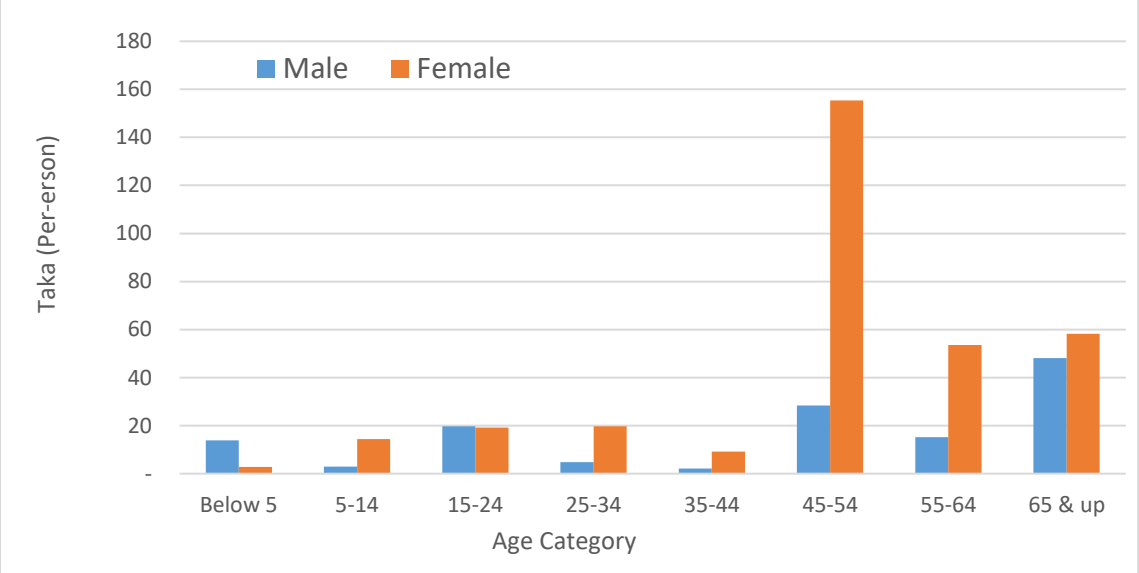


Figure 30: Per-Capita Expenditure by Diseases of Respiratory System and Age Category, 2020



ICD-10 Chapter XI: Diseases of the digestive system (K00-K95)

The ICD-10 code range for Diseases of the digestive system K00-K95 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (K00-K95), Diseases of oral cavity and salivary glands, contains ICD-10 codes for Diseases of esophagus, stomach and duodenum, appendix, Noninfective enteritis and colitis, Other diseases of intestines, peritoneum and retroperitoneum, Diseases of liver.

https://coder.aapc.com/icd-10-codes-range/133

According to the ICD-10 classification Chapter 11, a total of 151 diseases under 10 blocks availed of treatment in 2020. Taka 8,583.4 crore was expended to address these diseases and conditions , with Taka 3,794 crore on men and Taka 4,789.4 crore for women (see Table 26). The major category of expenditure relates to Diseases of the esophagus, stomach, and duodenum (Taka 3,343 crore), specifically associated with problems in the digestive system.

Table 26: Recurrent Expenditure for Diseases of the Digestive System by Gender

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
K00-K95	**Diseases of the digestive system**		*Crore Taka*		
K00-K14	Diseases of oral cavity, salivary glands and jaws	359.7	407.8	767.5	8.7%
K20-K31	Diseases of esophagus, stomach and duodenum	1,186.7	2,156.2	3,342.9	37.7%
K35-K38	Diseases of appendix	522.0	458.7	980.7	11.1%
K40-K46	Hernia	35.3	13.3	48.6	0.5%
K50-K52	Non-infective enteritis and colitis	136.8	113.0	249.8	2.8%
K55-K64	Other diseases of intestines	1,381.2	1,644.4	3,025.6	34.1%
K65-K67	Diseases of peritoneum	0.7	1.2	1.8	0.0%
K70-K77	Diseases of liver	95.5	88.6	184.2	2.1%
K80-K87	Diseases of gallbladder, biliary tract and pancreas	121.1	126.3	247.4	2.8%
K90-K93	Other diseases of the digestive system	12.4	8.7	21.1	0.2%
Total		3851.3	5018.3	8869.6	100%

Figure 31: Recurrent Expenditure by Diseases of the Digestive System and Age Category, 2020

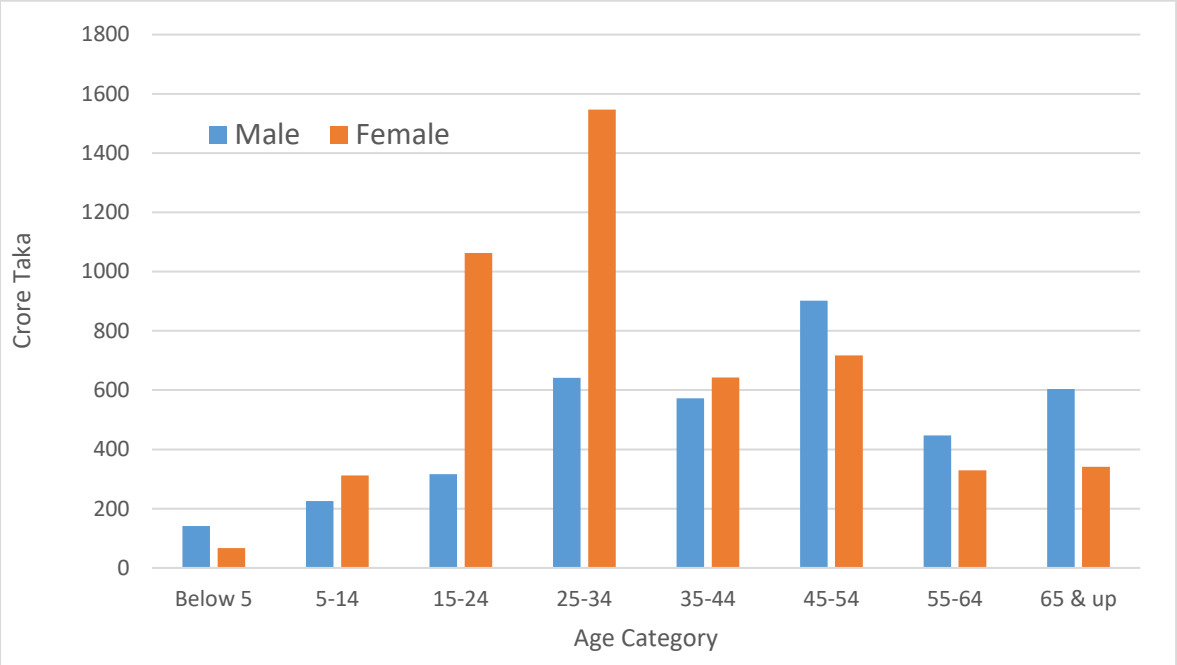
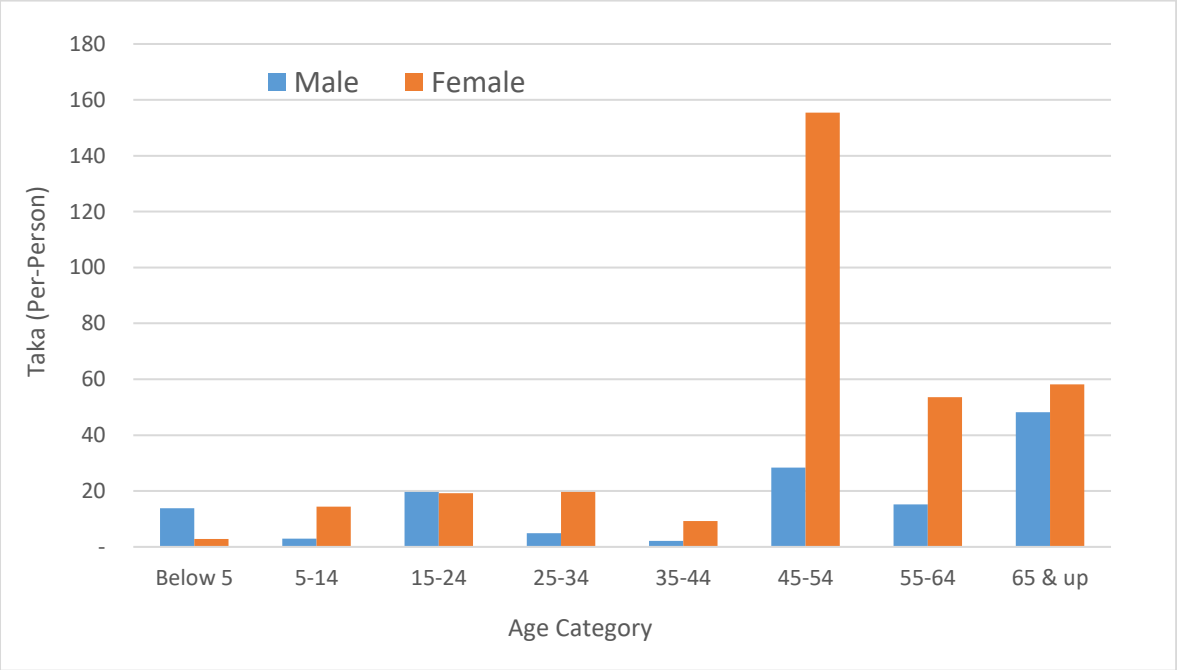


Figure 32: Per-Capita Expenditure by Diseases of the Digestive System and Age Category, 2020



ICD-10 Chapter XII: Diseases of the skin and subcutaneous tissue (L00-L99)

The ICD-10 code range for Diseases of the skin and subcutaneous tissue L00-L99 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (L00-L99), Diseases of the skin and subcutaneous tissue, contains ICD-10 codes for Infections of the skin and subcutaneous tissue, Bullous disorders, Dermatitis and eczema, Papulosquamous disorders, Urticarial and erythema, Radiation-related disorders of the skin and subcutaneous tissue.

https://coder.aapc.com/icd-10-codes-range/144

In adherence to the ICD-10 classification Chapter 12, a total of 108 diseases categorized under 8 blocks of disease classifications were identified availed of treatment in 2020. Taka 2,246 crore was expended to address diseases of these categories, with Taka 1,142 crore spent on men and Taka 1,104 crore on women (Table 27). The major categories of expenditure relate to Dermatitis and eczema (Taka 920 crore) and Disorders of skin appendages (Taka 451 crore), both associated with issues related to the skin and subcutaneous tissue.

Table 27: Recurrent Expenditure for Diseases of the Skin and Subcutaneous Tissue by Gender

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
L00-L99	**Diseases of the skin and subcutaneous tissue**				
L00-L08	Infections of the skin and subcutaneous tissue	174.6	127.7	302.3	13.5%
L10-L14	Bullous disorders	1.4	7.5	8.9	0.4%
L20-L30	Dermatitis and eczema	497.1	422.4	919.5	40.9%
L40-L45	Papulosquamous disorders	192.0	95.4	287.4	12.8%
L50-L54	Urticaria and erythema	46.8	37.4	84.2	3.7%
L55-L59	Radiation-related disorders of the skin and subcutaneous tissue	2.0	-	2.0	0.1%
L60-L75	Disorders of skin appendages	130.3	320.9	451.2	20.1%
L80-L99	Other disorders of the skin and subcutaneous tissue	98.0	93.0	190.9	8.5%
Total		1142.1	1104.3	2246.4	100%

Note: Values are in Crore Taka

Figure 33: Recurrent Expenditure by Diseases of the Skin and Subcutaneous Tissue and Age Category, 2020

