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STUDY ON PUBLIC AND PRIVATE HOSPITAL PROVISION OF THE ESP AND NON-ESP SERVICES AND EFFICIENCY

FINAL REPORT

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ABBREVIATIONS AND ACRONYMS

ARI	Acute Respiratory Infection
DH	District Hospital
EMO	Emergency Medical Officer
EPI	Expanded Programme on Immunization
ESP	Essential Services Package
GOB	Government of Bangladesh
HEU	Health Economics Unit
HPSP	Health and Population Sector Programme
ICD	International Classification of Diseases
IEPSD	Institute for Economic and Private Sector Development
IHD	Ischamic Heart Disease
MOHFW	Ministry of Health and Family Welfare
MO	Medical Officer
MCH	Medical College Hospital
MSR	Medical and Surgical Requisite
NGO	Non-Government Organization
PIP	Program Implementation Plan
PUO	Pyrexia of Unknown Origin
PWD	Public Works Departments
SH	Specialized Hospital
TOR	Terms of Reference
UHC	Upazila Health Complex
UHFWC	Union Health and Family Welfare Centre
WHO	World Health Organization

Executive Summary

Today and every day, the lives of vast numbers of people lie in the hands of health systems. From the safe delivery of a healthy baby to the care with dignity of the frail elderly, health systems have a vital and continuing responsibility to people throughout the lifespan. They are crucial to the healthy development of individuals, families and societies everywhere. But what makes for a good health/hospital system? And how to know whether a system/ hospital is performing as well as it could? Whatever standard may apply, it is evident that some systems perform well, while others perform poorly. This is not due just to differences in availability of resource. As a matter of fact, performance can vary markedly, although hospitals have similar levels of expenditure. But the concern is that the way hospitals especially public hospitals are managed and financed affects people's lives and lives of the people of the respective area. The difference between a well-performing hospital and one that is failing, among other, can be measured in service profile, facility utilization, cost efficiency, quality of service and patient satisfaction. The challenge is to develop a better understanding of the factors that make a difference. This study in general looks at how well or how badly one of the important tiers of health system – District Hospitals addresses the need of the society.

In Bangladesh, the country-wide health service delivery system comprises three major tiers, viz: the Upazila and below structure (primary health care services); the District level structure (secondary nature health care services); and National level structure (tertiary and specialized nature health care services). From a public finance point of view, the District Hospitals' service provision claims a large portion of total public funding of health care in Bangladesh. But there exists very little or no benchmark data and analysis to support the policy makers to make necessary forecast and budgetary allocation – a first and foremost step towards efficient management of the health systems including District Hospitals.

A study sponsored by the Health Economics Unit in 1998 revealed a number of problems related to identifying clear service cost centres for dis-aggregation of case complexity and suggested that dis-aggregation would require establishing cost centres according to disease group rather than ward and carrying out a work pattern analysis of staff time. So, this study purports to provide information on the full-costs of services according to International Classification of Diseases (IDC) both by outpatient and inpatient and also by the main categories of patients within each of these departments of a representative sample of District Hospitals and a sub-sample of private level facilities.

All the six Divisions were covered in the selection of District Public Hospitals, and private hospitals were taken for the study as sub-samples criteria. Such as- size of hospital, general disease profile of the District, and physical location, etc. In light of the ICD-9, the services of District Hospitals have been aggregated into major 42 groups that cover the entire range of services of District Hospitals. Next to service profile staff were selected very carefully to capture full picture of staff time utilization. With thirteen (13) different data collection instruments data were collected. Exit patient interview was conducted for 5% of both inpatient and outpatient spread over 3 days. Area covered includes various aspects of service provision, hygiene and cleanness, residence, distance, demographic profile, literacy, income level, awareness, and most importantly cost incurred on health care (official and unofficial payments disaggregated by type of payments).

The 'field survey' aimed to obtain actual information of service profile, number of patients served and their classifications and costs of services. Staff time utilisation by different staff members for each category of patients, usage of supplies, consumables, equipment and other

resources in the facilities that were taken under review also comprised the range of data collection.

A combination of 'bottom-up' and 'top-down' approach was employed to costing the items. For example, for costing of staff time and MSR, bottom-up method was appropriate, while the use of bottom-up approach to cost overhead items such as maintenance, utilities is expensive and generates insufficient additional information to be of significant utility. The costing involved full cost accounting. As emphasized in the ToR, simple 'step-down' procedure was applied for costing.

Cost of health care services provided by a District Hospital implies the amount of expenditure (actual or notional) incurred on, or attributable to such health care services. Previous studies/costing exercises (e.g., Ranna-Eliya and Somanathan, 1999, IHE study) suggested that costing on 'ward basis' was not useful since wards are usually flexible. In line with ToR costs were accumulated based on the factors upon which the expenditures were incurred. Cost components of health care services of District hospitals consists of the factors upon which the expenditures are incurred; and these are Staff Cost, Cost of MSR, Cost of Usage of Equipment, Cost of Furniture and Fixture, Upkeep and Maintenance Cost of Structure, Overhead Cost at the Facility level, and Super overhead Cost or Overhead Cost incurred at the Central Level.

The report contains a detailed analysis of the data and information gathered through the survey. The average population of the sample districts used in the study is 2,393,493 and the major economic activities of the districts were found to be agriculture and related fields accounting for 52% of the total economic activities of the districts. Three of the six sample District Public Hospitals have 100s beds, two have 50 beds and one has 150-beds. Average monthly admission was 677 making bed occupancy of 101% implying that the beds are fully utilised. The average number of doctors in those facilities are 36 of which 25% is specialist making for a specialist-generalist doctor ratio of 0.56. From the three years data on patients of the six sample District Public Hospitals collected, compiled and analyzed. Show that the average yearly total patients was 75,383, with 69,003 outpatients and 6,380 inpatients. In terms of percentage, outpatients accounted for 91.5 percent, and inpatients constituted 8.5 percent. The overall growth of patients was 6%. The overall average monthly patients in the sample District Public Hospitals is 6,247 of which 5,569 are outpatients and 678 are inpatients.

Although the total number of patients has been categorised into 42 ICD categories, just patients of 10 diseases constitute 75% of the total patients treated. The major three types of services are Ulcer of Stomach and Duodenum (10%), Intestinal Infections Diseases (9%), and Intestinal Work Infection (9%). Overall, the average stay period of inpatients in the sample District Public Hospitals is 4.11 days.

Cost calculations were done mainly in terms of per patient total cost, and per patient cost of individual cost elements. Average of total cost per patient for delivering secondary health care services by the sample District Public Hospitals comes to Tk. 264.97: the per out-patient cost is Tk 76.00, while per inpatient stands at Tk 1,816.62. The cost of staff time is Tk 106.64. MSR cost incurred for each patient is Tk 25.97. The percentage of the cost of staff time spent to the total cost is 42% for out patients and 40% for inpatients.

The overall combined staff time utilisation per patient varies from the lowest 0.68 hours or around 40 minutes to the highest 27.86. The highest amount of time of 27.86 hours is spent for each Caesarean patient.

For District private hospitals, the patient data were collected form six representative sample private hospitals/clinics under five divisions across the country. The average yearly patients in the six sample private hospitals/ clinics was 2,203. The average growth was 6.7% per year. On average, monthly patients served by these hospitals/ clinics is 202. The highest patients come with direct/indirect obsteteric causes, fracture/dislocation problem, appendicectomy, cholisystectomy and injury. Some common type of services/ treatments being provided by private hospitals/clinics constitute a substantial portion of total service profile of the sample private hospitals. In other words, only 7 types of services constitute 44% of the activities of the private hospitals. This implies that private hospitals/clinics concentrate on mainly surgery-required services. The overall increase in the number of patients of all categories of diseases in the year 2000-01 was 10% over the previous year.

The average per patient total cost of services of sample private hospitals has been found Tk.5,217. The average lowest per patient total cost has been Tk.2,268 as found in a relatively small private hospital (20 beds) in the Dhaka city. Staff cost and cabin/bed charges each account for 30% of the total cost followed by cost of medicine and cost of diet which are 13% and 12% respectively. The highest per patient cost in private hospitals has been found for the treatment of burn which is Tk.15,577, of course with variation among the hospitals treating burn patients. On an average, in a private hospital, the total monthly expenditure for outside consultants (retainers come on call) has been Tk 209,306. On average, each patient incurs around Tk 580 (66% of total staff cost) for being diagnosed by an outside consultant. A private hospital on average undertakes 72 operations/ surgery in a typical month on which the hospital/ clinic earns an average of Tk.8,32,728.

The research on patient borne cost and satisfaction was done with exit interview of 297 patients. In private clinics, the minimum time delay in attending patients is 12 minutes, which in case of public hospitals, is 14 minutes. On an average, doctors in the private hospitals visit indoor patients at least 2–3 times a day; while in the public hospitals, doctors' visit generally does not exceed more than one per day. A doctor in a private hospitals for the first examination of a patient spends 13 minutes on an average, whereas in the public hospitals, a doctor spends only 5 minutes for a outdoor-patient and nearly 12 minutes for an indoor-patients. It was found that, on an average, the patients (indoor) surveyed in the private hospitals stayed for less than 5 days with complaints such as injury, ulcer, pneumonia and pregnancy. On the other hand, patients in the public hospitals suffering from the same problems/ diseases stayed for over 10 days.

On the question of the degree of cure, nearly 65% of the private hospital patients responded positively, while 53% of the public hospital indoor patients responded likewise.

In District Public Hospitals, the ulcer patients have to incur the highest average total cost. Bulk of this cost (94%) is related to medicine and MSR. The remaining cost is mainly due to investigation charges. Pregnancy related problem is the second highest expensive problem for the in-patients of public hospitals. For all diseases, Medicine and MSR are the main cost items for the patients.

In general, the private hospitals are more expensive. Cabin cost and operation costs in addition to medicine and MSR cost constitute a significant share of the total cost incurred by patients in private hospitals. As to determining the quality and satisfaction levels. 89% of the private hospital respondents claimed that the doctors were always available, while 54% of the indoor patients of public hospitals responded likewise. Regarding the availability of doctors, 98% of the private hospital respondents said that the doctors were always available, while 86% of the indoor patients of public hospitals responded likewise. The unavailability of the medicine has been the prime reason for dissatisfaction of the patients in the District Public Hospitals.

The study report cannot provide definitive answer to every question about District Hospital performance. It does though bring together the best available evidence to date. It demonstrates that, despite the complexity of the topic and the limitations of the data, it is possible to get a reasonable approximation of the current situation, in a way that provides an exciting agenda for future work. Therefore, the report will contribute to work on how to assess and improve secondary level health facilities. Performance assessment also will allow policy-makers, health service providers and the population at large to see themselves in terms of the social arrangements they have constructed to improve health. It invites reflection on the factors that shape performance and the actions that can improve it.

As the study covers the private health care providing facilities at the district level, the findings derive important implication regarding their performance. And therefore in order to developing responsible and careful private health care services the urgent imperative constitutes sound regulation and oversight of private sector providers and this must be placed high on national policy agendas for health care service of the country. At the same time it is crucial to adopt incentives that are sensitive to performance. Good policy needs to differentiate between providers (public or private) who are contributing to health goals, and those who are doing damage, and encourage or sanction appropriately.