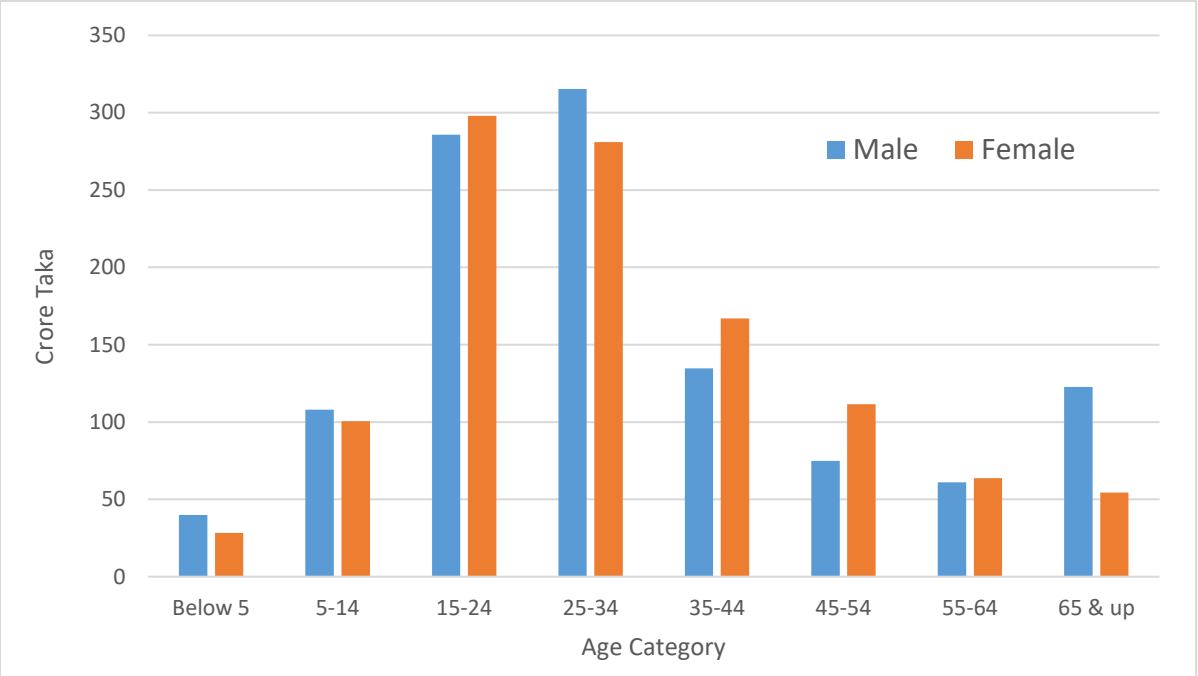
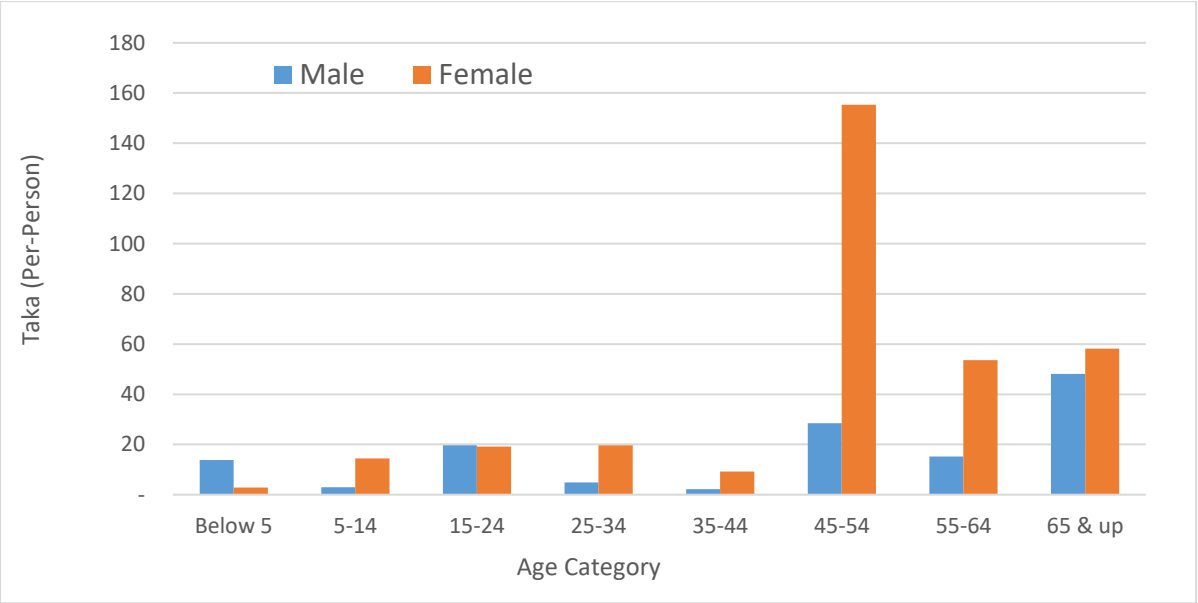


Figure 34: Per-Capita Expenditure by Diseases of the Skin and Subcutaneous Tissue and Age Category, 2020



ICD-10 Chapter XIII: Diseases of the Musculoskeletal System and Connective Tissue (M00-M99)

The ICD-10 code range for Diseases of the musculoskeletal system and connective tissue M00-M99 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (M00-M99), Diseases of the musculoskeletal system and connective tissue, contains ICD-10 codes for Arthropathies, Dentofacial anomalies [including malocclusion] and other disorders of jaw, Systemic connective tissue disorders, Dorsopathies, Soft tissue disorders, Osteopathies and chondropathies, Biomechanical lesions, not elsewhere classified.

https://coder.aapc.com/icd-10-codes-range/154

Under Chapter 13 of the ICD-10 classification, a total of 127 diseases under 15 blocks availed treatment in 2020. Taka 9,460 crore was expended to address these disease categories, with Taka 3,459 crore spent on men and Taka 6,001 crore on women (Table 28). Other dorsopathies, a disorder characterized by marked discomfort sensation in the back region, dominate this group, accounted for 36% of the expenditure (Taka 3,375 crore). Expenditure on other joint disorders (Taka 2,139 crore) and Osteoarthritis (Taka 1,411 crore) are also major categories of expenditures related to musculoskeletal tissue problems.

Table 28: Recurrent Expenditure for Diseases of the Musculoskeletal System and Connective Tissue by Gender

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
M00-M99	**Diseases of the musculoskeletal system and connective tissue**		Crore Taka		
M00-M03	Infectious arthropathies	0.7	4.6	5.3	0.1%
M05-M14	Inflammatory polyarthropathies	147.3	734.0	881.3	9.3%
M15-M19	Arthrosis	609.5	801.3	1,410.7	14.9%
M20-M25	Other joint disorders	743.7	1,395.7	2,139.4	22.6%
M30-M36	Systemic connective tissue disorders	4.1	4.1	8.2	0.1%
M40-M43	Deforming dorsopathies	6.3	65.2	71.5	0.8%
M45-M49	Spondylopathies	129.0	224.6	353.7	3.7%
M50-M54	Other dorsopathies	1,235.8	2,139.0	3,374.8	35.7%
M60-M63	Disorders of muscles	137.5	48.4	185.9	2.0%
M65-M68	Disorders of synovium and tendon	3.3	14.2	17.5	0.2%
M70-M79	Other soft tissue disorders	360.8	472.9	833.7	8.8%
M80-M85	Disorders of bone density and structure	61.9	68.9	130.9	1.4%
M86-M90	Other osteopathist	10.8	22.5	33.3	0.4%
M91-M94	Chondropathies	3.7	5.2	8.9	0.1%
M95-M99	Other disorders of the musculoskeletal system and connective tissue	4.9	-	4.9	0.1%
Total		3,459.1	6,000.6	9,459.8	100%

Figure 35: Recurrent Expenditure by Musculoskeletal System and Connective Tissue and Age Category, 2020

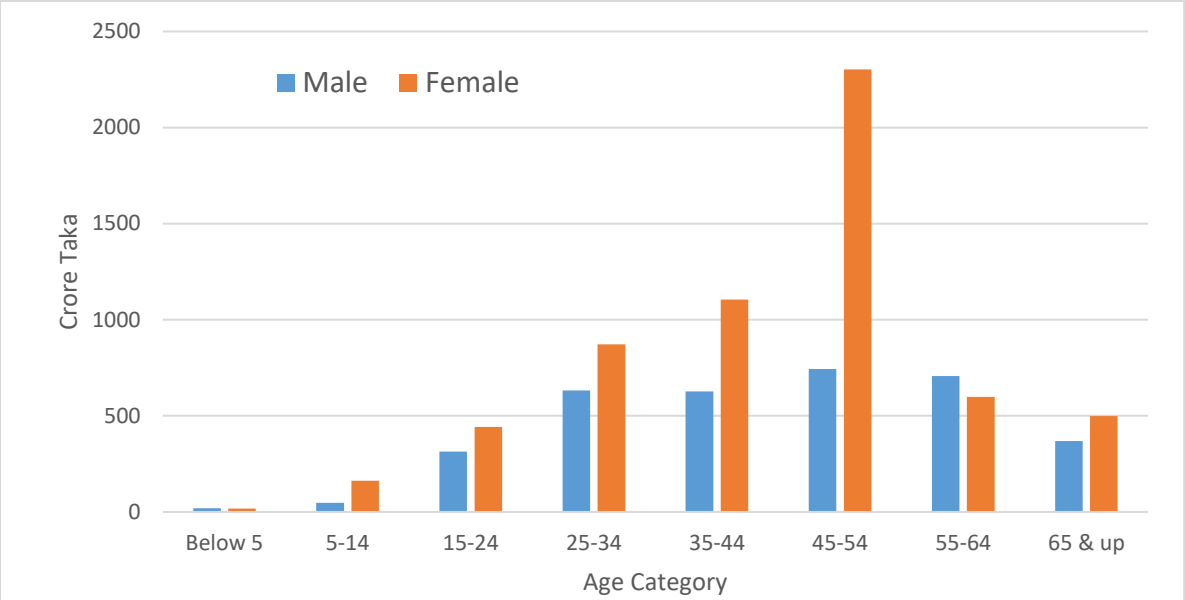
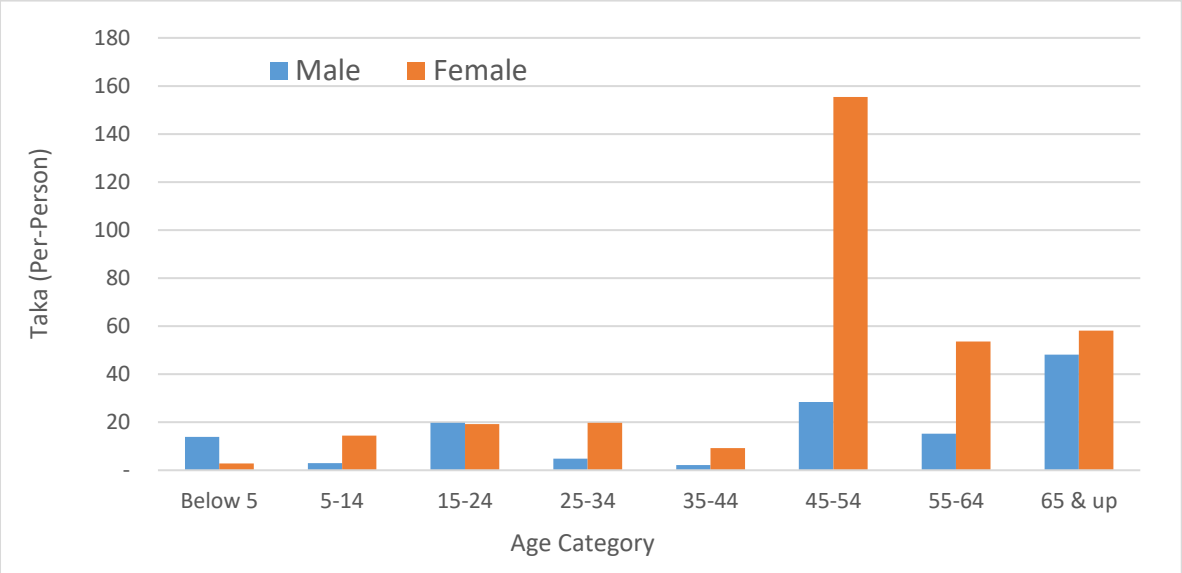


Figure 36: Per-Capita Expenditure by Musculoskeletal System and Connective Tissue and Age Category, 2020



ICD-10 Chapter XIV: Diseases of the Genitourinary System (N00-N99)

The ICD-10 code range for Diseases of the genitourinary system N00-N99 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (N00-N99), Diseases of the genitourinary system, contains ICD-10 codes for Glomerular diseases, Renal tubulo-interstitial diseases, Acute kidney failure and chronic kidney disease, Other diseases of the urinary system, kidney.

https://coder.aapc.com/icd-10-codes-range/177

According to the ICD-10 classification Chapter 14, a total of 134 diseases under 11 blocks received treatment in 2020. Taka 3,395 crore was spent to address these disease incidences , with Taka 994 crore on men and Taka 2,401 crore on women (Table 29). The major categories of expenditure relates to Noninflammatory disorders of the female genital tract (Taka 1,094 crore) and Other diseases of the urinary system (Taka 732 crore), both associated with issues in the urinary and reproductive systems.

Table 29: Recurrent Expenditure for Diseases of the Genitourinary System by Gender

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
N00-N99	**Diseases of the genitourinary system**		Crore Taka		
N00-N08	Glomerular diseases	35.8	19.2	55.0	1.6%
N10-N16	Renal tubulo-interstitial diseases	25.5	12.7	38.2	1.1%
N17-N19	Renal failure	184.5	65.0	249.4	7.3%
N20-N23	Urolithiasis	55.0	59.2	114.2	3.4%
N25-N29	Other disorders of kidney and ureter	168.3	38.0	206.3	6.1%
N30-N39	Other diseases of the urinary system	265.8	466.0	731.8	21.6%
N40-N51	Diseases of male genital organs	211.1	4.3	215.5	6.3%
N60-N64	Disorders of breast	10.3	625.7	635.9	18.7%
N70-N77	Inflammatory diseases of female pelvic organs	3.6	46.7	50.3	1.5%
N80-N98	Non-inflammatory disorders of female genital tract	34.3	1,059.8	1,094.1	32.2%
N99-N99	Other disorders of the genito-urinary system	-	4.2	4.2	0.1%
Total		994.2	2,400.7	3,394.9	100%

Figure 37: Recurrent Expenditure by Diseases of the Genitourinary System and Age Category, 2020