SECTION 1

1. INTRODUCTION AND BACKGROUND

The Government of Bangladesh is mainly responsible for providing health care to all and a substantial volume of public fund is utilised for the functioning of the Government health system. 'Primary health care' has been undertaken as the key to achieving the national goal of 'Health for All'. A five-year Health and Population Sector Programme (HPSP) was launched in 1998 with a commitment to reform the health care services. In the HPSP, a one-stop service model, namely, Essential Services Packages (ESP), has been adopted as the core of the primary health care provision.

The country-wide health service delivery system of Bangladesh comprises three major tiers, viz: the Upazila and below structure (primary health care services); the District level structure (secondary nature health care services); and National level structure (tertiary and specialized nature health care services). Each of the tiers has a large geographical area and population to serve. The location attribute of a District Public Hospital reposes on it a critical role of providing appropriate degree of comprehensive services as well as referral system and supervision of the delivery of primary health care services under its administrative jurisdiction. Therefore, the function and performance of the District-level hospitals must have to achieve the required standard and efficiency.

From a public finance point of view, the District Public Hospitals' service provision claims a large portion of total public funding of health care in Bangladesh. This tier also absorbs a significant level of funding from out of packet payments both official and unofficial. District Public Hospitals also are to contribute to the provision of ESP services particularly in urban areas. But the performance and efficiency of the District Hospitals are short of the desired level. While HPSP recently has brought these issues at the forefront of reform agenda, the actual institutional change will depend on designing and implementation of an efficient, framework using field data and information. But, there exists very little or no benchmark data and analysis to support the policy makers to make necessary forecast and budgetary allocation – a first and foremost step towards efficient management at the health systems including District Hospitals. There are practical problems however, such as, in the present operational and organizational setting, identification of service profile, number of patients and meaningful cost centres seem to be difficult. As such the results historical efforts to improve the performance of District Hospitals could not be analytically articulated to be used for further improvement.

Several dispersed studies were commissioned to cost and study efficiency of hospital facilities. In 1998, the Health Economics Unit in collaboration with the Institute of Policy Studies, Colombo undertook a facility efficiency survey which computed unit costs for in and outpatient of thana, District and medical college level facility (Rannan-Eliya and Somanathan, 1999). Also recently the Institute of Health Economics carried out an intensive costing study of two District Hospitals which revealed a number of problems related to identifying clear service cost centres for dis-aggregation of case complexity. This study suggested that dis-aggregation would require establishing cost centres

according to disease group rather than ward and carrying out a work pattern analysis of staff time.

As mentioned above, the HPSP implements reform for mordernization, improvement, efficiency, and accountability of the national health system where the immediate imperatives are target-based allocation/reallocation of resource, and application of performance criteria. In view of this, the Health Economics Unit, Policy and Research Unit of the Ministry of Health and Family Welfare (MOHFW) undertook this research study to generate data and analysis mainly pertaining to secondary level hospital services and costs. So, the study purports to provide information on the full-costs of services both by outpatient and inpatient and also by the main categories of patients within each of these departments of a representative sample of District Hospitals and a sub-sample of private level facilities. The result of this study will mainly be used, among others, for helping to

- set user charges
- efficient management of facilities.

The Institute for Economic and Private Sector Development (IEPSD) has conducted the study for the Health Economics Unit (HEU). IEPSD carried out a similar study for HEU "Costing the Essential Services Package (ESP) at Upazila and Below". An experienced team of experts led by Professor Shawkat Ali Ferdousi conducted this District hospital study.

It is expected this report will break new ground in the way that it helps understand the current operational efficiency of District level hospitals – public and private. In order to take prudent action to act on measures of performance, need is a clear understanding of the service profile that District Hospital provide and trend of patients as well as cost structure. This report informs key areas like providing services; synergy of the human and physical resources that make service delivery possible; and overall efficiency.

SECTION 2

2. OBJECTIVE AND SCOPE OF THE STUDY

2.1 Objective

In recent years modernization of health care provision has been greatly emphasized. This imputed pressure on health sector reform, analysis of efficiency of health sector financing and an urge to reallocate hospital services to improve the overall health care provision. In this backdrop, this study has been undertaken and the broad objective of the study, as stipulated in the ToR, is to develop a broad understanding of:

- the types of services provided by the hospital, including the services mix divided up according to International Classification of Diseases (ICD) as adopted by MOHFW;
- total cost of inpatient and outpatient services;
- estimation of cost by major clinical groups based on ICD grouping within inpatient and outpatient departments.

2.1 Scope

To date, measurement of hospital performance has been hampered by the weakness of routine information systems and insufficient attention to research. The study has thus required a major effort to assemble data, collect new information, and carry out the required analysis and synthesis. It has also drawn on the views of patients of district hospitals. The scope of the study encompassed a representative sample of District level public hospitals, and a sub-sample of private hospitals/facilities offering services similar to District Hospitals. While the focus was to investigate into major service profiles and respective costs of District Hospitals.

The major tasks of the study, as per the ToR, included:

i. To identify a representative sample of District Hospitals;
ii. To identify six private hospitals offering services similar to those provided at District level;
iii. To obtain a detailed service profile of the District Hospitals;
iv. To estimate the size and nature of ESP service provision at the District level;
v. To obtain information on line expenditures from both revenue and development budget allocations divided up into the following categories:
    - Land
    - Building
    - Equipment, and machinery and other capital items
    - Vehicles
    - Furniture and fixtures

- Personnel
- Drugs supplies (covering all the different kinds of drugs and EPI vaccine)
- Other non-drugs medical supplies
- Maintenance and operation

vi. Appropriate estimation of the annualised value of buildings and equipment;
vii. Designing a simple but appropriate step down methodology for cost analysis and to apportion all overheads;
viii. Allocation of costs to categories of patients based on ICD categorisation;
ix. To obtain direct patient born costs, divided up into the main disease categories, from a patient survey. Also to gather other socio-economic and demographic information; and
x. Holding a seminar/workshop on the methodology, main findings and policy relevant of the work;

In order to address the whole gamut of the tasks, the consultant adopted a sound approach of—

i. Systematic random sampling of the study universe of public and private District Hospitals;

ii. Identification of data and information need which can be clustered as -

- service profile of District Hospitals and relevant classifications
- service delivery and corresponding number of patients
- cost centre identification and basis of apportionment/ allocation
- total costs: government and patients borne costs
- ESP services and their costs;

iii. Collection of data and information through survey of District level sample public and private hospitals using predesigned and field tested instruments;

iv. Analysis of data to determine the performance in respect delivery of services and costing of those services as well as cost efficiency;

v. Formulation of policy implications of the findings (from the analysis); and

vi. Underpinning the results and policy implications and their 'generalization' through holding a workshop.

SECTION 3

3. METHODOLOGY

3.1 Sample Determination and Selection

As this has been an operation research on actual service delivery and its cost efficiency, the methodology was characterised by real life appreciation and practical imperatives. Efforts were made to ensure that information and data collection was precise and comprehensive as far as possible.

Inputs from the literature review/ desk research have been used to define sample and framework of data collection.

Sampling has been done in a very practical manner taking all relevant dimensions into account in order to derive a well representative and meaningful results in terms of hospital service profile, patients costs and so on.

All the six Divisions have been covered in the selection of District Hospitals. Private hospitals have been taken for the study as sub-samples.

A stratified random sampling procedure was followed to select the ultimate survey units of District Hospitals (DHs). Taking the six (6) Divisions as the base of categorization, six(6) District Hospitals were selected from 6 Divisions; and 6 private hospitals offering services as far as similar to District Public Hospitals have also been selected.

The above mentioned sample hospitals were selected on the basis of the following criteria:

- size of hospital;
- general disease profile of the District;
- provision of service facilities;
- physical location;
- utilization of services;
- population; and
- average income level.

Finally, the sample of public and private hospitals as selected for the study include the following:

i. ***Public/ Government Hospital***

Division	Sample District Hospital
Dhaka	Gazipur District Hospital
Chittagong	Comilla District Hospital
Rajshahi	Sirajganj District Hospital

Khulna	Jessore District Hospital
Barisal	Patuakhali District Hospital
Sylhet	Moulvibazar District Hospital

ii. ***Private Hospital/ Clinic***

Division	Sample Hospital/ Clinic
Dhaka	Samrita Hospital
Dhaka	Royal Hospital Private Ltd.
Chittagong	Comilla Medical Centre (Pvt.) Ltd.
Rajshahi	Mukti Clinic (Pvt.) Ltd.
Khulna	Khulna Orthopaedic Hospital
Barisal	Patuakhali Clinic

3.2 Services/ Diseases Identified for the Study

Based on the outcome of the review of literature including publication on District Hospital services and through the analysis of services under ICD 9, a list of services in terms of diseases being treated was prepared for the study. The list covered all important services being provided by District Hospitals and these include the following:

a) Department: Medicine
Diarrhoeal diseases
Intestinal worm infestation
Skin diseases
Peptic Ulcer
Acute Respiratory Infection
Pneumonia
Anaemia
Deficiency diseases
PUO
Hypertension
Asthma
Clinical Malaria
Hepatitis
Diabetes
Measles
Tuberculosis
Poisoning
Mental diseases
Rheumatic disorders
Venereal diseases
IHD

b) Department: Surgery/Orthopedics
Injury
Peptic ulcer (Gastro jejonostomy)

d) Department: Eye
Conjunctivitis
Corneal ulcer
Night blindness
Cataract
Injury of Eye and adnexa
Glucoma
Refraction error

e) Department: ENT
Acute otitis media
CSOM
Foreigh body in the ear
Tonsilitis
Nasal Polyp
Nasal septal deviation
Mastiditis
Injuries

f) Department: Paediatrics
Diarrhoeal diseases
ARI/ Pneumonia
Skin diseases
Intestinal infection
Measles
Asthma

Cholisystectomy
Appendicectomy
Burn
Fractures, Dislocation
Urethral Stricture

c) Department: Gynae and obstetrics

Antenatal care
Normal delivery
Caeserian Section
Forceps delivery or other assisted delivery
Abortion (DE&C))
MR
Prolapse
VVF
Ovarian Tumor
PID
RTI-Moniliasis, Clamydial Infection etc
Cervical cancer
STDs-Syphilis, Gonorrhoea etc

Neonatal tetanus
Chicken pox
Accidental poisoning
Malnutrition (PEM)
Anaemia

3.3 Application of International Classification of Disease (ICD)

In light of the ICD-9, the services of District Hospitals have been aggregated into major 42 groups. Therefore, the 42 groups cover the entire range of services of District hospitals that matches the disaggregated list of ICD-9. As it has been found that all the ICD-9 are not treated in the District hospitals of Bangladesh, Consultant first collected the information following the way District Hospitals use the names of the diseases, which in many cases are different from the names used in the ICD-9, and than reconciled them with the ICD-9 names/ terms and codes. The ICD adjusted 42 disease groups so identified in respect of District hospital services and their respective ICD codes are given below:

SL	ICD code range		Disease
1	001	009	Intestinal Infectious Diseases (Diarrhoeal diseases)
2	121	127	Intestinal Worm Infestation
3	680	709	Diseases of Skin and Subcutaneous Tissue
4	531	533	Ulcer of Stomach and Duodenum
5	460	465	Acute Respiratory Infection
6	480	486	Pneumonia
7	280	285	Anaemia's
8	260	269	Nutritional Deficiencies
9	781	781	Pyrexia of Unknown Origin (PUO)
10	401	405	Hypertensive Disease
11	490	493	Asthma (Bronchiectasis, Chronic and Unspecified, Emphysema and Asthma)
12	084	084	Malaria
13	070	070	Viral Hepatitis
14	250	250	Diabetes Mellitus
15	055	055	Measles
16	010	018	Tuberculosis
17	960	989	Poisonings and Toxic Effects