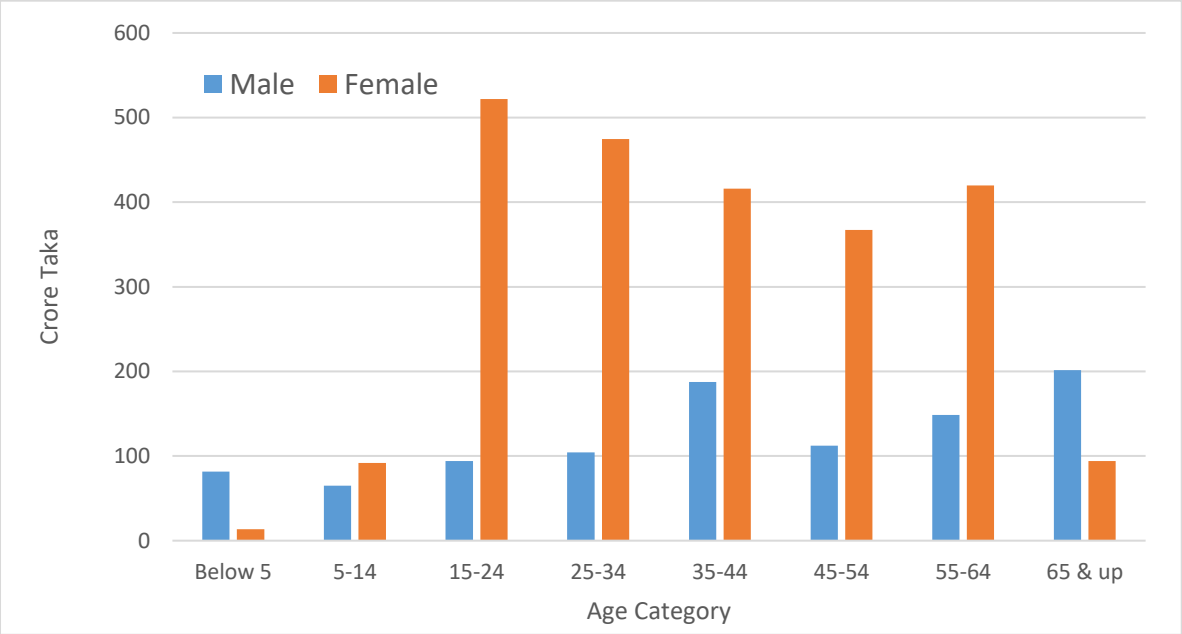
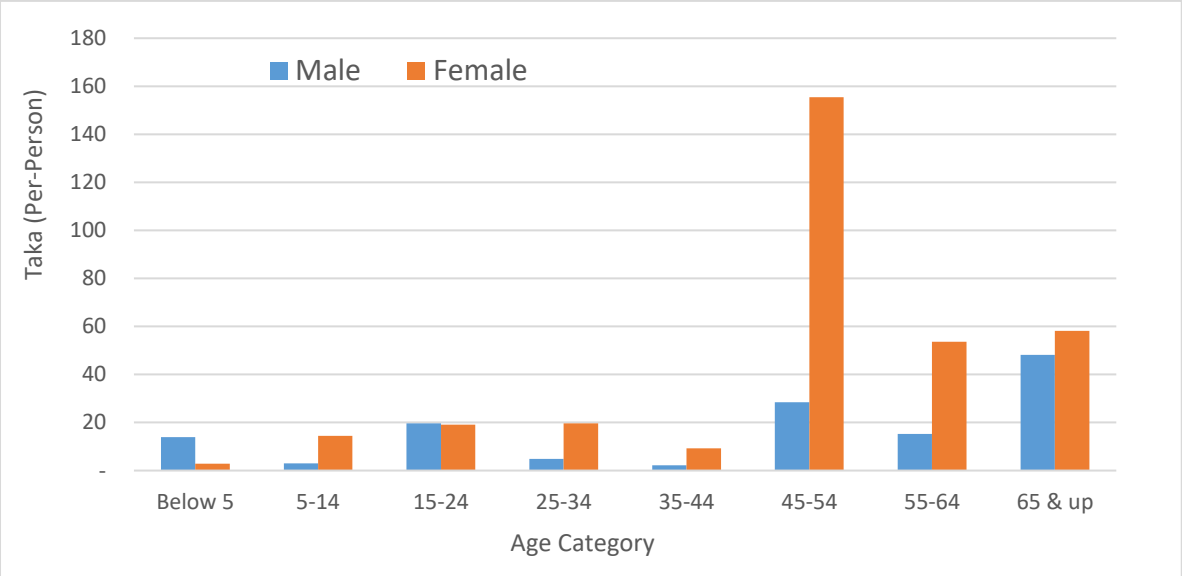


Figure 38: Per-Capita Expenditure by Diseases of the Genitourinary System and Age Category, 2020



ICD-10 Chapter XV: Pregnancy, childbirth and the puerperium (O00-O9A)

The ICD-10 code range for Pregnancy, childbirth and the puerperium O00-O9A is medical classification list by the World Health Organization (WHO). ICD-10 Code range (O00-O9A), Pregnancy, childbirth and the puerperium, contains ICD-10 codes for Pregnancy with abortive outcome, Supervision of high risk pregnancy, Edema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium, Other maternal disorders predominantly related to pregnancy, Maternal care related to the fetus and amniotic cavity and possible delivery problems, complications of labor and delivery, Encounter for delivery, Complications predominantly related to the puerperium.

https://coder.aapc.com/icd-10-codes-range/189

In adherence to the ICD-10 classification Chapter 15, a total of 95 diseases categorized under 8 blocks of disease classifications were identified to have availed treatment in 2020. Taka 2,477 crore was exclusively spent on females to address these disease categories and conditions (Table 30). The major types

of expenditure relates to Delivery (Taka 1,262 crore) and Other maternal disorders predominantly related to pregnancy (Taka 447 crore), both associated with pregnancy and related conditions.

Table 30: Recurrent Expenditure for Pregnancy, Childbirth and the Puerperium and Connective Tissue by

ICD10	*Classification of Diseases and Conditions*	*Female*	*Col.%*
O00-O9A	**Pregnancy, child birth and the puerperium**		
O00-O08	Pregnancy with abortive outcome	76.3	3.1%
O10-O16	Oedema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium	28.1	1.1%
O20-O29	Other maternal disorders predominantly related to pregnancy	446.6	18.0%
O30-O48	Maternal care related to the foetus and amniotic cavity and possible delivery problems	209.9	8.5%
O60-O75	Complications of labour and delivery	173.0	7.0%
O80-O84	Delivery	1,261.6	50.9%
O85-O92	Complications predominantly related to the puerperium	131.4	5.3%
O94-O99	Other obstetric conditions, not elsewhere classified	150.0	6.1%
Total		2,477	100%

Note: Values are in Crore Taka

Figure 39: Recurrent Expenditure by Pregnancy, Childbirth and the Puerperium and Connective Tissue and Age Category, 2020

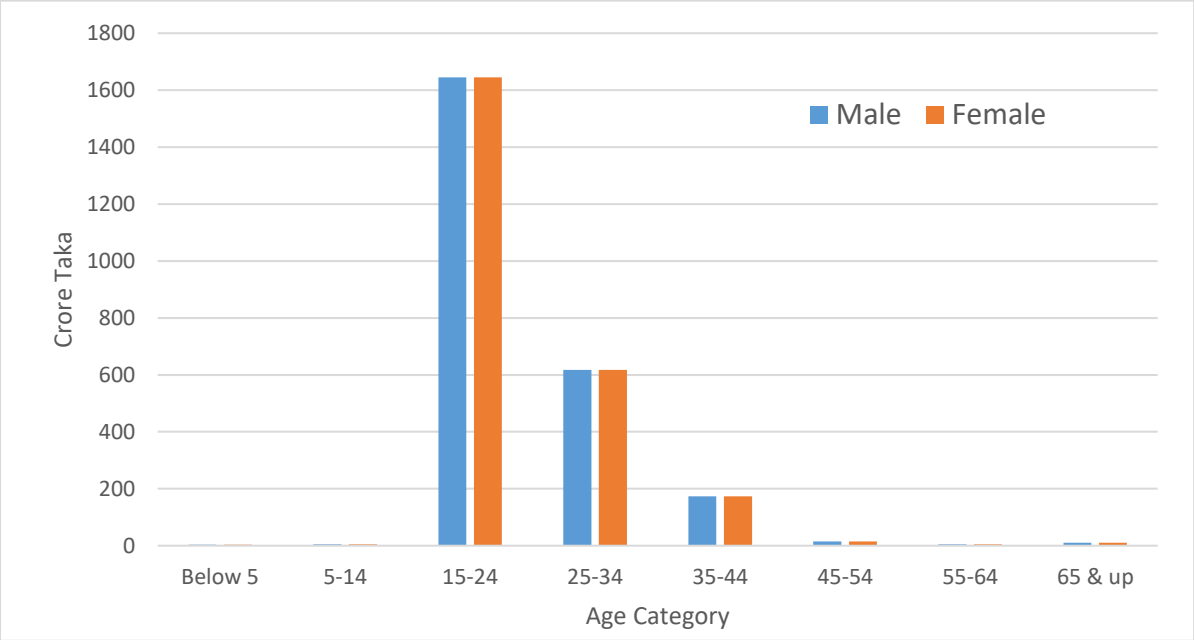
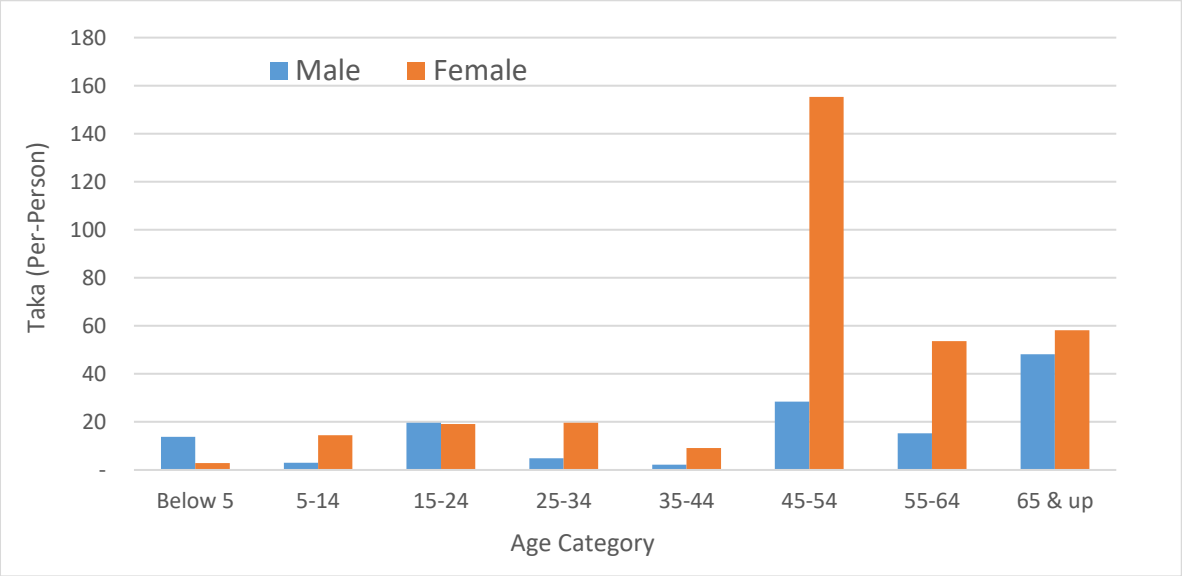


Figure 40: Per-Capita Expenditure by Pregnancy, Childbirth and the Puerperium and Connective Tissue and Age Category, 2020



ICD-10 Chapter XVI: Certain conditions originating in the perinatal period (P00-P96)

The ICD-10 code range for Certain conditions originating in the perinatal period P00-P96 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (P00-P96), Certain conditions originating in the perinatal period, contains ICD-10 codes for Newborn affected by maternal factors and by complications of pregnancy, labor, and delivery, Disorders of newborn related to length of gestation and fetal growth, Abnormal findings on neonatal screening, Birth trauma, hematological disorders of newborn, Transitory endocrine and metabolic disorders specific to newborn.

https://coder.aapc.com/icd-10-codes-range/199

As per the ICD-10 classification Chapter 16, a total of 34 diseases under 10 blocks received treatment in 2020. Taka 98 crore was spent to address these diseases categories and conditions (Table 31). The major categories of expenditure relate to Disorders related to length of gestation and fetal growth (Taka 51 crore) and Infections specific to the perinatal period (Taka 13 crore), both associated with perinatal conditions.

Table 31: Recurrent Expenditure for Certain Conditions Originating in Perinatal Period by Gender

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
P00-P96	**Certain conditions originating in the perinatal period**				
P00-P04	Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	-	3.0	3.0	3.0%
P05-P08	Disorders related to length of gestation and foetal growth	4.1	47.0	51.1	52.1%
P10-P15	Birth trauma	1.4	0.2	1.6	1.6%
P20-P29	Respiratory and cardiovascular disorders specific to the perinatal period	6.9	5.8	12.7	12.9%
P35-P39	Infections specific to the perinatal period	8.1	4.7	12.8	13.1%
P50-P61	Hemorrhagic and hematological disorders of foetus and newborn	6.2	5.2	11.4	11.6%
P70-P74	Transitory endocrine and metabolic disorders specific to foetus and newborn	0.1	0.3	0.4	0.4%
P75-P78	Digestive system disorders of foetus and newborn	0.7	-	0.7	0.7%
P80-P83	Conditions involving the integument and temperature regulation of foetus and newborn	0.6	-	0.6	0.6%
P90-P96	Other disorders originating in the perinatal period	0.3	3.6	3.8	3.9%
Total		28.4	69.7	98.0	100%

Note: Values are in Crore Taka

Figure 41: Recurrent Expenditure by Certain Conditions Originating in Perinatal Period and Age Category, 2020

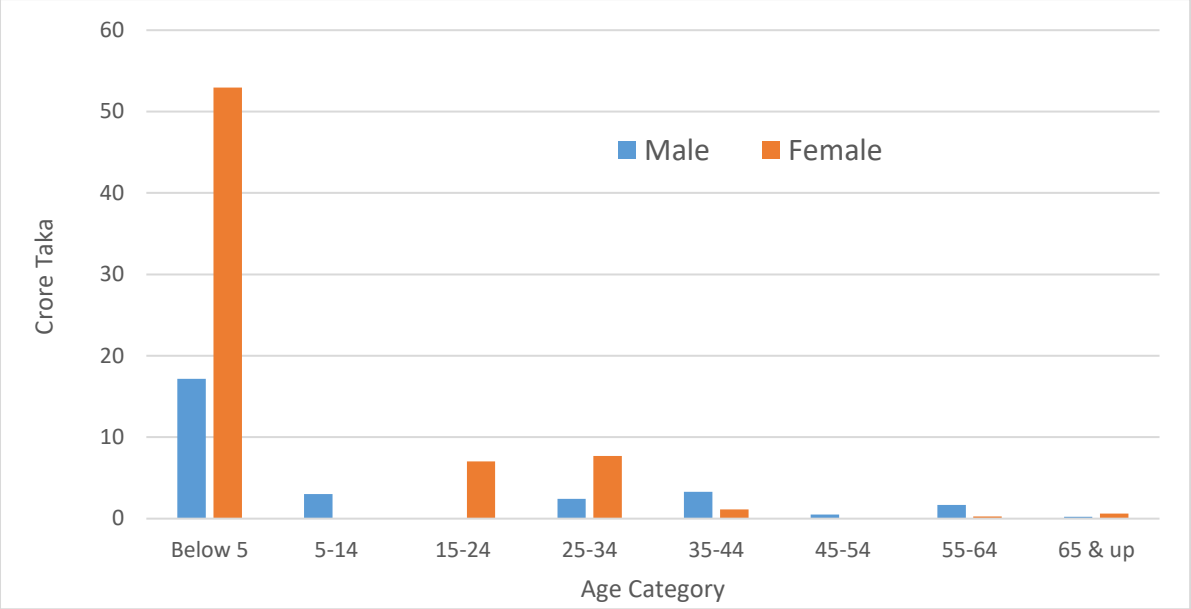
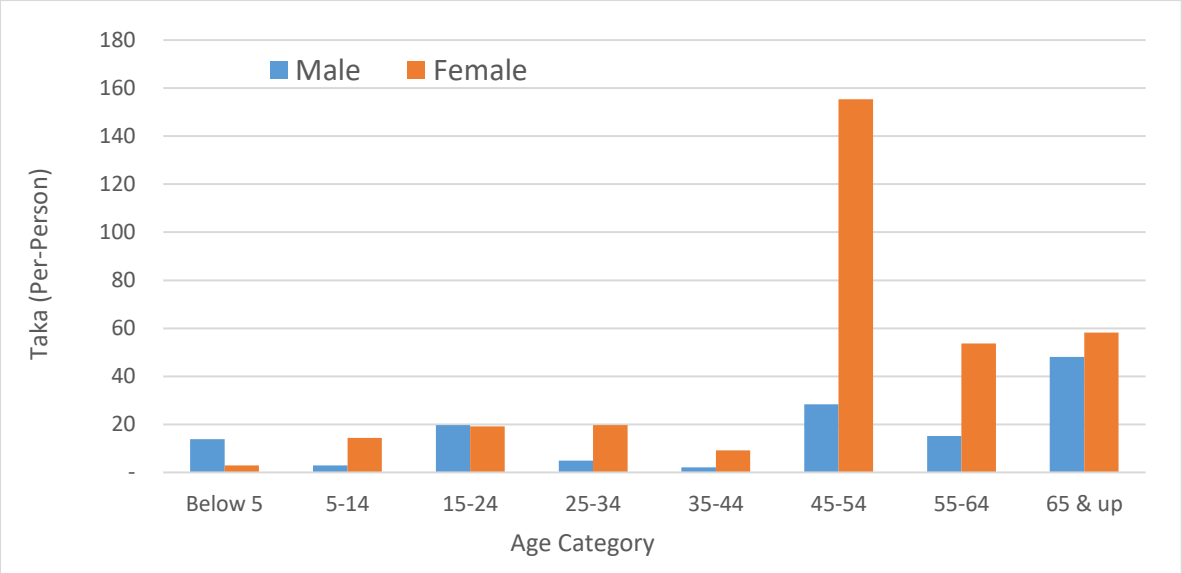


Figure 42: Per-Capita Expenditure by Certain Conditions Originating in Perinatal Period and Age Category, 2020



ICD-10 Chapter XVII: Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)

The ICD-10 code range for Congenital malformations, deformations and chromosomal abnormalities Q00-Q99 is medical classification list by the World Health Organization (WHO).ICD-10 Code range (Q00-Q99), Congenital malformations, deformations and chromosomal abnormalities, contains ICD-10 codes for Congenital malformations of the nervous system, Congenital malformations of eye, ear, face and neck, malformations of the circulatory system, malformations of the respiratory system, Cleft lip and cleft palate, Other congenital malformations of the digestive system.

https://coder.aapc.com/icd-10-codes-range/212

In adherence to the ICD-10 classification Chapter 17, a total of 5 diseases categorized under 9 blocks of disease classifications were identified that availed treatment in 2020. Taka 273 crore was spent to address these disease categories and conditions (Table 32). The major categories of expenditure relate to Congenital malformations of the circulatory system (Taka 202 crore) and Congenital malformations of eye, ear, face, and neck (Taka 26 crore), both associated with congenital conditions.

Table 32: Recurrent Expenditure for Congenital Malformations, Deformations and Chromosomal Abnormalities by Gender

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
Q00-Q99	**Congenital malformations, deformations and chrosomal abnormalities**		Crore Taka		
Q10-Q18	Congenital malformations of eye, ear, face and neck	13.1	12.4	25.6	9.4%
Q20-Q28	Congenital malformations of the circulatory system	22.3	179.6	202.0	73.9%
Q30-Q34	Congenital malformations of the respiratory system	2.0	3.0	4.9	1.8%
Q35-Q37	Cleft lip and cleft palate	1.6	0.3	1.8	0.7%
Q38-Q45	Other congenital malformations of the digestive system	2.6	1.2	3.8	1.4%
Q50-Q56	Congenital malformations of genital organs	5.2	5.6	10.8	3.9%
Q60-Q64	Congenital malformations of the urinary system	6.4	1.0	7.4	2.7%
Q65-Q79	Congenital malformations and deformations of the musculoskeletal system	4.3	1.4	5.8	2.1%
Q80-Q89	Other congenital malformations	5.1	6.2	11.3	4.1%
Total		62.7	210.6	273.3	100%

Note: Values are in Crore Taka

Figure 43: Recurrent Expenditure by Congenital Malformations, Deformations and Chromosomal Abnormalities and Age Category, 2020

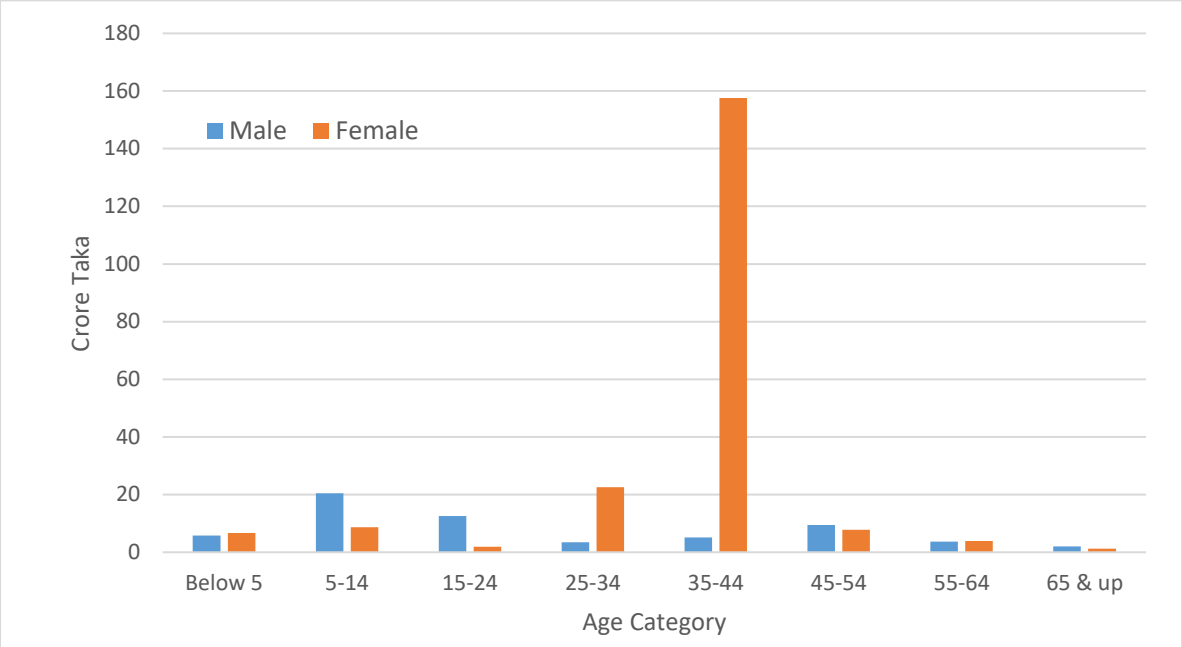
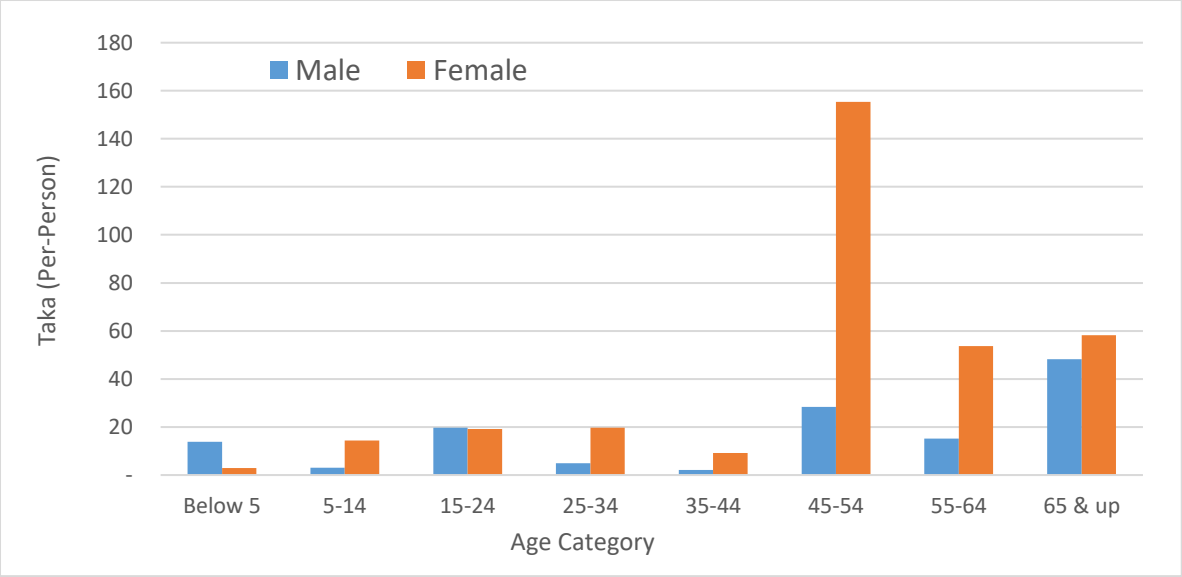


Figure 44: Per-Capita Expenditure by Congenital Malformations, Deformations and Chromosomal Abnormalities and Age Category, 2020



ICD-10 Chapter XVIII: Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)

The ICD-10 code range for Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified R00-R99 is medical classification list by the World Health Organization (WHO).ICD-10 Code range (R00-R99), Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified, contains ICD-10 codes for Symptoms and signs involving the digestive system and abdomen, subcutaneous tissue, nervous and musculoskeletal systems, genitourinary system, cognition, perception, emotional state and behavior.

https://coder.aapc.com/icd-10-codes-range/224

According to the ICD-10 classification, a total of 109 diseases and conditions are captured under this category. Taka 8,010 crore was spent to address this category of symptoms, signs, and abnormal clinical and laboratory findings, with General symptoms and signs accounting for 59% of the expenditure (Taka 4,703 crore) reported under this group. Expenditure on Symptoms and signs involving the circulatory and respiratory systems (Taka 1,833 crore) and Symptoms and signs involving the digestive system and abdomen (Taka 603 crore) are also major expenditures under this category (Table 33). Taka 3,758 crore was spent on males, and Taka 4,251 crore on females.