SL	ICD code range		Disease
18	290	319	Mental Disorders
19	714	714	Rheumatic disorders
20	090	099	Venereal Diseases
21	410	414	Ischamic Heart Diesease (IHD)
22	210	229	Neoplasm
23	E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)
24	574	575	Cholelithisis and Cholecystitis
25	540	543	Appendicectomy (Appendicitis)
26	940	949	Burns
27	800	848	Fractures, Dislocation
28	600	600	Hyperplasis of Prostate/Hydrocele
29	603	603	Hernia
30	038	038	(Septicaemia) Abscers
31	580	599	Disease of Urinary System
32	430	438	Cerebrovascular Disease
33	710	739	Disease of the Musculoskeletal System & Connective Tissue
34			Antenatal care
35	650	650	Normal delivery
36	651	655	Caeserian Section
37	630	639	Abortion (DE&C))/MR
38	630	676	Direct/Indirect Obsteteric Cause
39	360	379	Disorder of the Eye & Adnexa
40	380	389	Diseases of the Ear and Mastoid Process (ENT)
41	320	359	Dieseas of Nurvous System (Menengitis)
42	520	529	Disease of Oral Cavity, Salivary Glands & Jaws

3.4 Selection of Service Providers for the Study

Selection of staff was made very carefully so that a comprehensive picture of staff time utilization in the services of District Hospitals could be captured. In making the selection the following principles were applied:

- all medical and important technical staff were included for interview;
- all nurses were included;
- other staff like Ward boy, Aya, Sweeper etc. who are directly involved in patient services were taken on a representative basis; and
- the administrative staff time has been apportioned as per the number of patients in general.

While usually interview of 50% staff is sufficient to calculate staff-time utilization and corresponding costs, here more than 70% staff were covered.

The staff as identified applying the above principles included:

1. Superintendent/ Civil Surgeon
2. Clinical Services (Hospital services, Clinical Contraception & Disease Control).

i. Sr./Jr. Consultant (Medicine)
ii. Sr/Jr. Consultant (Surgery)
iii. Sr/Jr. Consultant (Gynae&Obst)
iv. Sr/Jr. Consultant (ENT)
v. Sr/Jr. Consultant (Eye)
vi. Sr/Jr. Consultant (Anaesthesist)
vii. Sr/Jr. Consultant (Radiologist)
viii. Sr/Jr. Consultant (Pathologist)
ix. Sr/Jr. Consultant (Pediatrics)
x. Sr/Jr. Consultant (Dental)
xi. RMO
xii. Medical Officer
xiii. MO (Blood Bank)
xiv. EMO
xv. Health Educator
xvi. Social Welfare Officer
xvii. Jr. Metron
xviii. Nursing Supervisor
xix. Sr. Staff Nurse
xx. Asstt. Nurse Med. Tech. (Lab)
xxi. Med. Tech. (Radio)
xxii. Med. Tech. (Pharmacy)
xxiii. Med. Tech. (Blood Bank)
xxiv. Ward Master
xxv. Stretcher-bearer
xxvi. Ward Boy
xxvii. Aya
xxviii. Sweeper

3. Support Services

i. Superintendent
ii. Cashier
iii. Head Asstt-cum-Accountant
iv. Store Keeper
v. Office Asstt-cum-Typist
vi. Driver
vii. Record keeper
viii. Jr. Mechanic
ix. Security Guard
x. Cook/ Moshalchi
xi. MLSS
xii. Mali

3.5 Data Collection Method and Instruments

Hospital survey was carried out in the six sample Districts.

Important methods used in the hospital survey included:

i. examination of log book/ register;
ii. collection of abstracts of log book;
iii. interview of service providers;
iv. informed/ direct observation;
v. uniformed/ secret observation; and
vi. exit interview.

Thirteen (13) different data collection instruments were designed to collect disaggregated data and information in a precise but comprehensive manner.

All draft instruments were finalised on the basis of the outcome of a pre-test and literature review. Pre-test was carried out in one(1) District Hospital. The application of specific instruments was guided by the data requirement and nature of analysis for the study.

The overall major type of 'information need' as identified in the instruments include:

i. Socio-demographic facts of the District;
ii. General information/ feature of the hospital;
iii. Organization structure of the District Hospital;

iv. Details of hospital services–

- department-wise services being provided
- yearly number of patients treated/ served over the last 3 years
- copies of patient record/ register for the last 3 years
- disease-wise monthly number of patients treated/ served during May to July period of 2001 year;

v. Disease-wise staff utilization in service delivery: monthly number of patient handled/ served and time given to;

vi. Manpower classification, pay-scale, position status and pay roll;

vii. Use of consumables (MSR)–

- copies of yearly (2000-01) record of receipts and local purchase of drug and non-drug supplies (all type including vaccines) along with procurement prices
- ward/patient/disease-wise use of consumables (MSR) in 3 months (May-July 2001);

viii. Use of equipment, logistics and vehicles–

- total list (schedule) of equipment, logistics and vehicles along with procurement dates, prices, useful life and maintenance cost
- ward/ patient/ disease-wise use of equipment in 3 months (May-July 2001);

ix. Use of furniture and fixture–

- total list of the department and ward-wise furniture and fixture along with procurement dates, prices, useful life and maintenance cost;

x. Use of physical structure–

- details of physical structure with original construction dates and costs;

xi. Overhead expenditure;

xii. Information on line-expenditure; and

xiii. General questionnaire for service provider–

- staff members
- equipment and logistics
- drug availability
- hygiene and cleanliness
- drug prescription pattern
- efficiency
- cost recovery/ user fee.

3.6 Exit patient/ client interview

Apart from Government's expenditure for the services of secondary level hospitals, often patients themselves also share costs to *supplement* the total cost. These costs are incurred mainly for medicine purchase, investigation and some other items. Our interviewing of the patients took into account this important aspect. An analysis was done to estimate the average costs incurred by patients in each of the categories of diseases.

A detailed instrument was administered for interviewing the patients. Approximately 5% of both inpatient and outpatient spread over 3 days were covered in the patient interview. Rather than following a random sampling a stratified sampling was followed to ensure representation of various groups. Area covered includes various aspects of service provision, hygiene and cleanness, residence, distance, demographic profile, literacy, income level, awareness, and most importantly *cost incurred on health care* (official and unofficial payments disaggregated by type of payments). So, the major aspects of the exit interview were–

- health service received;
- quality assessment;
- amount of official cost shared;
- amount of unofficial cost shared;
- willingness and ability to share cost; and
- patient satisfaction level.

3.7 Conducting the Field Survey

As can be appreciated that the crucial part of the research study was the 'field survey' which was aimed to obtain actual information of service profile, number of patients served and their classifications and costs of services. Staff time utilisation by different staff members for each category of patients, usage of supplies, consumables, equipment and other resources in the facilities that were taken under review also comprised the range of data collection. The ToR emphasises that the field investigation should cover representative numbers of District Hospitals, and as a sub-sample, hospitals/clinics run by private sponsors offering similar services to the District Hospitals. The main focus/concentration however has to be on District Public Hospitals because of their size, location and importance in the health care system of the country.

The outcome, usefulness and significance of the research study depend on how precisely and accurately the pertinent information were obtained. Consultant using innovative and effective methods and instruments accomplished the field survey. All care was taken so that the broadness and depth of the investigation in terms of all services of the District Hospitals (and private hospitals as sub-sample) and staff time allocation/ utilisation were maintained.

Inputs from the literature review/ desk research as described in the preceding sub-section was used to initially define the activities of the different District Hospitals, benchmark cost, particularly staff assignment, budget allocation and operational procedure.

SECTION 4

4. FRAMEWORK FOR COSTING AND ANALYSIS

4.1 Overall

Data analysis is an important part of any study. A number of interactive templates/ formats have been developed to analyse data and information in a systematic and meaningful manner. The main framework of data analysis has been based on the dimension, tasks and imperatives as suggested in the scope of the study.

The overall analytical framework consists of—

- *making profile analysis of services according to ICD-9;*
- *disaggregation of number of patients according to ICD-9 in-terms of in-patients and out-patient, and further classification within those major category;*
- *determination of cost centres as per service and disease profile;*
- *estimation of cost by elements/ inputs, viz: staff time, MSR, use of equipment and structure, management and administrative overhead;*
- *analysis of patient borne cost (official and unofficial);*
- *calculation of total costs;*
- *variation analysis; and*
- *processing of all other pertinent information to generate recommendations, and policy implications.*

In the above background, two major analyses will be in term of—

(i) service profile
(ii) costing and cost estimation.

Data were entered and analysed with a standard spreadsheet application. Analysis included examination of detailed staff work-plan and an allocation of all service costs to the main service categories.

4.2 Top-down and Bottom-up Approach – A Combination to Proceed

From procedural viewpoint, there exist three types of costing methodologies – top-down, bottom-up and a combination of both. Top-down costs, as the name implies, are usually obtained by using aggregate expenditure or budgets, and apportion or allocating them by levels and/or activities using the appropriate allocation factors as basis. Bottom-up costs, on the other hand, are derived by calculating the individual unit cost of an activity at the lowest level where the costs are incurred and then aggregate them.

Taking the instances of the facilities' (i.e., District Hospitals) cost components, bottom up method is relatively more capable of accurately capturing the staff time attributable to patients of each category, or usage of medical supply attributable to each category of patients and overhead cost at the facility. Use of bottom up approach to cost overhead items such as maintenance, utilities is expensive and generates insufficient additional information to be of a significant utility. Therefore, for staff salary and overhead, top-down method is more appropriate.

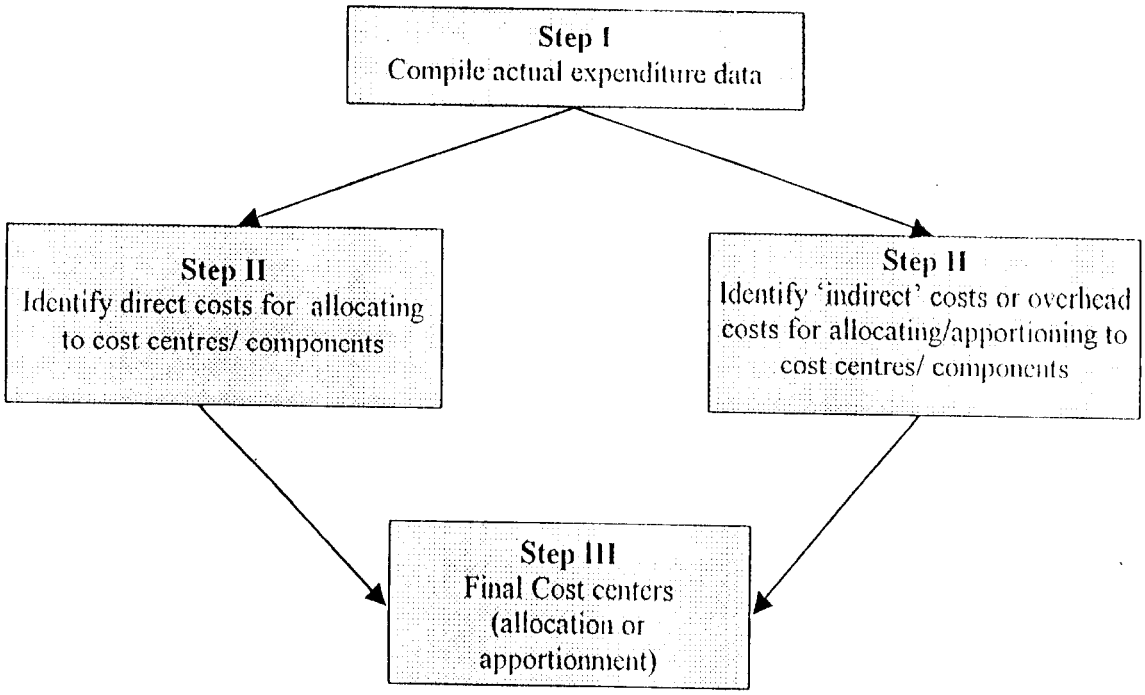
The bottom-up part of the analysis was based on the detailed record of commodity and consumables and medical supplies used during a particular period of time for each of the categories of patients served. Although many of the supplies are disease specific but some of the supplies have joint use in categories of District Hospitals. Utilisation of staff time was obtained through a complete bottom up approach.