Table 33: Recurrent Expenditure for Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
R00-R99	**Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified**	*Crore Taka*			
R00-R09	Symptoms and signs involving the circulatory and respiratory systems	936.5	896.1	1,832.5	22.9%
R10-R19	Symptoms and signs involving the digestive system and abdomen	204.7	398.7	603.4	7.5%
R20-R23	Symptoms and signs involving the skin and subcutaneous tissue	35.2	23.6	58.8	0.7%
R25-R29	Symptoms and signs involving the nervous and musculoskeletal systems	33.2	102.0	135.3	1.7%
R30-R39	Symptoms and signs involving the urinary system	134.9	85.4	220.3	2.7%
R40-R46	Symptoms and signs involving cognition, perception, emotional state and behavior	139.9	159.8	299.7	3.7%
R47-R49	Symptoms and signs involving speech and voice	2.4	8.6	11.0	0.1%
R50-R69	General symptoms and signs	2,146.3	2,556.7	4,702.9	58.7%
R70-R79	Abnormal findings on examination of blood, without diagnosis	84.0	10.9	94.9	1.2%
R80-R82	Abnormal findings on examination of urine, without diagnosis	13.2	7.8	21.1	0.3%
R83-R89	Abnormal findings on examination of other body fluids, substances and tissues, without diagnosis	1.6	-	1.6	0.0%
R90-R94	Abnormal findings on diagnostic imaging and in function studies, without diagnosis	26.5	1.8	28.3	0.4%
Total		3,758.4	4,251.2	8,009.6	100%

Figure 45: Recurrent Expenditure by Symptoms, signs and abnormal clinical and laboratory findings and Age Category, 2020

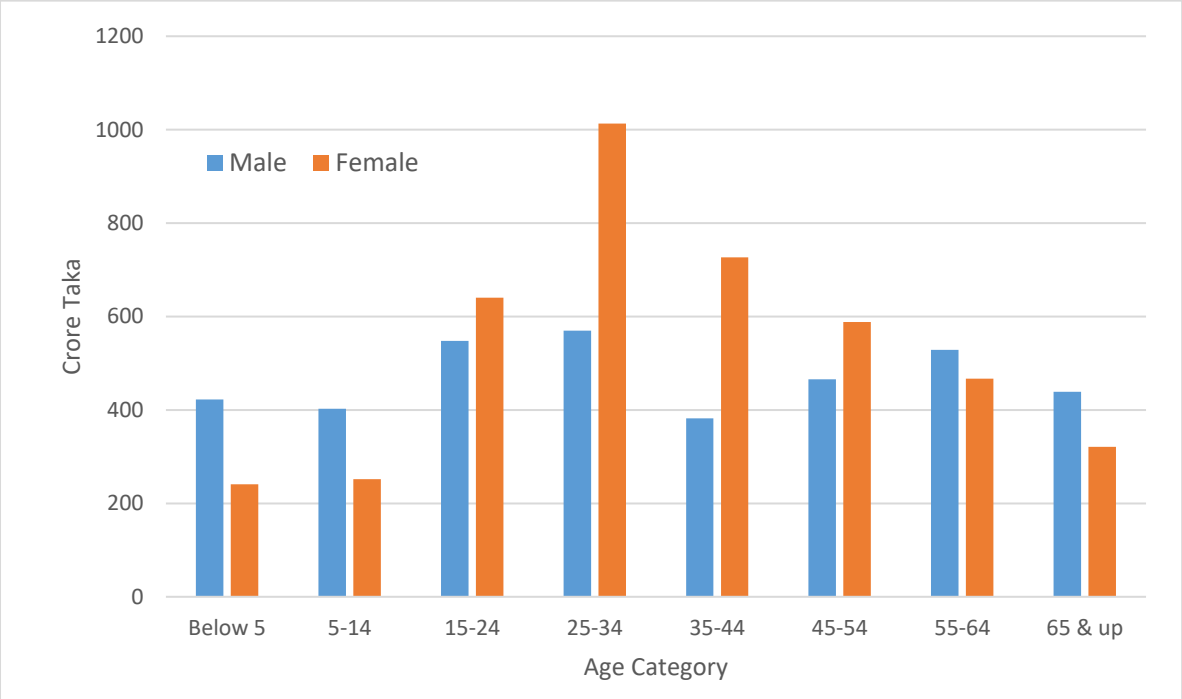
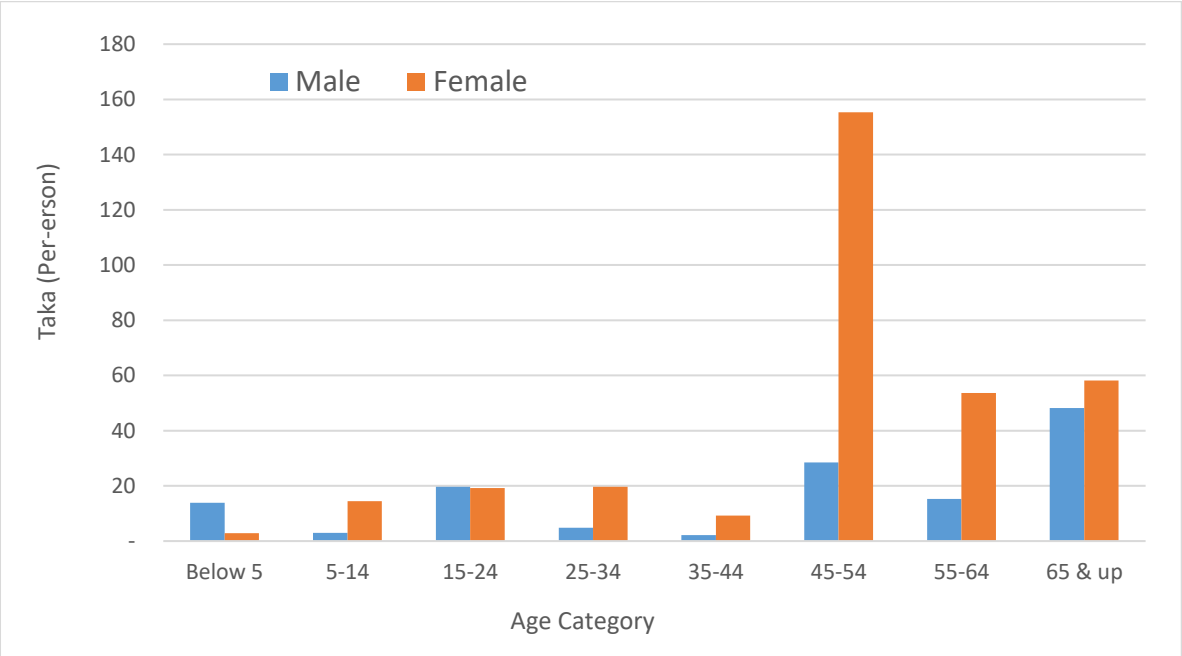


Figure 46: Per-Capita Expenditure by Symptoms, signs and abnormal clinical and laboratory findings and Age Category, 2020



ICD-10 Chapter XIX: Injury, poisoning and certain other consequences of external causes (S00-T88)

The ICD-10 code range for Injury, poisoning and certain other consequences of external causes S00-T88 is medical classification list by the World Health Organization (WHO). ICD-10 Code range (S00-T88), Injury, poisoning and certain other consequences of external causes, contains ICD-10 codes for Injuries to the head, neck, thorax, abdomen, lower back, lumbar spine, pelvis and external genitals, shoulder and upper arm, elbow and forearm, wrist, hand and fingers.

https://coder.aapc.com/icd-10-codes-range/239

In adherence to the ICD-10 classification Chapter 19, a total of 238 diseases categorized under 22 blocks of disease classifications were identified that availed treatment in 2020. Taka 2,387 crore was spent to address these disease categories and conditions, with Taka 1,350 crore for men and Taka 1,036 crore for women (Table 34). The major categories of expenditure relate to Injury of unspecified body region (Taka 572.6 crore), Other and unspecified effects of external causes (Taka 561 crore), and unspecified effects of external causes (Taka 462 crore).

Table 34: Recurrent Expenditure for Injury, Poisoning and Certain Other Consequences of External Causes by Gender

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
S00-T88	**Injuries, poisoning and certain other consequences of external causes**	Crore Taka			
S00-S09	Injuries to the head	152.0	52.9	204.9	8.6%
S10-S19	Injuries to the neck	8.0	2.6	10.6	0.4%
S20-S29	Injuries to the thorax	27.6	11.3	38.9	1.6%
S30-S39	Injuries to the abdomen, lower back, lumbar spine and pelvis	33.9	48.2	82.0	3.4%
S40-S49	Injuries to the shoulder and upper arm	36.9	7.7	44.6	1.9%
S50-S59	Injuries to the elbow and forearm	121.1	15.5	136.6	5.7%
S60-S69	Injuries to the wrist and hand	39.4	77.5	116.8	4.9%
S70-S79	Injuries to the hip and thigh	57.6	16.1	73.6	3.1%
S80-S89	Injuries to the knee and lower leg	94.4	29.9	124.3	5.2%
S90-S99	Injuries to the ankle and foot	50.5	63.0	113.5	4.8%
T00-T07	Injuries involving multiple body regions	13.3	11.7	25.0	1.0%
T08-T14	Injuries to unspecified part of trunk, limb or body region	353.9	206.9	560.8	23.5%
T15-T19	Effects of foreign body entering through natural orifice	12.0	8.4	20.3	0.9%
T20-T25	Burns and corrosions of external body surface, specified by site	46.9	19.6	66.5	2.8%
T26-T28	Burns and corrosions confined to eye and internal organs	5.5	0.3	5.8	0.2%
T29-T32	Burns and corrosions of multiple and unspecified body regions	42.1	46.4	88.5	3.7%
T36-T50	Poisoning by drugs, medicaments and biological substances	8.3	2.9	11.2	0.5%
T51-T65	Toxic effects of substances chiefly nonmedical as to source	36.0	29.0	65.0	2.7%
T66-T78	Other and unspecified effects of external causes	132.2	330.0	462.2	19.4%
T79-T79	Certain early complications of trauma	0.7	-	0.7	0.0%
T80-T88	Complications of surgical and medical care, not elsewhere classified	78.0	55.3	133.2	5.6%
T90-T98	Sequelae of injuries, of poisoning and of other consequences of external causes	-	1.2	1.2	0.1%
Total		1,350.2	1,036.3	2,386.5	100%

Figure 47: Recurrent Expenditure by Injury, Poisoning and Certain Other Consequences of External Causes and Age Category, 2020

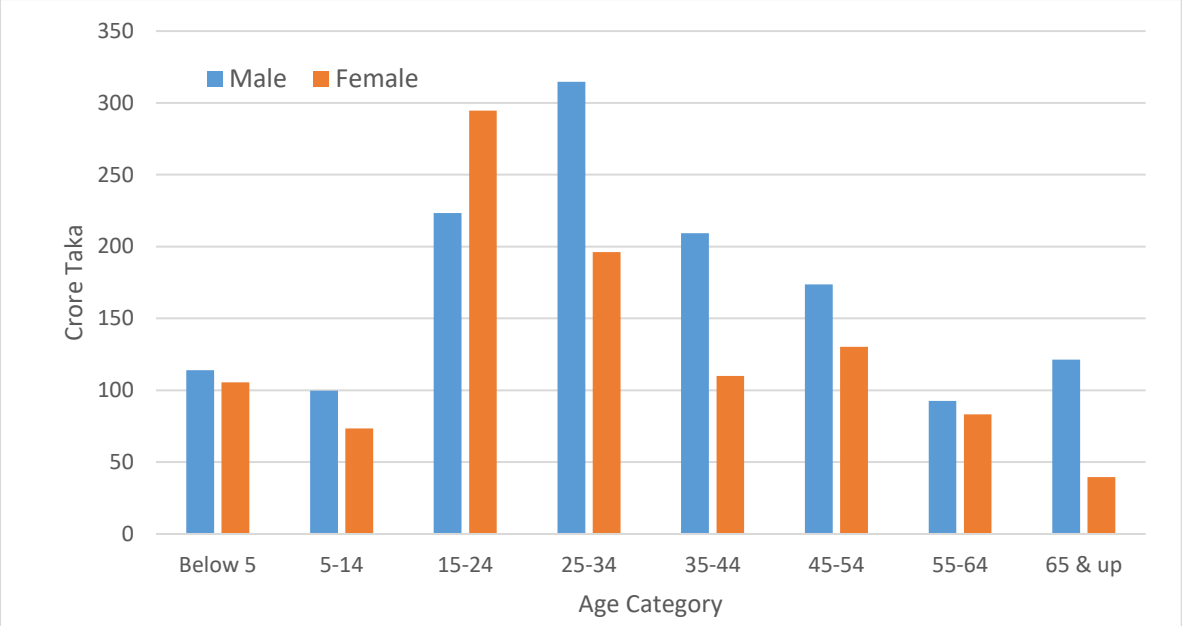
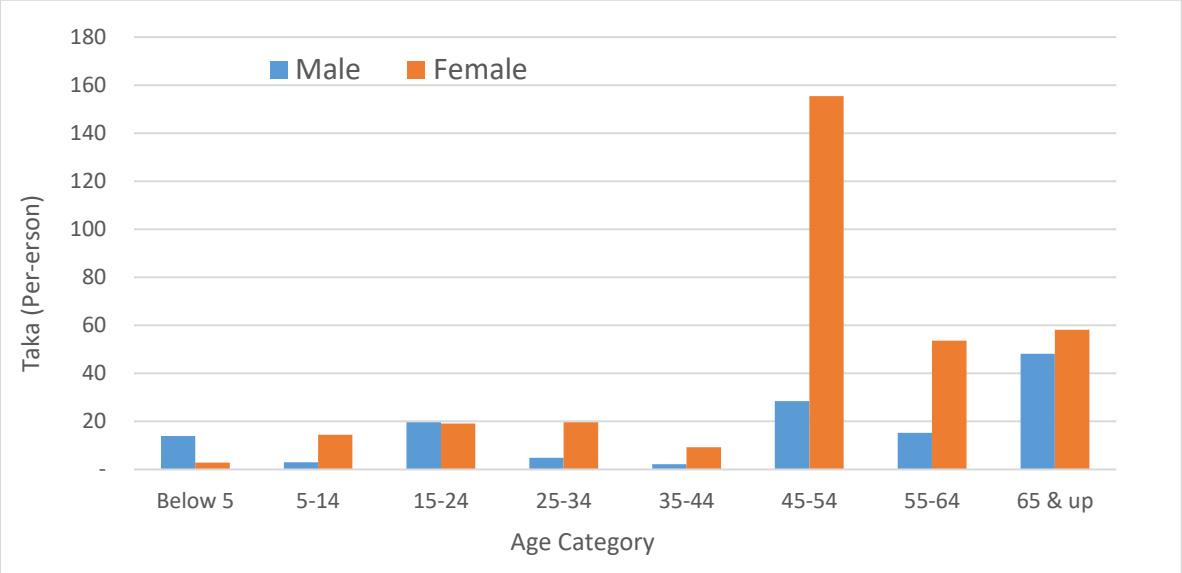


Figure 48: Per-Capita Expenditure by Injury, Poisoning and Certain Other Consequences of External Causes and Age Category, 2020



ICD-10 Chapter XX: External causes of morbidity (V00-Y99)

The ICD-10 code range for External causes of morbidity V00-Y99 is medical classification list by the World Health Organization (WHO).ICD-10 Code range (V00-Y99), External causes of morbidity, contains ICD-10 codes for Accidents, Intentional self-harm, Assault, Event of undetermined intent, Legal intervention, operations of war, military operations, and terrorism, Complications of medical and surgical care, Supplementary factors related to causes of morbidity classified elsewhere.