Overall, the combination of top-down salary (not the time Utilization) and central overhead and maintenance cost and bottom-up commodity costs and other operating cost is an understandable way to proceed. However, one potential problem of this approach is that, it assumes that the existing levels of staff, skill mix and working routines will be adequate to utilize the commodities and equipment in a way that delivers the planned level of services. In effect, the production function – which calculates how a given resource input combination can be converted into outputs using existing technologies – is operating at close to optimal level. Details of these are discussed later. In this regard, the detailed work pattern analysis provided a useful insight of the way staff use their time at these facilities.

Again, costing under each of the above approaches can be performed through **expenditure allocation** method and **full cost accounting** (economic cost) method. These two methods are distinctly different from each other. Expenditure allocations usually use actual past, or current expenditure, or future budgets as the basis of allocation of costs to services. Therefore, in case of a narrower view, expenditure allocation may pose problem. For instance, recorded expenditure may not encompass all the expenses incurred, rather captures only the payments made. This means if a payment, perhaps monthly salaries or a bill for utilities, is delayed until the next financial year then it is not recorded. Consequently expenditure may be understated. Reverse situation may arise if payments for previous year's debts are made in this year, which may overstate the expenses. Full cost accounting must include these unpaid debts (called accrued expenses) and adjust payments of last years' debts. Adequate allowance must also be made for amortisation of equipment and building costs. In costing a District Hospital services, all the possible accounting costs attributable to service delivery were taken into consideration.

As considered ideal for costing medical facilities and as being reiterated in the ToR, simple **'step-down'** procedure was applied for costing. The following figure depicts the flow of the procedure.

Figure 4.1: Step-down Costing Process



Through the survey of the sample hospitals costs attributable to different components were accumulated. These cost elements were supplemented by secondary data from other Government agencies, and also limited market survey as well as consulting relevant persons wherever deemed necessary.

4.3 Categorization of Patients

Average monthly patients in the sample District Hospitals have been calculated by averaging patients served over three months period (May - July 2001). As the ToR envisage the total patients served have been categorized according to ICD (International Classification of Diseases) as already adopted by MOHFW but yet to be implemented in the management of hospitals services. ICD (International Classification of Diseases), as the name implies, is an internationally accepted and used classification of diseases formulated by WHO. In ICD, a total of 56 disease categories are identified. These disease categories are then classified in a number of sub-groups. Finally, most of the subgroups are further detailed in more precise categories. In addition, other treatments such as accidents, poisoning, adverse effect of drugs, suicide, homicide etc. are also included in the list. It is important and useful to follow the standard that is used worldwide.

As the same time, the number of categorization has been kept within a practical range to make the presentation meaningful. Although all the respective principal nomenclature of ICD was taken for categorizing the patients, for sub-nomenclature, selections were made depending on the number of patients and other incidence. For instance, although Malaria is only a sub-group of Rickettsiosis and Other Arthropod Borne Diseases, here the sub-nomenclature 'Malaria' has been used because of its importance and incidence. Other treatments, such as, Injury, Poisoning etc. have also been considered only depending on their incidence. Overall, the substantial percentage of diseases have been found to be concentrated rather to a relatively fewer categories. In this study, the categorization of

diseases as treaded by District Hospitals has been done with the required extensiveness by considering the incidence, the number of patients and the degree of complexity.

4.4 Costing Framework

Cost of health care services provided by a District Hospital implies the amount of expenditure (actual or notional) incurred on, or attributable to such health care provision. Previous studies/costing exercises (e.g., Ranna-Eliya and Somanathan, 1999, IHE study) suggested that costing on 'ward basis' was not useful since wards are usually flexible. Also the ToR stress that patients should be grouped into small numbers of categories based on ICD categorisation, and cost of major elements should be accumulated and allocated / apportioned to patients on the basis of their direct attribution. Accordingly, costs were accumulated based on the factors upon which the expenditures were incurred. However, enough flexibility was ensured so that the costing of the facilities can also be done on the basis of wards, if such need be arisen. Cost of health care services of District hospitals consists of a number of elements upon which the expenditures have been incurred; and these are:

- Staff Cost
- Cost of MSR
- Cost of Usage of Equipment
- Cost of Furniture and Fixture
- Upkeep and Maintenance Cost of Structure
- Overhead Cost at the Facility level
- Super overhead Cost or Overhead Cost incurred at the Central Level

Following the premise of step-down costing, these factor costs were therefore allocated to each category of patient according to their attribution. In case of joint costs, these costs were apportioned to the patients considering practical norms.

4.5 Basis applied in Cost Accumulation

Bases applied to accumulate cost of different cost factors are described below:

i. Staff time

Staff time occupies a substantial portion of cost associated with the delivery of health care services from the perspective of efficiency and it is a very important component. Details of staff time utilisation for each of the categories of patients were collected and analysed in an in-depth way. Staff costs were calculated on actual basis taking into account the actual staff salary paid in a month. While staff salary paid was taken as a top-down approach, time utilisation by different staff members for each of the categories of patients was calculated following a complete bottom-up approach. Staff time spent was determined by direct interviews with the providers (provider interview approach) which were re-confirmed/ counter-checked by observing how service providers spend their time (time-motion method). These were supplemented by exit patient interview for further understanding and to ensure proper representation. As many as thirty categories of staff members as involved in providing health care services were interviewed to determine the time spent by them to each category of patients. Appropriate basis like division among the patients of a particular period was applied to allocate time of staff members who are not

directly involved in providing services. For instance, 20% of time spent by Superintendent/ Civil Surgeon and other Administrative staff were allocated to number of outpatients of each category of diseases, while 80% of their utilized time were allocated to inpatients following the same basis. Support staff members are divided into two sub-categories. Time spent by one sub-category of support staff members are directly attributable to the patient services and so the actual time spent for each classes of patients was inputed to costing. Time of second category of support staff members who are not directly involved in providing services to patients but as their time is attributable to the services of inpatients, such time was to the number of inpatients according each of the ICD categories. Although the actual staff time spent for each category of patient was considered, in some instances, actual time spent by a staff could not be obtained due to his/her absence and in only a one or two cases due to the staff member's unwillingness to cooperate. In those circumstances, usage of such time was imputed using the relevant type of observation done in other facilities and also the experience of the medical expert belonging to the team of consultants. However, such imputation did not exceed 1 percent of the total timing.

ii. Cost of MSR

Cost of MSR used was calculated with actual quantity of MSR being used to serve the patients in different categories multiplied by the unit cost of the MSR item. For an accurate allocation from different departments, detailed information were collected for each of the items being used for different categories of patients. Unit costs of those MSR that had been collected from the facilities were re-confirmed where necessary by doing a limited market survey as well as consulting the budget. Next to staff time utilisation MSR cost is one of the elements that warrants close attention so as to ensure efficient utilisation. For MSR, a bottom-up approach was used for higher degree of accuracy.

iii. Usage cost of Equipment

Cost of equipment implies the depreciation cost of equipment being used for providing the health care services plus operating and maintenance cost incurred thereon. Operating and maintenance costs were taken on the basis of actual amount expended. Where necessary projections and extrapolations were done to ensure that proper cost has been reflected. For depreciation, historical cost of equipment was worked out using market survey, consulting budget, or extrapolation especially where information were inadequate. This was a combination of top-down and bottom-up approach. Depreciation of equipment was calculated using straight-line method as under:

$$\text{Depreciation per year} = \frac{\text{Cost of Capital Asset} - \text{Salvage Value (if any)}}{\text{Useful Life of the Asset}}$$

In the calculation, salvage value has been assumed to be zero.

iv. Usage cost of Furniture & Fixtures

Cost of Furniture and Fixtures implies the depreciation cost of furniture and fixture being used for providing the health care services and any operating and maintenance cost incurred thereon. In calculating this cost, the basis was the one as has been used to cost the usage of equipment.

v. Maintenance Cost

Upkeep and maintenance budget of District Hospitals are not uniform as these are made rather arbitrarily and a substantial portion of maintenance of infrastructure is done by PWD. Given that this is a full cost estimation, the Program Implementation Plan (PIP) of HPSP was consulted for taking estimated cost of maintenance of structure. This document stresses (page 370) the importance of periodic maintenance at least once in every 2 to 3 years to keep these facilities up to the mark for providing quality health care services. Acknowledging the difficulties of estimating actual maintenance costs of structures, the document concludes that 2.5% of current plinth area construction cost (subject to cost escalation) should be allocated as yearly maintenance cost. Accordingly, allocations were made in the HPSP. Presently PWD plinth area construction cost per square feet is Tk 800. Taking this as the basis, per square feet maintenance cost of structure comes to Tk 20 per year. With this rate and based on the plinth area of the particular facilities the annual maintenance cost of the District Hospitals has been estimated. Maintenance cost of structure has been allocated to the diseases on the basis of the numbers of patients in each category of diseases.

vi. Overhead Cost

Overhead cost represents the electricity, gas, water, diet, telephone, stationary, postage etc. These costs were taken on actual basis. Costs that usually incurred once or twice a year were also allocated to this head.

vii. Super Overhead Cost

Super overhead cost implies the cost incurred in District, Divisional and Central offices for the support extended to District Hospitals. It is difficult to pinpoint exactly how much support has been extended to District Hospitals. Assuming that the policy and coordiantional support are evenly extended to all HPSP components, the percentage of allocation to District Hospitals to the total cost of HPSP has been taken as the basis of allocation of super overhead cost to District Hospitals.

SECTION 5

5. ANALYSIS OF DISTRICT PUBLIC HOSPITAL SERVICES AND COSTS

As discussed briefly earlier that the public sector health care services are delivered through the mechanism of—

i. Upazila Health Complexes (UHC) [and below, i.e., UHFWC and CC];
ii. District Hospitals;
iii. Medical College Hospitals; and
iv. Specialized Hospitals.

Upazila Health Complexes (UHC) and below level facilities are officially regarded as the providers of primary health care services while District Hospitals as the secondary level health care services providing facilities. However, in reality, District Public Hospitals, to a significant extent, offer basic services and to that extent District Public Hospital differ from Upazila Health Complexes (UHCs) only in terms of their sizes, staffing norms, number of specialists, and of course, relatively higher levels of equipment such as X-Ray, pathology facilities and in some cases ECG facility. Medical College Hospitals (MCHs) and Specialized Hospitals (SHs), on the other hand, offer more advanced and specialised services.