As per ICD-10 classification, a total of 45 disease and conditions under 22 broader diseases classification are included in this category. Taka 440 crore was spent to address these categories of morbidities of which Taka 306 crore was on men and Taka 134 crore on women (Table 35). Assault (Taka 176 crore), Other and unspecified transport accidents (Taka 93 crore) and Falls (Taka 57 crore) were the three major category of expenditures identified under the DSA.

Table 35: Recurrent Expenditure for External Causes of Morbidity by Gender

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
V00-Y99	**External causes of morbidity and mortality**		Crore Taka		
V20-V29	Motorcycle rider injured in transport accident	0.4	-	0.4	0.1%
V80-V89	Other land transport accidents	11.1	1.0	12.1	2.7%
V90-V94	Water transport accidents	-	0.1	0.1	0.0%
V98-V99	Other and unspecified transport accidents	35.6	57.2	92.8	21.1%
W00-W19	Falls	49.3	7.6	56.9	12.9%
W20-W49	Exposure to inanimate mechanical forces	14.5	1.2	15.7	3.6%
W50-W64	Exposure to animate mechanical forces	9.4	3.0	12.4	2.8%
W65-W74	Accidental drowning and submersion	0.2	0.3	0.5	0.1%
W75-W84	Other accidental threats to breathing	0.5	0.1	0.6	0.1%
W85-W99	Exposure to electric current, radiation and extreme ambient air temperature and pressure	4.6	1.4	6.1	1.4%
X10-X19	Contact with heat and hot substances	11.0	13.2	24.2	5.5%
X20-X29	Contact with venomous animals and plants	-	0.0	0.0	0.0%
X40-X49	Accidental poisoning by and exposure to noxious substances	1.3	4.3	5.6	1.3%
X58-X59	Exposure to other and unspecified factors	0.6	-	0.6	0.1%
X60-X84	Intentional self-harm	0.1	-	0.1	0.0%
X85-Y09	Assault	137.7	38.6	176.3	40.1%
Y10-Y34	Event of undetermined intent	4.7	2.1	6.8	1.5%
Y35-Y36	Legal interventions and operations of war	20.4	3.4	23.8	5.4%
Y40-Y59	Drugs, medicaments and biological substances causing adverse effects in therapeutic use	2.6	0.4	3.0	0.7%
Y60-Y69	Misadventures to patients during surgical and medical care	1.0	-	1.0	0.2%
Y83-Y84	Surgical and other medical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure	1.0	-	1.0	0.2%
Total		306.0	133.7	439.6	100%

Figure 49: Recurrent Expenditure by External Causes of Morbidity and Age Category, 2020

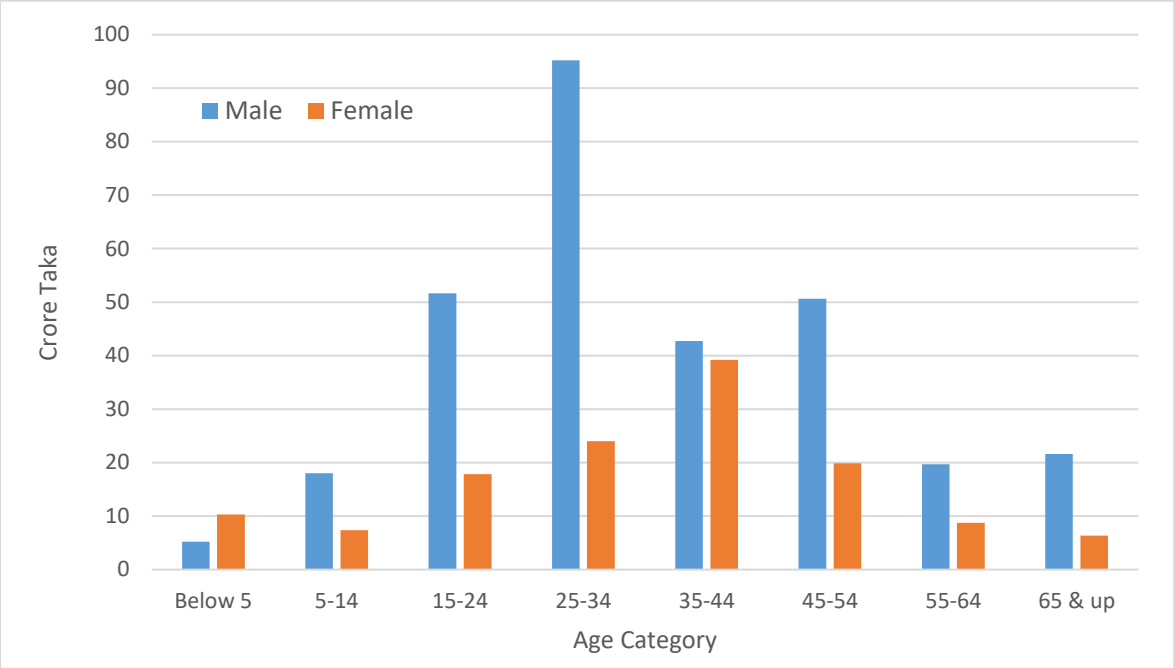
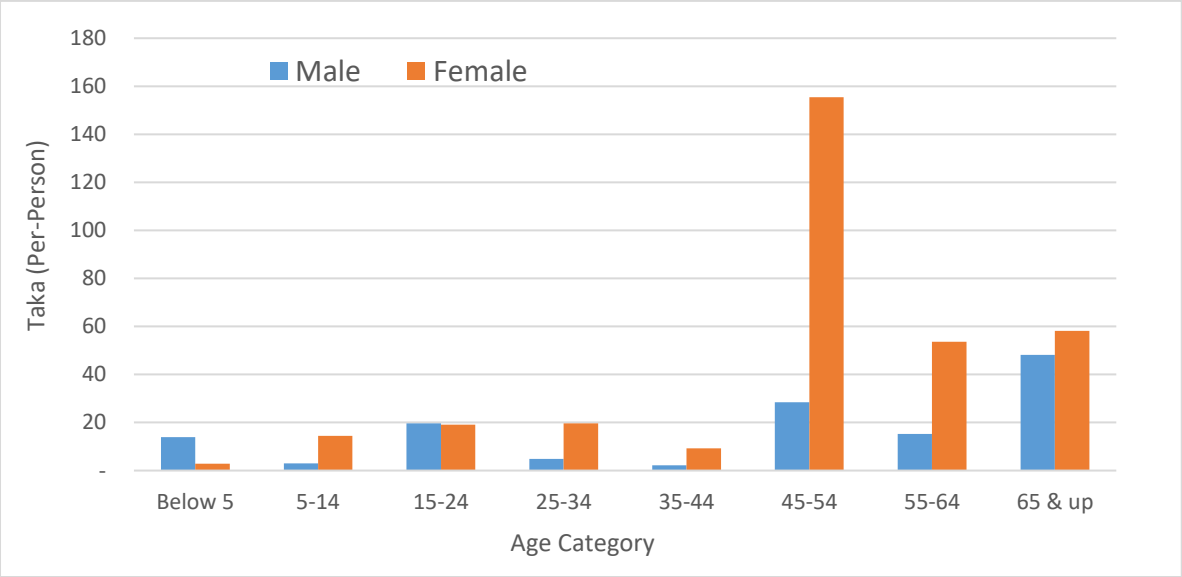


Figure 50: Per-Capita Expenditure by External Causes of Morbidity and Age Category, 2020



ICD-10 Chapter XXI: Factors influencing health status and contact with health services (Z00-Z99)

The ICD-10 code range for Factors influencing health status and contact with health services Z00-Z99 is medical classification list by the World Health Organization (WHO).ICD-10 Code range (Z00-Z99), Factors influencing health status and contact with health services, contains ICD-10 codes for Persons encountering health services for examinations, Genetic carrier and genetic susceptibility to disease, Resistance to antimicrobial drugs, Estrogen receptor status, Retained foreign body fragments.

https://coder.aapc.com/icd-10-codes-range/239

In accordance with the ICD-10 classification, a total of 107 diseases under 7 broader disease classifications are included in this category. Taka 2,336 crore was spent to address these disease categories and conditions, with Taka 472 crore for men and Taka 1,864 crore for women (Table 36). Persons encountering health services in circumstances related to reproduction (Taka 1,720 crore) constitute the largest category of expenditures under this category.

Table 36: Recurrent Expenditure for Factors Influencing Health Status and Contact with Health Services by Gender

ICD10	*Classification of Diseases and Conditions*	*Male*	*Female*	*Total*	*Col.%*
Z00-Z99	**Factors influencing health status and contact with health services**	Crore Taka			
Z00-Z13	Persons encountering health services for examination and investigation	92.9	50.5	143.5	6.1%
Z20-Z29	Persons with potential health hazards related to communicable diseases	2.7	4.5	7.2	0.3%
Z30-Z39	Persons encountering health services in circumstances related to reproduction	14.0	1,706.9	1,720.9	73.7%
Z40-Z54	Persons encountering health services for specific procedures and health care	121.9	32.2	154.0	6.6%
Z55-Z65	Persons with potential health hazards related to socioeconomic and psychosocial circumstances	-	1.3	1.3	0.1%
Z70-Z76	Persons encountering health services in other circumstances	4.0	31.2	35.3	1.5%
Z80-Z99	Persons with potential health hazards related to family and personal history and certain conditions influencing health status	236.3	37.5	273.7	11.7%
Total		471.8	1,864.1	2,335.9	100%

Figure 51: Recurrent Expenditure by Factors Influencing Health Status and Contact with Health Services and Age Category, 2020

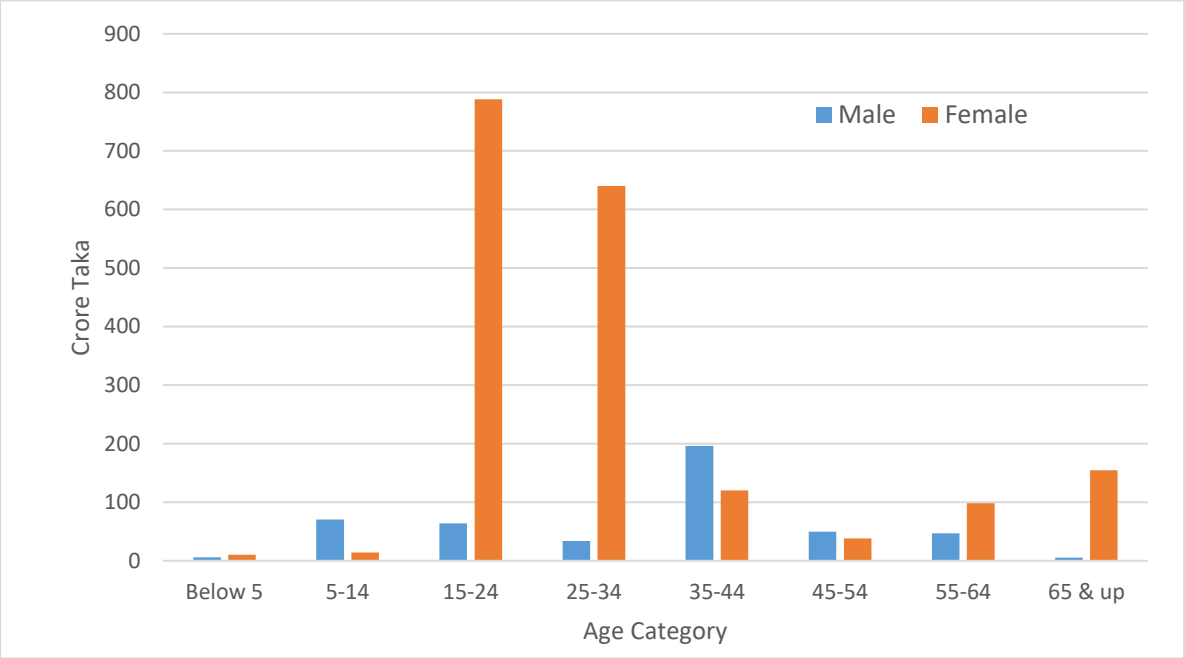
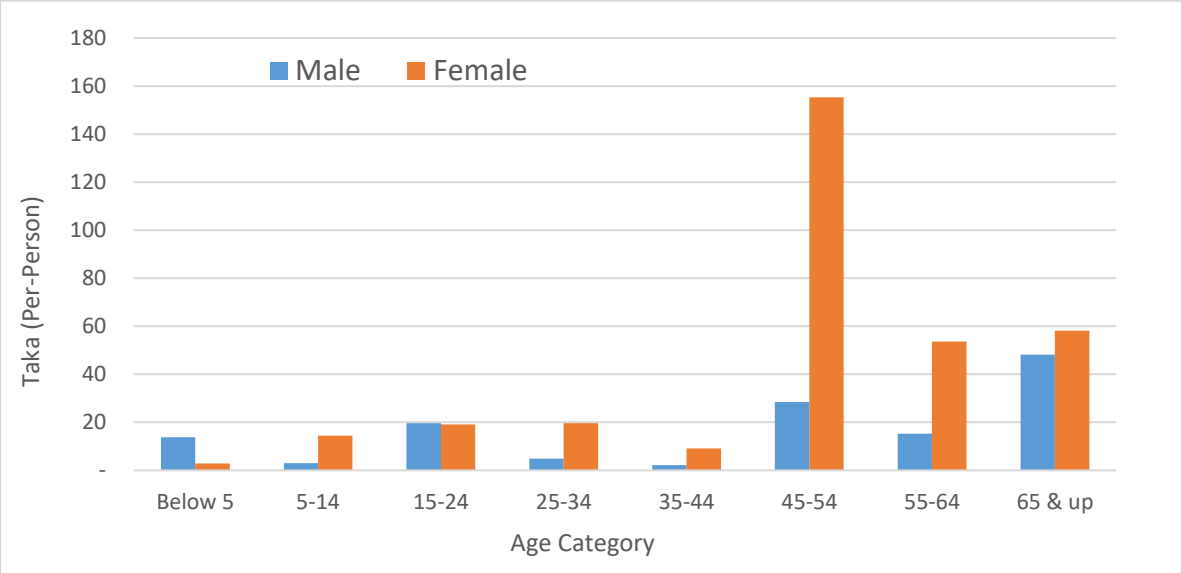