5.1 Socio-Economic Profile of Sample Districts

Table-5.1 gives an overview of the socio-economic profile of the sample districts of the study. The average population of the sample districts is 2,393,493, where Comilla district has the highest population of around 46 lacs while Moulvibazar district has the lowest population of around 14 lacs. Male female ratio is very evenly distributed across the districts.

Table-5.1: Socio-Economic Profile of the Sample Districts

	Name of the Hospital						Sample
	Comilla	Gazipur	Moulvibazar	Sirajganj	Jessore	Patuakhali	Average
Population	4,586,879	1,784,870	1,376,566	2,659,427	2,408,162	1,544,727	2,393,43
Male	2,265,306	917,828	702,538	1,355,398	1,214,367	792,033	1,207,91
Female	2,321,573	867,042	674,028	1,304,029	1,193,795	752,694	1,185,52
Male	49%	51%	51%	51%	50%	51%	51
Female	51%	49%	49%	49%	50%	49%	49
Major economic activity							
Agriculture	27%	21%	27%	20%	30%	52%	30
Trade & business	25%	28%	16%	40%	18%	16%	24
Fisheries & livestock	6%	8%	6%	5%	9%	7%	7
Services	20%	21%	18%	15%	17%	4%	16
Others	22%	22%	33%	20%	26%	22%	24
Education/ literacy	**50%**	**100%**	**31%**	**100%**	**39%**	**37%**	**37**
Health facility							
Government	15	7	8	13	3	7	
Private	15		2	6	7	3	
NGO	2	11	6	14	2	6	

The major economic activities of the districts were analysed. Patuakhali has the highest agricultural activities accounting for 52% of the total economic activities, while Gazipur has the lowest (21%) but it has the second highest percentage of trade and business (28%), perhaps because of the close proximity to the capital. Sirajganj represents the highest percentage (40%) in trade and business as it is the doorway to north Bengal. Overall, the percentage of fisheries and livestock as economic activities is quite lower in all the districts. The highest percentage of people engaged in services is in Gazipur, obviously because of the close proximity of the capital.

As far as literacy rate is concerned, Gazipur and Sirajganj have 100% literacy rate. Moulvibazar, Jessore and Patuakhali have literacy rate around the prevailing national rate. Comilla is somewhat higher compared to those three districts.

Regarding availability of health service providing facilities in the sample districts, Comilla possesses the highest number of government facilities. The second highest government health facilities possessing district is Sirajganj which also has the second highest population among the sample selected districts. Comilla has also the highest number of private health care facilities, while Sirajganj has the highest number of health care facilities run by NGOs.

5.2 General Features of District Public Hospitals

District hospitals, with bed strength ranging from 50 to 250, provide secondary health care services at the district level. However, most of the District Public Hospitals have 100-bed capacity and they are referred to as 100-bed hospitals. Most of the structures of these District Public Hospitals were constructed for health care purposes quite a long time ago back in late British period or early Pakistan time. During that time the future health care needs of the growing population could hardly be foreseen. Consequently, many of these facilities lack desired level of facilities to cater the health care need of the fast growing population and accommodating their rising awareness about health care. However, the Fourth Population & Health Project accommodated enough provision for upgradation of those facilities. Some District Public Hospitals have already been upgraded, remodelled and renovated with financial support from GoB and foreign assistance during Fourth Five Year Plan of GoB.

District Public Hospitals generally provide the following major types of services:

- Obstetric;
- Gynaecological;
- Paediatric;
- Medical;
- Major/Minor Surgical;
- Eye, ENT & Dental; and
- Other Curative Care.

District Public Hospitals offer routine out-patient services for 8 hours a day, six days a week, while being open to emergencies round the clock. Officially in-patients services are 24 hours activities.

All District Public Hospitals have functioning X-Ray Machine and pathology arrangements. More sophisticated equipment or facilities like Cardiac Monitors, ICU facilities are not available in the District Public Hospitals that were taken for this study.

Table-5.2: Some Important Statistics of the Sample District Public Hospitals

	District Hospitals						Average
	Comilla	Gazipur	Moulvibazar	Sirajganj	Jessore	Patuakhali	
Number of Wards	7	4	7	6	7	4	6
Number of Beds	100	50	50	100	100	150	92
Monthly Average Admission	698	476	634	759	665	829	677
Average Stay Period (days)	4.14	4.04	3.80	4.19	4.21	4.31	4.11
Monthly Available Bed-days	3,000	1,500	1,500	3,000	3,000	4,500	2,750
Monthly Bed-days Occupied	2,887	1,923	2,408	3,183	2,798	3,576	2,785
Bed Occupancy Rate	**96%**	**128%**	**161%**	**106%**	**93%**	**79%**	**101%**

Table-5.2 above illustrates some important statistics of the District Public Hospitals that were taken in the study. Three of the 6 District Public Hospitals that were taken for the study have 100 bed capacity while 2 have 50 bed capacity. The rest one, situated in Patuakhali, has 150-bed capacity. Average number of Words in those hospitals is six. Average monthly admission is 677. Average bed occupancy rate is 101%, implying that the beds are fully utilised. Analysis of individual facilities show that the bed occupancy rate varies from a lowest 79% to as high as 161%, which is very unusual. Patuakhali District Hospital which has been upgraded to 150 beds, not long ago, is somewhat under-utilised in terms of bed occupancy. It is important to note here that although Moulvibazar District Hospital is over utilised in terms of bed occupancy, while the flow of inpatients in Patuakhali is 31% higher than that of Moulvibazar's. Comilla, Sirajganj and Jessore on average are fully utilised in terms of bed occupancy and Gazipur is found to be over-utilised in terms of its number of beds.

Table-5.3: Staffing Norms and Ratios of District Public Hospitals

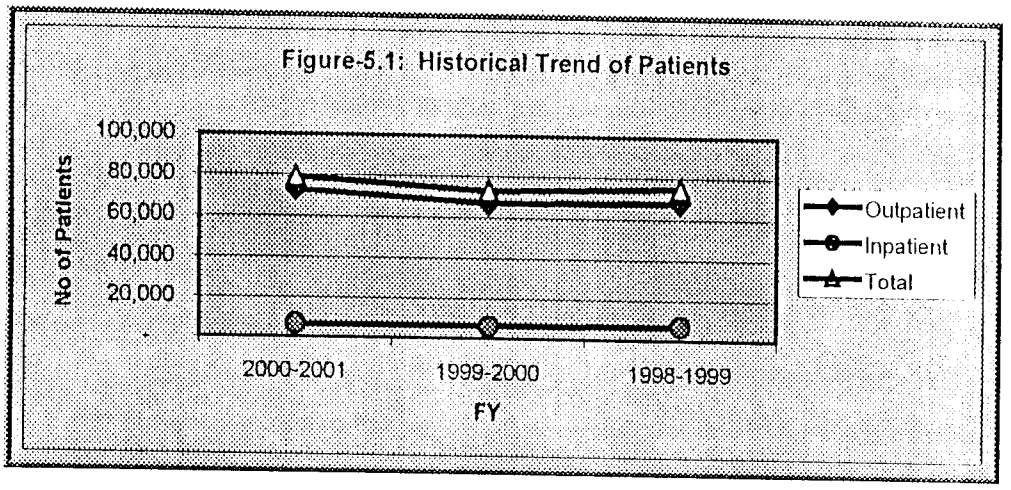
	District Hospitals						Average	Percentage
	Comilla	Gazipur	Moulvibazar	Sirajganj	Jessore	Patuakhali		
Specialist	8	8	8	9	11	11	9	36%
General	16	12	11	12	21	21	16	64%
Total Doctors	**24**	**20**	**19**	**21**	**32**	**32**	**25**	**100%**
Sr. staff nurse	47	21	17	42	47	42	36	86%
Jr./ asstt. Nurse	6	5	5	6	5	6	6	14%
Total Nurses	**53**	**26**	**22**	**48**	**52**	**48**	**42**	**100%**
Class III Staff	67	40	39	65	67	69	58	62%
Class IV Staff	44	18	18	47	44	45	36	38%
Total Class III&IV Staff	**111**	**58**	**57**	**112**	**111**	**114**	**94**	**100%**
Important Ratios								
Specialist-General Doctors Ratio	**0.50**	**0.67**	**0.73**	**0.75**	**0.52**	**0.52**	**0.56**	
Doctors – Nurses Ratio	**0.45**	**0.77**	**0.86**	**0.44**	**0.62**	**0.67**	**0.60**	
Doctors/Nurses - Class III/IV Ratio	**0.69**	**0.79**	**0.72**	**0.62**	**0.76**	**0.70**	**0.71**	

Table-5.3 above illustrates the staffing norms and important staffing ratios of the facilities taken for the study. What can be seen that the average number of doctors in those facilities are 36 of which 25% is specialist making for a specialist-generalist doctor ratio of 0.56. The Doctor/Nurse ratio is 0.60, which implies that 10 nurses are available against 6 doctors. Doctor/Nurse vs Class iii/iv employee ratio is 0.71, which implies that 10 class iii and iv employees are available for 7 doctors and nurses.

5.3 Trend of Patients

Analysis of total patients over a three year period of time has been done. The only source of these figures was the hospital record. Categorisation has been limited only to diseases shown in the profile. Three years data on patients of the six sample District Public Hospitals were collected, compiled and analyzed. The three years spread from 1998-99 to 2000-01.

The average yearly total patients of the sample six District Public Hospitals was 75,383, where the number of outpatients was 69,003 and the number inpatients was 6,380. The main sources of these data were disease profiles of individual sample hospitals. In terms of percentage, the average yearly outpatients during the above mentioned study period accounted for 91.5 percent, and inpatients constituted 8.5 percent. Annex-A provides details of ICD-wise three years (1998-99 – 2000-01) historical trend of patients and services in District Public Hospitals.



As the above graph shows the overall growth of patients was 6%, which is marked by a 7% increase in outpatients and 4% decrease in inpatients. A substantial increase has been registered in outpatient of Diarrhoeal diseases, Asthma and ENT diseases. In case of Diarrhoeal diseases and Asthma, substantial decrease in inpatients has been identified. Increase in inpatients in the Disorder of the Eye and Adnexa signifies peoples awareness about cataract operation and eye related diseases.

5.4 Average Monthly Patients and Trend

Average monthly patients has been calculated by averaging patients served over a three month period (May - July 2001). Patients served were categorised according to ICD (International Classification of Diseases) as adopted by MOHFW. In ICD, a total of 56 disease categories are identified. Most of these disease categories are then disaggregated into a number of sub-groups. Finally, most of the sub-groups are further detailed in more precise sub-categories. In addition, other problems such as injury, poisoning, adverse effect of drugs, suicide, homicide etc. are also included in the list. In categorization of diseases emphasis was given to the numbers of patients and disease incidence. Considering practicality the number of categorization has been kept within manageable limit in order to make the presentation meaningful and so 42 categories of disease/ services and corresponding monthly patients have been identified.