Figure 52: Per-Capita Expenditure by Factors Influencing Health Status and Contact with Health Services and Age Category, 2020



IV. Conclusion and Policy Implications

This study provides a national recurrent expenditure on diseases for 2020. It uses a well-established approach and methodology and outlays for 21 major defined categories. The report provides expenditure estimates by gender and age by diseases and conditions.

A comparison between 2020 and 2015 spending on diseases shows consistency in the dominance of six major disease categories according to the International Disease Classification (ICD). The musculoskeletal system and connective tissue continue to be the foremost reasons for seeking treatment. The causes for musculoskeletal and connective tissue diseases vary widely but these conditions encompass a range of issues affecting bones, muscles, joints, ligaments, tendons, and other connective tissues. In Bangladesh, Dorsopathies, Joint disorder and Arthrosis accounts for around 73% of total expenditure on the diseases of musculoskeletal and connective tissue diseases. For the treatment of musculoskeletal and connective tissue, in 2020, Taka 4,336 crore is spent by the female while it is Taka 2,589 for male.

To reduce the burden of musculoskeletal and connective tissue diseases more in-depth research is necessary. Notwithstanding this need, statistics reveal that 72% of the expenses associated with this category of diseases are attributed to medication, implying a high reliance on painkillers as a rapid remedy. By prioritizing lifestyle modifications and proactive measures, the likelihood of developing musculoskeletal and connective tissue conditions can be significantly mitigated.

Diseases of the digestive system encompass a broad range of conditions that affect the gastrointestinal tract, including the esophagus, stomach, intestines, liver, gallbladder, and pancreas. In 2020, a total of Taka 8,872 crore is spent on Diseases of the digestive system where 62% of the expenditure accounted for medicine. Reducing diseases of the digestive system through health education initiatives like implementing comprehensive public health campaigns to educate people about the importance of a balanced diet and regular exercise can be promoted. Policies or regulatory interventions that promote access to fresh, nutritious, and balanced meals, especially in underserved areas, is recommended. Subsidies for fruits, vegetables, and healthier food options can be considered. Support initiatives that help manage stress as it is closely linked to digestive health. Workplace wellness programs and mental health support can significantly impact digestive system-related issues.

Diseases of the circulatory system affect the heart, blood vessels, and blood itself, leading to various health conditions. In 2020, Diseases of the circulatory system accounted for Taka 8,865 crore, making it the third largest category of outlays on diseases in Bangladesh. In 2020, Acute respiratory infections and Chronic lower respiratory diseases accounted for around 72% of the expenditure under this diseases category.

The collaboration between the government and NGOs in advocating preventive and management approaches for circulatory system diseases has been found useful in other countries. This involves encouraging lifestyle modifications such as adopting a healthy diet, engaging in consistent exercise, quitting smoking, handling stress, and managing conditions like diabetes and high cholesterol, which can prove beneficial.

Pharmaceutical Expenditure

Spending on pharmaceuticals consistently stands out as the primary factor in Bangladesh's healthcare expenses. In 2020, pharmaceutical spending accounted for 57% of the total current health expenditure. Over time, there has been a noticeable upward trend in the share of spending on pharmaceuticals. Conducting a comprehensive study on pharmaceutical usage to assess its appropriateness is long overdue to address the financial strains caused by medication costs.

As an immediate measure to alleviate this burden, the government could introduce a cost-sharing model. This model would allow patients to purchase drugs from hospital pharmacies at a subsidized rate, with a suggested 50% reduction. This initiative aims to halve the out-of-pocket spending for patients buying medication from public health facilities.

To elaborate further, consider this scenario. A patient buys medicine for Taka 100 from a pharmacy. The pricing of the drug includes the wholesale or factory price, overhead expense, and the outlet's profit margin. Typically, pharmaceutical companies offer substantial discounts, around 20%-30%, to retail outlets, especially for bulk purchases. Consequently, the hospital, taking advantage of these discounts, could procure the same medicine for around Taka 80 or even less.

Under this proposed plan, if the medicine is sold at a subsidized rate (at 50% discount), the patient would only need to pay Taka 40. This amount represents a 60% reduction compared to what they would have paid at a retail drug outlet. This strategy would considerably reduce patients' medication expenses while leveraging bulk purchasing would have financial benefit to the hospital.

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Annex I: Detailed T-test results by ICD-10 Chapters

ICD-10 Chapter I: Certain infectious and parasitic diseases (A00-B99)

A t-test, analyzing expenditure disparities between males and females for Certain infectious and parasitic diseases (A00-B99), indicates a statistically significant difference. The findings demonstrate that females' average spending (Mean=Tk. 3,117, Std. Dev. 16,129) is notably higher than that of males (Mean=Tk. 2,153, Std. Dev. 10,220), with a t-value of -3.407 and a p-value of 0.0007, indicating significance.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   4,737    2152.696    148.4871    10219.75    1861.593      2443.8
  Female |   4,487     3116.76    240.7895     16129.3    2644.694    3588.827
---------+--------------------------------------------------------------------
combined |   9,224    2621.664    139.8491    13431.34    2347.529    2895.799
---------+--------------------------------------------------------------------
    diff |            -964.064    282.8922               -1518.612   -409.5162
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                              t =  -3.4079
Ho: diff = 0                     Satterthwaite's degrees of freedom =  7516.93

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0003         Pr(|T| > |t|) = 0.0007          Pr(T > t) = 0.9997
```

ICD-10 Chapter II: Neoplasms (C00-D49)

A t-test comparing expenditure between males and females for Neoplasms (C00-D49) found no statistically significant difference. Despite males showing a higher average spending (Mean=Tk. 4,396, Std. Dev. 22,154) compared to females (Mean=Tk. 3,743, Std. Dev. 17,145), the test results with a t-value of .79 and p-value of 0.431 suggest that this difference is not statistically valid.

```
-> ICDBigBlocks = C00-D48

Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   1,102    4396.168     667.384    22154.74     3086.68    5705.656
  Female |   1,208    3743.445    493.3008    17145.31    2775.623    4711.267
---------+--------------------------------------------------------------------
combined |   2,310     4054.83    409.7378       19693    3251.338    4858.323
---------+--------------------------------------------------------------------
    diff |            652.7229    829.9078               -974.8186    2280.264
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                              t =   0.7865
Ho: diff = 0                     Satterthwaite's degrees of freedom =  2069.28

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.7842         Pr(|T| > |t|) = 0.4317          Pr(T > t) = 0.2158
```

ICD-10 Chapter III: Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (D50-D89)

A t-test comparing expenditure between males and females for Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (D50-D89) found no statistically significant difference. Despite females showing a higher average spending (Mean=Tk. 5,359, Std. Dev. 29,225) compared to males (Mean=Tk. 3,243, Std. Dev. 13,441), the test results with a t-value of -1.23 and p-value of 0.218 suggest that this difference is not statistically valid.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |     214    3242.716    918.7913    13440.76    1431.627    5053.804
  Female |     405    5359.332     1452.21    29225.16      2504.5    8214.163
---------+--------------------------------------------------------------------
combined |     619    4627.578    1002.122     24932.5    2659.601    6595.554
---------+--------------------------------------------------------------------
    diff |           -2116.616    1718.456               -5491.451    1258.219
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                                  t =  -1.2317
Ho: diff = 0                     Satterthwaite's degrees of freedom =  607.531

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.1093         Pr(|T| > |t|) = 0.2185          Pr(T > t) = 0.8907
```

ICD-10 Chapter IV: Endocrine, nutritional and metabolic diseases (E00-E89)

A t-test, analyzing expenditure disparities between males and females for Endocrine, nutritional and metabolic diseases (E00-E89), indicates a statistically significant difference. The findings demonstrate that females' average spending (Mean=Tk. 6,345, Std. Dev. 25,827) is notably higher than that of males (Mean=Tk. 4,084, Std. Dev. 10,655), with a t-value of -3.34 and a p-value of 0.0009, indicating significance.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   1,449    4084.482    332.4627    12655.44    3432.322    4736.642
  Female |   1,914     6345.63    590.3515    25827.46    5187.829     7503.43
---------+--------------------------------------------------------------------
combined |   3,363     5371.38    365.7157    21208.36    4654.332    6088.427
---------+--------------------------------------------------------------------
    diff |           -2261.147    677.5296               -3589.63   -932.6648
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                                  t =  -3.3373
Ho: diff = 0                     Satterthwaite's degrees of freedom =  2929.54

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0004         Pr(|T| > |t|) = 0.0009          Pr(T > t) = 0.9996
```

ICD-10 Chapter V: Mental, Behavioral and Neurodevelopmental disorders (F01-F99)

A t-test comparing expenditure between males and females for Mental, Behavioral and Neurodevelopmental disorders (F01-F99) found no statistically significant difference. Despite females showing a higher average spending (Mean=Tk. 5,232, Std. Dev. 24,048) compared to males (Mean=Tk. 4,057, Std. Dev. 22,112), the test results with a t-value of 1.399 and p-value of 0.161 suggest that this difference is not statistically valid.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   1,475    4057.346    575.7497    22112.09     2927.97    5186.722
  Female |   1,554    5231.636    610.0516    24048.72    4035.024    6428.247
---------+--------------------------------------------------------------------
combined |   3,029    4659.804      420.26    23129.58     3835.78    5483.828
---------+--------------------------------------------------------------------
    diff |            -1174.29    838.8389               -2819.042    470.4626
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                              t =  -1.3999
Ho: diff = 0                     Satterthwaite's degrees of freedom =  3023.96

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0808         Pr(|T| > |t|) = 0.1616          Pr(T > t) = 0.9192
```

ICD-10 Chapter VI: Diseases of the nervous system (G00-G99)

A t-test comparing expenditure between males and females for Diseases of the nervous system (G00-G99) found no statistically significant difference. Despite females showing a higher average spending (Mean=Tk. 5,287, Std. Dev. 20,966) compared to males (Mean=Tk. 3,998, Std. Dev. 17,373), the test results with a t-value of 1.427 and p-value of 0.153 suggest that this difference is not statistically valid.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |     817      3997.5    607.7885    17372.55    2804.487    5190.513
  Female |     985    5286.865    668.0266    20965.82    3975.944    6597.785
---------+--------------------------------------------------------------------
combined |   1,802    4702.286    457.5894    19424.65    3804.824    5599.748
---------+--------------------------------------------------------------------
    diff |           -1289.365    903.1425               -3060.683    481.9532
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                              t =  -1.4276
Ho: diff = 0                     Satterthwaite's degrees of freedom =     1800

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0768         Pr(|T| > |t|) = 0.1536          Pr(T > t) = 0.9232
```

ICD-10 Chapter VII: Diseases of the eye and adnexa (H00-H59)

A t-test comparing expenditure between males and females for Diseases of the eye and adnexa (H00-H59) found no statistically significant difference. Despite females showing a higher average spending (Mean=Tk. 4,298, Std. Dev. 20,905) compared to males (Mean=Tk. 3,009, Std. Dev. 12,750), the test results with a t-value of -1.655 and p-value of 0.098 suggest that this difference is not statistically valid.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   1,013     3009.62    400.5803    12749.53    2223.557    3795.683
  Female |     981    4298.133    667.4351    20904.68    2988.367    5607.899
---------+--------------------------------------------------------------------
combined |   1,994    3643.537    386.4814    17258.03    2885.587    4401.487
---------+--------------------------------------------------------------------
    diff |           -1288.513    778.4177               -2815.331    238.3053
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                              t =  -1.6553
Ho: diff = 0                     Satterthwaite's degrees of freedom =  1610.78

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0490         Pr(|T| > |t|) = 0.0981          Pr(T > t) = 0.9510
```

ICD-10 Chapter VIII: Diseases of the ear and mastoid process (H60-H95)