Table-5.4 provides average monthly number of patients in the sample District Public Hospitals. As mentioned earlier, patients in each of the sample District Public Hospitals represent a three months average (May - July 2001). It can be seen that the overall average monthly patients in the sample District Public Hospitals are 6,247, of which 5,569 are outpatients and 678 are inpatients. Although the average monthly number of patients is 6,247, it varies across District Public Hospitals depending on the size of a hospital as well as the disease incidence in the locality. The average number ranges from the lowest 3,336 in Moulvibazar District Public Hospital to the highest 8,783 patients in Sirajganj District Public Hospital.

The trend of average patients at the sample District Public Hospitals and monthly changes are important indicators of service performance. Table-5.4 illustrates the trend of average patients over a three months period (May – July 2001). As can be seen in the table and in the graph below that the overall average number of patients decreased by 6% in June compared to the number of patients in May 2001. This 6% decrease in total number of patients was resulted from 5% decrease in outpatients and 10% decrease in inpatients. However, the overall increase in the total number of patients was 18% in July compared to that of June's, constituting an overall increase of 11% over two months period. 18% increase in total patients in July is the result of 19% increase in outpatients and 10% increase in inpatients.

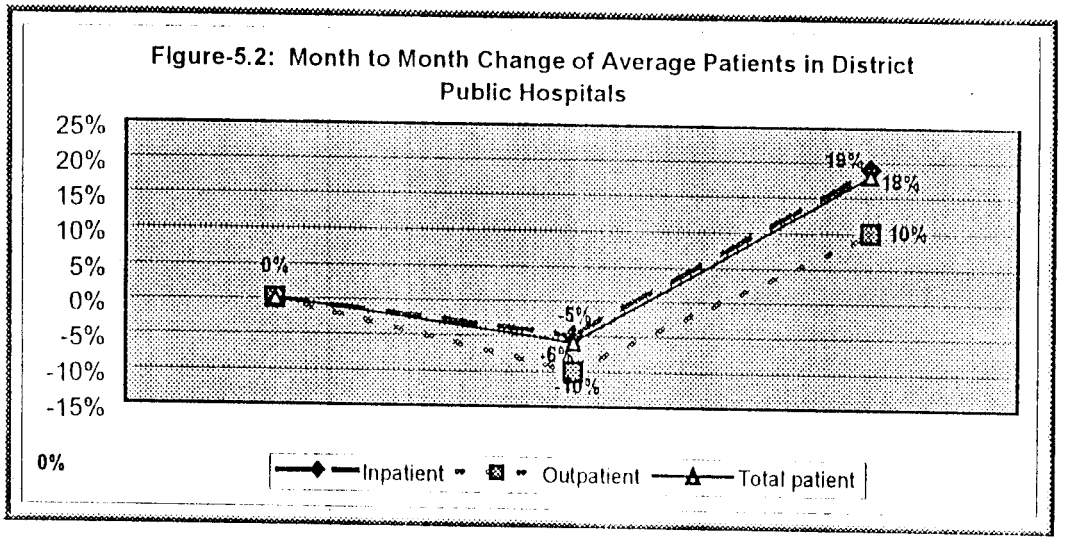


Table-5.4: ICD-Wise Trend of Patients and Services of District Public Hospitals

(n = 6 hospitals)

ICD (Code Range)		DISEASE	May-01 Monthly Average Patient			June-01 Monthly Average Patient			July-01 Monthly Average Patient			Average Monthly Patients (May 2001 to July 2001)					
			Out patient	In patient	Total	Out patient	In patient	Total	Out patient	In patient	Total	Out patient (No)	Out patient (%)	In patient (No)	In patient (%)	Total (No)	Total (%)
001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	520	94	613	498	44	542	477	41	518	499	9.0%	60	8.8%	558	8.9%
121	127	Intestinal Worm Infestation	523	12	535	534	12	546	624	18	642	561	10.1%	14	2.1%	575	9.2%
680	709	Diesease of Skin and Subcutaneous Tissue	405	4	409	407	4	411	492	4	496	435	7.8%	4	0.6%	439	7.0%
531	533	Ulcer of Stomach and Duodenum	545	33	578	615	33	647	627	41	668	596	10.7%	36	5.2%	631	10.1%
460	465	Acute Respiratory Infection	287	30	317	283	32	315	366	28	394	312	5.6%	30	4.4%	342	5.5%
480	486	Pneumonia	44	15	59	42	13	55	42	15	57	43	0.8%	14	2.1%	57	0.9%
280	285	Anaemia's	273	12	285	244	12	256	281	15	296	266	4.8%	13	1.9%	279	4.5%
260	269	Deficiency Disease	247	19	266	230	19	249	277	20	297	251	4.5%	19	2.8%	270	4.3%
780.6	780.6	Pyrexia of Unknown Origin (PUO)	251	32	282	219	33	252	286	36	322	252	4.5%	33	4.9%	286	4.6%
401	405	Hypertensive Disease	52	14	66	46	14	60	130	19	149	76	1.4%	16	2.3%	92	1.5%
490	493	Asthma (Bronchiectasis, Chronic and Unspecified, Emphysema and Asthma)	52	12	64	62	12	75	54	19	73	56	1.0%	15	2.1%	71	1.1%
084	084	Malaria	6	4	10	6	4	9	7	4	11	6	0.1%	4	0.6%	10	0.2%
070	070	Viral Hepatitis	8	8	16	7	9	15	12	11	23	9	0.2%	9	1.4%	18	0.3%
250	250	Diabetes Mellitus	11	4	15	10	4	13	13	5	18	11	0.2%	4	0.6%	15	0.2%
055	055	Measles	4	1	5	4	1	5	3	2	5	4	0.1%	2	0.2%	5	0.1%
010	018	Tuberculosis	6	6	11	7	5	12	6	4	10	6	0.1%	5	0.7%	11	0.2%
960	989	Poisonings and Toxic Effects	42	24	66	41	11	52	28	14	42	37	0.7%	16	2.4%	53	0.9%
290	319	Mental Disorders	23	5	28	31	4	35	29	5	34	28	0.5%	5	0.7%	32	0.5%
714	714	Rheumatic disorders	16	6	22	16	6	22	15	7	23	15	0.3%	6	0.9%	22	0.3%
090	099	Venereal Diseases	7	6	13	7	4	11	8	5	12	7	0.1%	5	0.7%	12	0.2%
410	414	Ischamic Heart Diesease (IHD)	11	5	16	12	6	18	13	5	18	12	0.2%	6	0.8%	18	0.3%
210	229	Neoplasm	13	9	22	11	10	21	9	9	18	11	0.2%	10	1.4%	21	0.3%
E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)	346	105	451	257	111	368	374	109	483	326	5.8%	111	16.4%	437	7.0%
574	575.1	Cholelithisis and Cholecystitis	15	9	23	7	7	14	9	7	16	10	0.2%	8	1.1%	18	0.3%
540	543	Appendicectomy (Appendicitis)	11	12	23	8	10	18	14	12	27	11	0.2%	11	1.7%	23	0.4%
940	949	Burns	15	6	21	11	5	16	12	8	20	13	0.2%	6	0.9%	19	0.3%
800	848	Fractures, Dislocation	92	28	120	72	29	101	112	34	146	92	1.7%	30	4.5%	123	2.0%
600	600	Hyperplasis of Prostate/Hydrocele	6	4	9	5	3	8	5	3	8	5	0.1%	3	0.5%	8	0.1%
603	603	Hernia	10	10	20	8	8	16	14	11	25	11	0.2%	10	1.4%	20	0.3%
038	038	(Septicaemia) Abscers	6	5	12	7	6	13	9	6	15	7	0.1%	6	0.9%	13	0.2%
580	599	Disease of Urinary System	15	7	22	13	8	21	12	7	18	15	0.3%	9	1.3%	24	0.4%
430	438	Cerebrovascular Disease	7	4	10	7	4	12	10	6	16	8	0.1%	5	0.7%	12	0.2%
710	739	Disease of the Musculoskeletal System & Connective Tissue	19	3	22	19	6	25	21	5	25	20	0.4%	4	0.6%	24	0.4%
650	650	Antenatal care	92	17	109	87	17	104	105	17	122	95	1.7%	17	2.5%	112	1.8%
650	650	Normal delivery	1	23	24	2	27	29	2	36	38	2	0.0%	28	4.2%	30	0.5%
651	655	Caeserian Section	1	19	20	1	19	20	2	24	25	1	0.0%	21	3.0%	22	0.3%
630	639	Abortion (DE&C))	11	21	31	8	17	25	14	20	34	11	0.2%	19	2.8%	30	0.5%
630	676	Direct/Indirect Obsteteric Cause/Abortion	68	48	115	55	43	97	46	38	84	56	1.0%	43	6.3%	99	1.6%
360	379	Disorder of the Eye & Adnexa	396	16	412	364	16	380	421	16	437	394	7.1%	16	2.4%	410	6.6%
380	389	Diseases of the Ear and Mastoid Process (ENT)	358	8	365	301	3	304	387	5	392	349	6.3%	5	0.8%	354	5.7%
320	359	Dieseas of Nurvous System (Menengitis)	5	3	8	6	3	9	4	3	7	5	0.1%	3	0.4%	8	0.1%
520	529	Disease of Oral Cavity, Salivary Glands & Jaws	599	-	599	579	-	579	768	-	768	649	11.7%	-	0.0%	649	10.4%
		Total	5,412	699	6,111	5,148	628	5,776	6,137	693	6,830	5,569	100%	678	100%	6,247	100%

Source: Hospital record (register)

Each of the sample District Public Hospital's monthly average patients under ICD and breakdown of services being given to outpatients and inpatients along with other analysis like stay period, month-to-month changes are presented in Annex-B.

5.5 Major Types of Diseases Treated by District Public Hospitals

An important feature is that although the total number of patients has been categorised into 42 ICD categories, just patients of the following 10 diseases constitute 75% of the total patients treated:

Disease Category	as a % of total patients
1. Intestinal Infectious Diseases (commonly known as diarrhoeal disease)	9%
2. Intestinal Worm Infection	9%
3. Diseases of Skin and Subcutaneous Tissue	7%
4. Ulcer of Stomach and Duodenum	10%
5. Acute Respiratory Infection	5%
6. Pyrexia of Unknown Origin (PUO)	5%
7. Injury	7%
8. Disorder of Eye and Adnexa	7%
9. Diseases of the Ear and Mastoid Process (commonly known as ENT diseases)	6%
10. Disease of Oral Cavity, Salivary Glands and Jaws	10%
	75%

Looking at the incidence of outpatients it can be said that the highest *outpatient* incidence is concentrated in the Disease of Oral Cavity, Salivary Glands and Jaws constituting 12% of the total patients followed by Ulcer of Stomach and Duodenum which constitutes 11% of total patient. Injury patients constitute the highest inpatient incidence accounting for as high as 16% of the monthly average inpatients being treated by a sample District Public Hospital.

5.6 Average Stay Period

The average stay period of patients in the District Public Hospitals has been calculated and presented in Annex-B. It has been found that, overall, the average stay period of inpatients in the sample District Public Hospitals is 4.11 days. If the average stay period of patients of specific disease categories were considered, it would be that on average the patients of Caesarean Section stays highest in the hospitals which is 8 days followed by the patients of Ulcer of Stomach and Duodenum, and the patients of Asthma who stay for an average of 7 days. On the other end of the continuum are the patients for Mental Disorders whose average stay period is the lowest, which is 1 day.

5.7 Costing District Public Hospital Services

The costs of health care services provided by a District Public Hospital imply the amount of expenditure (actual or notional) incurred on or attributable to such health care services provided by that District Public Hospital. As discussed earlier, such costs were accumulated based on the factors upon which the expenditures were incurred ensuring enough flexibility so that the costing of the facilities can also be done from the perspective of wards. The costs of secondary health care services provided by District Public Hospitals have been disaggregated primarily according to the factors upon which the expenditures incurred. The factors are:

- Staff Cost
- Cost of MSR
- Cost of Usage of Equipment
- Cost of Furniture and Fixture
- Upkeep and Maintenance Cost of Structure
- Overhead Cost at the Facility level
- Super overhead Cost or Overhead Cost incurred at the Central Level (Policy and Coordination level)

Applying the approach of step-down costing the factor costs were therefore allocated to each category of patients according to their attribution. In case of joint costs, the amount has been apportioned to the patients on a practically appropriate basis. Therefore, the major calculations done in order to show the cost of services of a typical District Public Hospital are:

- Per patient total cost
- Per outpatient cost
- Per inpatient cost
- Per patient staff cost
- Per patient staff time
- Per patient cost of MSR, Usage of equipment, and other.

5.8 Per Patient Total Cost of District Public Hospital Services

The first and the most important calculation is the average total cost per patient and its disease-wise disaggregation which are provided in the Table-5.5. The Table-5.5 also shows per patient cost of each category of patients of 42 ICD groups. The average total patient cost of the each of the categories of patients has been further segregated into inpatient and outpatient costs.

The national (i.e., sample) average of total cost per patient for delivering secondary health care services by the sample District Public Hospitals comes to Tk. 264.97 (Table-5.5). Per patient cost incurred for providing secondary health care services to the out-patients comes to Tk 76.00, while cost per inpatient stands at Tk 1,816.62

Table-5.5: ICD-Wise Average Monthly Total Cost of Services of District Public Hospital

(N = 6 hospital)

SL	ICD Code no		Disease	Average Monthly Total Cost per Patient(May - July 2001			Percentage			% of inpatient cost per patient to that of outpatients
				Out-patient	In-patient	Total	Out-patient	In-patient	Total	
				Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	
1	001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	49.17	1,116.40	162.97	65%	61%	62%	2271%
2	121	127	Intestinal Worm Infestation	34.77	1,272.86	64.94	46%	70%	25%	3660%
3	680	709	Diesease of Skin and Subcutaneous Tissue	70.66	1,245.46	81.38	93%	69%	31%	1763%
4	531	533	Ulcer of Stomach and Duodenum	57.97	1,420.60	134.63	76%	78%	51%	2451%
5	460	465	Acute Respiratory Infection	49.33	1,212.23	150.77	65%	67%	57%	2457%
6	480	486	Pneumonia	238.02	2,540.21	818.63	313%	140%	309%	1067%
7	280	285	Anaemia's	47.37	1,228.09	101.68	62%	68%	38%	2593%
8	260	269	Nutritional Deficiencies	43.66	1,106.77	118.42	57%	61%	45%	2535%
9	780.6	780.6	Pyrexia of Unknown Origin	56.33	1,192.91	189.03	74%	66%	71%	2118%
10	401	405	Hypertensive Disease	47.23	4,024.91	718.60	62%	222%	271%	8523%
11	490	493	Asthma	109.73	1,679.45	432.58	144%	92%	163%	1531%
12	084	084	Malaria	129.57	1,149.76	527.27	170%	63%	199%	887%
13	070	070	Viral Hepatitis	120.33	1,102.15	629.42	158%	61%	238%	916%
14	250	250	Diabetes Mellitus	99.32	2,637.08	768.62	131%	145%	290%	2655%
15	055	055	Measles	74.28	834.12	294.88	98%	46%	111%	1123%
16	010	018	Tuberculosis	145.93	1,200.93	602.58	192%	66%	227%	823%
17	960	989	Poisonings and Toxic Effects	66.33	1,573.56	529.37	87%	87%	200%	2372%
18	290	319	Mental Disorders	54.25	992.69	184.86	71%	55%	70%	1830%
19	714	714	Rheumatic disorders	224.07	1,350.88	553.45	295%	74%	209%	603%
20	090	099	Venereal Diseases	197.94	1,007.14	528.46	260%	55%	199%	509%
21	410	414	Ischamic Heart Diesease (IHD)	620.50	6,298.33	2,441.69	816%	347%	922%	1015%
22	210	229	Neoplasm	165.56	4,209.16	2,056.92	218%	232%	776%	2542%
23	E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)	131.71	1,754.86	544.47	173%	97%	205%	1332%
24	574	575.1	Cholelithisis and Cholecystitis	174.58	3,179.01	1,478.39	230%	175%	558%	1821%
25	540	543	Appendicectomy (Appendicitis)	103.27	3,742.24	1,936.23	136%	206%	731%	3624%
26	940	949	Burns	293.31	1,173.46	586.69	386%	65%	221%	400%
27	800	848	Fractures, Dislocation	283.97	2,702.50	882.03	374%	149%	333%	952%
28	600	600	Hyperplasis of Prostate/Hydrocele	103.10	1,474.22	624.12	136%	81%	236%	1430%
29	603	603	Hernia	84.88	2,821.26	1,396.53	112%	155%	527%	3324%
30	038	038	(Septicaemia) Abscers	99.28	1,123.50	560.18	131%	62%	211%	1132%
31	580	599	Disease of Urinary System	75.81	1,411.75	552.27	100%	78%	208%	1862%
32	430	438	Cerebrovascular Disease	49.84	8,149.75	3,005.21	66%	449%	1134%	16352%
33	710	739	Disease of the Musculoskeletal System & Connective Tissue	54.88	1,465.04	311.27	72%	81%	117%	2669%
34	650	650	Antenatal care	122.53	978.22	252.80	161%	54%	95%	798%
35	650	650	Normal delivery	156.77	1,720.25	1,641.64	206%	95%	620%	1097%
36	651	655	Caeserian Section	77.51	2,029.77	1,925.45	102%	112%	727%	2619%
37	630	639	Abortion (DE&C))/MR	63.23	1,792.06	1,167.76	83%	99%	441%	2834%
38	630	676	Direct/Indirect Obstetetic Cause	248.47	2,040.05	1,026.24	327%	112%	387%	821%
39	360	379	Disorder of the Eye & Adnexa	50.06	1,278.63	98.04	66%	70%	37%	2554%
40	380	389	Diseases of the Ear and Mastoid Process (ENT)	56.39	1,470.51	77.70	74%	81%	29%	2608%
41	320	359	Dieseas of Nurvous System (Menengitis)	50.01	756.30	311.03	66%	42%	117%	1512%
42	520	529	Disease of Oral Cavity, Salivary Glands & Jaws	111.30	-	111.30	146%	0%	42%	
			Total	76.00	1,816.62	264.97	-	-	-	2390%

Table-5.6: ICD-Wise Average Monthly Per Patient Cost of Services of District Public Hospital: District-wise Analysis

(May 2001 - July 2001)

SL.	ICD Code no		Disease	Comilla			Gazipur			Moulvibazar		
				Out-patient	In-patient	Total	Out-patient	In-patient	Total	Out-patient	In-patient	Total
				Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.
1	001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	40.66	1,317.40	158.16	108.09	1,301.26	298.30	68.57	1,015.77	207.49
2	121	127	Intestinal Worm Infestation	34.65	2,355.90	82.51	45.65	1,290.04	80.32	63.03	1,445.59	108.11
3	680	709	Diesease of Skin and Subcutaneous Tissue	67.54	1,161.14	98.78	59.68	2,346.83	83.38	101.27	891.55	118.99
4	531	533	Ulcer of Stomach and Duodenum	54.47	2,219.77	133.50	78.34	2,983.74	125.42	121.68	1,927.62	323.66
5	460	465	Acute Respiratory Infection	34.71	1,284.01	77.55	229.72	1,587.22	746.87	74.43	969.88	176.63
6	480	486	Pneumonia	322.43	1,620.64	971.53	182.66	6,053.11	834.93	209.87	1,571.34	789.76
7	280	285	Anaemia's	38.80	1,550.11	95.52	81.73	1,108.57	135.42	125.22	1,992.86	260.56
8	260	269	Nutritional Deficiencies	65.35	1,506.48	204.82	42.29	1,134.88	91.21	75.96	892.88	195.09
9	780.6	780.6	Pyrexia of Unknown Origin	150.11	1,666.78	1,000.36	65.65	1,194.34	132.04	85.98	943.19	248.89
10	401	405	Hypertensive Disease	24.07	4,475.97	244.12	47.12	10,595.48	977.86	61.62	3,245.30	825.71
11	490	493	Asthma	107.64	1,628.14	648.27	136.40	2,041.67	303.11	107.88	1,818.33	338.14
12	084	084	Malaria	114.91	1,137.18	579.58	350.29	1,408.30	803.72	87.90	933.38	436.04
13	070	070	Viral Hepatitis	147.83	1,715.25	931.54	162.54	798.60	616.87	104.51	915.77	645.35
14	250	250	Diabetes Mellitus	136.13	3,386.51	1,355.02	138.72	2,244.96	1,191.84	63.56	1,802.30	361.63
15	055	055	Measles	-	755.75	755.75	55.13	656.40	255.55	87.07	2,118.45	1,102.76
16	010	018	Tuberculosis	101.31	1,262.99	617.61	180.58	1,533.77	631.64	114.83	1,265.47	728.51
17	960	989	Poisonings and Toxic Effects	43.78	1,666.11	415.56	140.08	1,931.22	1,035.65	143.83	1,795.05	694.24
18	290	319	Mental Disorders	53.29	1,305.91	716.44	289.69	-	336.06	77.68	588.61	155.10
19	714	714	Rheumatic disorders	440.83	1,835.77	905.81	101.19	917.02	422.58	217.35	1,653.26	935.30
20	090	099	Venereal Diseases	114.34	1,437.17	693.08	134.51	-	147.76	172.93	789.94	341.21
21	410	414	Ischamic Heart Diesease (IHD)	631.34	5,768.28	2,343.65	1,142.08	3,012.50	2,323.40	844.46	11,416.51	4,808.98
22	210	229	Neoplasm	132.88	3,262.54	1,232.49	184.12	2,261.38	1,168.09	154.86	8,929.35	3,445.29
23	E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)	64.48	2,167.94	300.46	96.17	2,337.32	398.75	186.37	1,100.44	685.23
24	574	575.1	Cholelithisis and Cholecystitis	113.92	6,282.63	2,011.98	460.33	2,875.73	1,969.95	435.40	3,231.35	2,112.97
25	540	543	Appendicectomy (Appendicitis)	80.84	8,585.31	2,443.19	100.44	3,517.06	1,365.86	90.92	4,480.60	1,798.02
26	940	949	Burns	404.14	1,927.36	556.46	127.16	879.31	418.31	136.34	870.87	393.43
27	800	848	Fractures, Dislocation	388.94	3,636.47	1,527.25	210.81	2,895.72	802.76	292.14	2,253.39	920.75
28	600	600	Hyperplasis of Prostate/Hydroceie	154.36	2,558.92	755.50	-	-	-	92.58	1,822.24	611.48
29	603	603	Hernia	60.54	2,998.30	1,235.64	72.37	1,915.03	686.59	77.74	2,575.76	1,029.37
30	038	038	(Septicaemia) Abscers	101.92	1,938.77	446.33	123.26	1,355.17	451.77	103.95	1,958.29	633.76
31	580	599	Disease of Urinary System	136.05	2,159.57	945.46	95.56	1,641.65	590.31	64.60	1,094.69	333.32
32	430	438	Cerebrovascular Disease	-	5,645.94	5,645.94	-	-	-	57.59	3,548.74	833.40
33	710	739	Disease of the Musculoskeletal System & Connective Tissue	86.40	1,459.24	570.93	63.12	-	172.22	104.79	-	533.67
34	650	650	Antenatal care	104.36	-	232.77	302.33	-	302.33	69.07	695.00	94.51
35	650	650	Normal delivery	246.58	1,606.27	1,567.42	171.52	1,009.44	910.86	-	1,270.85	1,270.85
36	651	655	Caeserian Section	-	2,000.66	2,000.66	-	1,232.19	1,232.19	-	1,062.22	1,062.22
37	630	639	Abortion (DE&C))/MR	442.21	1,726.43	1,634.70	-	989.40	989.40	-	1,065.19	1,065.19
38	630	676	Direct/Indirect Obstetenc Cause	217.49	1,956.87	873.66	307.73	2,442.60	1,391.09	-	1,164.11	1,232.43
39	360	379	Disorder of the Eve & Adnexa	46.64	2,720.76	82.84	78.85	1,154.11	160.62	209.30	1,521.19	310.21
40	380	389	Diseases of the Ear and Mastoid Process (ENT)	48.61	1,632.76	77.55	133.04	1,141.87	227.20	96.03	2,128.90	119.39
41	320	359	Dieseas of Nurvous System (Menengitis)	-	873.64	873.64	-	-	-	-	-	-
42	520	529	Disease of Oral Cavity, Salivary Glands & Jaws	77.32	-	77.32	234.48	-	234.48	132.30	-	132.30
			Total	**61.58**	**2,075.49**	**231.60**	**103.59**	**2,023.19**	**330.21**	**112.20**	**1,424.25**	**362.30**