A t-test comparing expenditure between males and females for Diseases of the ear and mastoid process (H60-H95) found no statistically significant difference. Despite females showing a higher average spending (Mean=Tk. 3,725, Std. Dev. 16,019) compared to males (Mean=Tk. 2,818, Std. Dev. 13,524), the test results with a t-value of -1.274 and p-value of 0.202 suggest that this difference is not statistically valid.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |     754    2818.127    492.5149       13524    1851.261    3784.992
  Female |     970    3725.361    514.3648     16019.8    2715.964    4734.758
---------+--------------------------------------------------------------------
combined |   1,724    3328.577    360.8311     14982.1    2620.864    4036.291
---------+--------------------------------------------------------------------
    diff |           -907.2343    712.1391               -2303.99    489.5212
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                              t =  -1.2740
Ho: diff = 0                     Satterthwaite's degrees of freedom =   1710.3

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.1014         Pr(|T| > |t|) = 0.2029          Pr(T > t) = 0.8986
```

ICD-10 Chapter IX: Diseases of the circulatory system (I00-I99)

A t-test, analyzing expenditure disparities between males and females for Diseases of the circulatory system (I00-I99), indicates a statistically significant difference. The findings demonstrate that females' average spending (Mean=Tk. 13,651, Std. Dev. 162,857) is notably higher than that of males (Mean=Tk. 6,240, Std. Dev. 27,355), with a t-value of -2.294 and a p-value of 0.0218, indicating significance.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   3,366    6240.349    471.5014    27355.21    5315.891    7164.808
  Female |   2,598    13650.72    3195.117      162857    7385.488    19915.96
---------+--------------------------------------------------------------------
combined |   5,964    9468.409    1417.694    109484.2    6689.215     12247.6
---------+--------------------------------------------------------------------
    diff |           -7410.373    3229.719               -13743.34   -1077.411
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                              t =  -2.2944
Ho: diff = 0                     Satterthwaite's degrees of freedom =  2710.35

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0109         Pr(|T| > |t|) = 0.0218          Pr(T > t) = 0.9891
```

ICD-10 Chapter X: Diseases of the respiratory system (J00-J99)

A t-test, analyzing expenditure disparities between males and females for Diseases of the respiratory system (J00-J99), indicates a statistically significant difference. The findings demonstrate that females' average spending (Mean=Tk. 6,302, Std. Dev. 31,484) is notably higher than that of males (Mean=Tk. 4,211, Std. Dev. 18,351), with a t-value of -3.341 and a p-value of 0.0008, indicating significance.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   4,167    4211.199    284.2883    18351.46    3653.843    4768.556
  Female |   3,192    6301.677    557.2587    31483.88    5209.055    7394.298
---------+--------------------------------------------------------------------
combined |   7,359    5117.954    290.6403    24932.47    4548.215    5687.692
---------+--------------------------------------------------------------------
    diff |           -2090.477    625.5854               -3316.91   -864.0445
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                              t =  -3.3416
Ho: diff = 0                     Satterthwaite's degrees of freedom =  4818.13

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0004         Pr(|T| > |t|) = 0.0008          Pr(T > t) = 0.9996
```

ICD-10 Chapter XI: Diseases of the digestive system (K00-K95)

A t-test, analyzing expenditure disparities between males and females for Diseases of the digestive system (K00-K95), indicates a statistically significant difference. The findings demonstrate that females' average spending (Mean=Tk. 8,054, Std. Dev. 57,250) is notably higher than that of males (Mean=Tk. 4,599, Std. Dev. 27,597), with a t-value of -4.048 and a p-value of 0.0001, indicating significance.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   5,731    4599.475    364.5417    27597.03    3884.835    5314.114
  Female |   5,504    8054.089    771.6822    57250.29    6541.287    9566.891
---------+--------------------------------------------------------------------
combined |  11,235    6291.882    421.5996    44687.57    5465.473    7118.291
---------+--------------------------------------------------------------------
    diff |           -3454.615    853.4542               -5127.612   -1781.618
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                                  t =  -4.0478
Ho: diff = 0                     Satterthwaite's degrees of freedom =  7857.36

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0000         Pr(|T| > |t|) = 0.0001          Pr(T > t) = 1.0000
```

ICD-10 Chapter XII: Diseases of the skin and subcutaneous tissue (L00-L99)

A t-test comparing expenditure between males and females for Diseases of the skin and subcutaneous tissue (L00-L99) found no statistically significant difference. Despite females showing a higher average spending (Mean=Tk. 4,163, Std. Dev. 17,852) compared to males (Mean=Tk. 3,829, Std. Dev. 22,582), the test results with a t-value of -0.525 and p-value of 0.599 suggest that this difference is not statistically valid.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   1,987      3829.4     506.597    22581.95    2835.883    4822.918
  Female |   2,154    4163.475    384.6392    17851.57    3409.172    4917.778
---------+--------------------------------------------------------------------
combined |   4,141    4003.174    314.8048    20257.88    3385.987    4620.361
---------+--------------------------------------------------------------------
    diff |           -334.0743    636.0722               -1581.152    913.0038
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                                  t =  -0.5252
Ho: diff = 0                     Satterthwaite's degrees of freedom =  3777.71

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.2997         Pr(|T| > |t|) = 0.5995          Pr(T > t) = 0.7003
```

ICD-10 Chapter XIII: Diseases of the Musculoskeletal System and Connective Tissue (M00-M99)

A t-test, analyzing expenditure disparities between males and females for Diseases of the Musculoskeletal System and Connective Tissue (M00-M99), indicates a statistically significant difference. The findings demonstrate that females' average spending (Mean=Tk. 9,923, Std. Dev. 57,278) is notably higher than that of males (Mean=Tk. 5,954, Std. Dev. 28,636), with a t-value of -3.9096 and a p-value of 0.0001, indicating significance.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   3,627     5954.64     475.491    28636.25    5022.383    6886.896
  Female |   4,079    9923.296    896.8416    57278.63    8164.997    11681.59
---------+--------------------------------------------------------------------
combined |   7,706     8055.36    525.2853    46111.56    7025.658    9085.062
---------+--------------------------------------------------------------------
    diff |           -3968.656    1015.094               -5958.596   -1978.716
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                                  t =  -3.9096
Ho: diff = 0                     Satterthwaite's degrees of freedom =  6146.62

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0000         Pr(|T| > |t|) = 0.0001          Pr(T > t) = 1.0000
```

ICD-10 Chapter XIV: Diseases of the genitourinary system (N00-N99)

A t-test, analyzing expenditure disparities between males and females for Diseases of the genitourinary system (N00-N99), indicates a statistically significant difference. The findings demonstrate that females' average spending (Mean=Tk. 5,811, Std. Dev. 34,491) is notably higher than that of males (Mean=Tk. 2,891, Std. Dev. 12,189), with a t-value of -4.4079 and a p-value of 0.0000, indicating significance.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   2,324    2891.284    252.8592    12189.81     2395.43    3387.137
  Female |   3,174    5810.983    612.2074     34490.7     4610.62    7011.345
---------+--------------------------------------------------------------------
combined |   5,498    4576.828    369.7219    27414.32    3852.027     5301.63
---------+--------------------------------------------------------------------
    diff |           -2919.699    662.3713               -4218.299   -1621.099
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                                  t =  -4.4079
Ho: diff = 0                     Satterthwaite's degrees of freedom =   4181.7

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0000         Pr(|T| > |t|) = 0.0000          Pr(T > t) = 1.0000
```

ICD-10 Chapter XVI: Certain conditions originating in the perinatal period (P00-P96)

A t-test comparing expenditure between males and females for Certain conditions originating in the perinatal period (P00-P96) found no statistically significant difference. Despite females showing a higher average spending (Mean=Tk. 1,572, Std. Dev. 9,056) compared to males (Mean=Tk. 950, Std. Dev. 2,450), the test results with a t-value of -1.126 and p-value of 0.261 suggest that this difference is not statistically valid.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |     184    949.7121    177.6333    2409.535    599.2395    1300.185
  Female |     300    1571.683    522.8736    9056.437    542.7043    2600.661
---------+--------------------------------------------------------------------
combined |     484    1335.231    331.1163    7284.558    684.6249    1985.837
---------+--------------------------------------------------------------------
    diff |           -621.9708    552.2232               -1707.918    463.9767
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                                  t =  -1.1263
Ho: diff = 0                     Satterthwaite's degrees of freedom =  364.076

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.1304         Pr(|T| > |t|) = 0.2608          Pr(T > t) = 0.8696
```

ICD-10 Chapter XVII: Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)

A t-test comparing expenditure between males and females for Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99) found no statistically significant difference. Despite females showing a higher average spending (Mean=Tk. 6,469, Std. Dev. 52,012) compared to males (Mean=Tk. 1,704, Std. Dev. 4,201), the test results with a t-value of -1.421 and p-value of 0.156 suggest that this difference is not statistically valid.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |     247    1704.492    267.3093    4201.096    1177.985    2230.999
  Female |     242    6469.018    3343.496    52012.59   -117.1892    13055.22
---------+--------------------------------------------------------------------
combined |     489    4062.396     1661.92    36750.61    796.9944    7327.798
---------+--------------------------------------------------------------------
    diff |           -4764.526    3354.165               -11371.33    1842.276
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                                  t =  -1.4205
Ho: diff = 0                     Satterthwaite's degrees of freedom =  244.081

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0784         Pr(|T| > |t|) = 0.1567          Pr(T > t) = 0.9216
```

ICD-10 Chapter XVIII: Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)

A t-test, analyzing expenditure disparities between males and females for Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99), indicates a statistically significant difference. The findings demonstrate that females' average spending (Mean=Tk. 3,898, Std. Dev. 20,702) is notably higher than that of males (Mean=Tk. 3,137, Std. Dev. 12,743), with a t-value of -2.7937 and a p-value of 0.0052, indicating significance.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   7,763    3137.651    144.6318     12743.2    2854.133    3421.168
  Female |   8,064    3897.942    230.5333    20701.84    3446.037    4349.846
---------+--------------------------------------------------------------------
combined |  15,827    3525.026    137.2483    17266.58    3256.003    3794.048
---------+--------------------------------------------------------------------
    diff |           -760.2909     272.147               -1293.737   -226.8448
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                              t =  -2.7937
Ho: diff = 0                     Satterthwaite's degrees of freedom =  13488.7

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0026         Pr(|T| > |t|) = 0.0052          Pr(T > t) = 0.9974
```

ICD-10 Chapter XIX: Injury, poisoning and certain other consequences of external causes (S00-T88)

A t-test comparing expenditure between males and females for Injury, poisoning and certain other consequences of external causes (S00-T88) found no statistically significant difference. Despite females showing a higher average spending (Mean=Tk. 3,269, Std. Dev. 34,793) compared to males (Mean=Tk. 2,181, Std. Dev. 9,315), the test results with a t-value of -1.555 and p-value of 0.120 suggest that this difference is not statistically valid.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   4,171    2181.236    144.2392    9315.441     1898.45    2464.022
  Female |   2,583     3269.45     684.592    34793.17    1927.045    4611.855
---------+--------------------------------------------------------------------
combined |   6,754    2597.413    276.5975    22731.54    2055.194    3139.631
---------+--------------------------------------------------------------------
    diff |           -1088.214    699.6222               -2460.039    283.6102
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                              t =  -1.5554
Ho: diff = 0                     Satterthwaite's degrees of freedom =   2812.9

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0600         Pr(|T| > |t|) = 0.1200          Pr(T > t) = 0.9400
```

ICD-10 Chapter XX: External causes of morbidity (V00-Y99)

A t-test comparing expenditure between males and females for External causes of morbidity (V00-Y99) found no statistically significant difference. Despite females showing a slightly higher average spending (Mean=Tk. 1,392, Std. Dev. 7,171) compared to males (Mean=Tk. 1,311, Std. Dev. 4,434), the test results with a t-value of -0.280 and p-value of 0.779 suggest that this difference is not statistically valid.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |   1,480    1310.579     115.252    4433.834    1084.504    1536.653
  Female |     722     1392.18    266.8847    7171.207    868.2163    1916.144
---------+--------------------------------------------------------------------
combined |   2,202    1337.334     116.834    5482.491    1108.218    1566.451
---------+--------------------------------------------------------------------
    diff |           -81.60173    290.7068               -652.0685     488.865
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                                  t =  -0.2807
Ho: diff = 0                     Satterthwaite's degrees of freedom =  998.069

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.3895         Pr(|T| > |t|) = 0.7790          Pr(T > t) = 0.6105
```

ICD-10 Chapter XXI: Factors influencing health status and contact with health services (Z00-Z99)

A t-test comparing expenditure between males and females for Factors influencing health status and contact with health services (Z00-Z99) found no statistically significant difference. Despite females showing a higher average spending (Mean=Tk. 5,846, Std. Dev. 27,225) compared to males (Mean=Tk. 5,706, Std. Dev. 36,380), the test results with a t-value of -0.084 and p-value of 0.932 suggest that this difference is not statistically valid.

```
Two-sample t test with unequal variances
------------------------------------------------------------------------------
   Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
    Male |     524    5705.891    1589.281    36380.31    2583.732     8828.05
  Female |   2,976    5846.215    499.0507    27224.58    4867.695    6824.735
---------+--------------------------------------------------------------------
combined |   3,500    5825.207    486.3899    28775.21     4871.57    6778.843
---------+--------------------------------------------------------------------
    diff |           -140.3239    1665.793               -3411.501    3130.853
------------------------------------------------------------------------------
    diff = mean(Male) - mean(Female)                                  t =  -0.0842
Ho: diff = 0                     Satterthwaite's degrees of freedom =  630.146

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.4664         Pr(|T| > |t|) = 0.9329          Pr(T > t) = 0.5336
```