Table-5.6: ICD-Wise Average Monthly Per Patient Cost of Services of District Public Hospital: District-wise Analysis (Contd.)

(May 2001 - July 2001)

SL	ICD Code no		Disease	Sirajganj			Jessore			Patuakhali		
				Out-patient	In-patient	Total	Out-patient	In-patient	Total	Out-patient	In-patient	Total
				Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.
1	001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	34.38	1,223.68	56.53	67.14	498.16	132.19	101.83	866.31	423.39
2	121	127	Intestinal Worm Infestation	23.29	1,512.08	25.84	66.99	323.15	137.03	58.88	774.90	89.94
3	680	709	Diesease of Skin and Subcutaneous Tissue	89.30	-	89.30	59.47	-	21.45	72.35	817.58	76.47
4	531	533	Ulcer of Stomach and Duodenum	34.24	762.92	89.56	95.75	973.40	102.40	63.87	1,739.16	140.02
5	460	465	Acute Respiratory Infection	36.41	907.10	156.25	80.26	1,185.21	132.70	80.74	1,141.83	330.41
6	480	486	Pneumonia	275.72	4,246.15	834.94	257.66	736.73	104.67	151.06	990.88	493.21
7	280	285	Anaemia's	29.63	941.08	52.79	94.64	984.22	215.52	66.47	766.35	123.99
8	260	269	Nutritional Deficiencies	27.81	799.41	47.24	62.04	646.16	146.61	90.23	1,144.20	228.91
9	780.6	780.6	Pyrexia of Unknown Origin	36.21	1,171.95	109.99	50.35	1,442.06	108.47	58.52	825.04	164.01
10	401	405	Hypertensive Disease	244.15	2,880.92	2,250.39	64.08	556.32	102.83	195.71	2,514.03	1,533.20
11	490	493	Asthma	73.01	1,395.22	286.89	109.06	925.83	176.66	120.08	1,010.12	426.99
12	084	084	Malaria	104.93	1,119.16	473.74	87.35	479.76	149.81	145.37	872.47	436.21
13	070	070	Viral Hepatitis	74.36	1,517.58	290.84	144.96	397.63	300.51	157.10	974.65	484.12
14	250	250	Diabetes Mellitus	354.71	4,338.04	2,061.85	78.78	553.03	112.77	96.95	1,688.09	675.55
15	055	055	Measles	85.54	-	85.61	147.66	-	118.80	76.96	692.09	384.52
16	010	018	Tuberculosis	163.85	1,032.29	380.96	178.41	391.80	291.93	130.93	994.35	377.62
17	960	989	Poisonings and Toxic Effects	131.97	1,726.56	958.80	56.56	381.58	123.14	217.88	1,005.05	723.92
18	290	319	Mental Disorders	47.84	844.04	346.42	47.45	345.19	51.25	41.36	879.46	117.55
19	714	714	Rheumatic disorders	1,309.91	2,057.92	1,609.12	271.82	543.13	300.26	73.05	877.75	162.46
20	090	099	Venereal Diseases	412.76	698.01	531.61	212.93	361.55	272.73	122.17	747.73	434.95
21	410	414	Ischamic Heart Diesease (IHD)	1,325.50	7,755.04	3,897.31	382.81	546.62	169.39	248.35	10,620.97	2,471.06
22	210	229	Neoplasm	197.63	9,069.96	4,230.51	139.35	1,359.14	776.58	280.00	4,610.94	3,373.53
23	E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)	780.28	1,697.31	1,401.89	191.23	1,178.98	304.44	130.49	1,586.55	553.90
24	574	575.1	Cholelithisis and Cholecystitis	270.99	2,257.70	1,806.18	118.66	1,322.08	202.48	145.13	1,973.41	940.04
25	540	543	Appendicectomy (Appendicitis)	107.70	3,496.34	2,612.35	132.65	1,257.42	567.72	109.55	2,016.04	1,558.49
26	940	949	Burns	2,904.18	1,366.42	1,879.01	198.41	709.65	211.59	390.20	1,483.78	815.48
27	800	848	Fractures, Dislocation	2,722.69	2,406.60	2,465.41	232.49	1,361.58	244.36	220.21	1,698.86	483.08
28	600	600	Hyperplasis of Prostate/Hydrocele	-	2,144.62	2,144.62	-	-	-	90.10	781.56	366.69
29	603	603	Hernia	-	2,470.53	2,470.53	169.39	696.25	420.59	89.44	4,723.58	2,020.33
30	038	038	(Septicaemia) Abscers	77.84	1,118.01	408.80	-	-	-	-	762.22	762.22
31	580	599	Disease of Urinary System	79.84	1,091.62	484.55	94.62	1,113.50	756.45	58.31	1,072.85	383.73
32	430	438	Cerebrovascular Disease	-	22,036.74	22,036.74	-	836.54	836.54	43.59	7,549.20	1,635.68
33	710	739	Disease of the Musculoskeletal System & Connective Tissue	45.19	1,903.06	540.62	74.30	481.94	161.18	34.34	638.86	136.80
34	650	650	Antenatal care	88.44	814.24	413.80	208.49	-	169.28	39.78	667.25	126.33
35	650	650	Normal delivery	119.57	1,596.48	1,405.91	-	1,954.76	1,954.76	-	1,796.12	1,796.12
36	651	655	Caeserian Section	77.51	2,337.08	1,583.89	-	3,444.62	3,444.62	-	1,753.63	1,753.63
37	630	639	Abortion (DE&C))/MR	42.17	3,007.07	2,295.49	58.87	1,445.15	506.83	#DIV/0!	1,541.66	1,541.66
38	630	676	Direct/Indirect Obsteteric Cause	718.03	3,413.11	1,915.84	268.41	1,060.73	361.49	77.88	1,561.07	630.62
39	360	379	Disorder of the Eye & Adnexa	61.43	1,210.69	128.24	35.86	437.24	30.63	103.27	1,570.66	158.99
40	380	389	Diseases of the Ear and Mastoid Process (ENT)	72.21	1,680.98	109.84	44.52	373.87	26.89	53.48	2,279.23	74.35
41	320	359	Dieseas of Nurvous System (Menenditis)	94.72	774.25	434.48	-	-	-	44.85	668.15	205.13
42	520	529	Disease of Oral Cavity, Salivary Glands & Jaws	356.85	-	356.85	104.95	-	21.56	55.30	-	55.30
			Total	**58.63**	**1,738.72**	**203.82**	**81.76**	**934.59**	**117.87**	**79.04**	**1,445.83**	**274.53**

The average total cost per patient varies widely across different categories of diseases ranging from as high as 1134% of the average total cost to the lowest 25% of the average total cost. The highest per patient cost incurred for Cerebrovascular Disease (Tk.3,005.21), a major portion of which involves equipment cost required for investigation. Average patient incidence for Cerebrovascular Disease is only 12 in a month, which is only 0.2% of the total number of patients. The second highest (922%) overall average per patient cost incurs for Ischamic Heart Disease patients which is Tk.2,441.69. Patients of both the diseases require investigation like X-Ray. Depreciation of costly X-Ray Machine compounded by the operating cost (X-Ray film, chemicals) resulted in such higher cost. The average monthly disease incidence for Ischamic Heart Disease is 18 which accounts for only 0.3% of the total patients. The average per patient cost for the patients of Neoplasm (Tk. 2,056.92) accounts for the third highest per patient cost which is 776% of the average. As most of the neoplasm cases require minor or major surgery, the service cost naturally goes high. At the other end of the continuum is Intestinal Worm Infection disease group for which the per patient cost is the lowest (Tk. 64.94), accounting for only 25% of the average total per patient cost. Incidence of monthly Intestinal Worm Infection disease has been 9% of the average monthly patients which is quite high in comparison with individual groups of 42 ICD used in this study. Diseases of Skin and Subcutaneous Tissue incurs the second lowest per patient cost which is Tk 81.38. In both the preceding cases number of outpatient way outstripped the number of inpatient and also these patients require minimum equipment and staff time.

5.9 District-wise Breakdown of Service Cost (Analysis of Per Patient Total Cost)

District-wise total cost of patients of each ICD category has been done in the Table-5.6. Average per-patient total cost, and per-patient total cost for in-patient and outpatient vary among the District Public Hospitals. The highest per-patient total cost incurred was in Moulvibazar District Hospital (Tk.362.30) which is 36% higher than the national (i.e., sample) average. Higher per-patient cost for outpatients in Moulvibazar contributed to the higher overall per-patient cost there. Gazipur District Hospital incurs the second highest per-patient cost of Tk.330.21 which is 25% higher than the average cost, resulting from higher per-patient cost for outpatients.

On the other hand, Jessore District Hospital incurs the lowest per-patient cost of Tk.117.87. Lower per-patient cost for inpatients (Tk934.59) contributes to the lowest overall per-patient cost in Jessore District Hospital.

Table-5.7: Summary of District-wise Per Patient Total Cost

District Hospitals	Per Patient Total Cost		
	Total Patient (Tk.)	Outpatient (Tk.)	Inpatient (Tk.)
Comilla	231.60	61.58	2,075.49
Gazipur	330.21	103.59	2,023.19
Moulovibazar	362.30	112.20	1,424.25
Sirajganj	203.82	58.63	1,738.72
Jessore	117.87	81.76	934.59
Patuakhali	274.53	79.04	1,445.83
Average	**264.97**	**76.00**	**1,816.62**

5.10 Factor/ Element-wise Breakdown of Service Cost (Analysis of Per Patient Total Cost)

As can be seen in the following table that in the per patient cost of Tk 264.97, the cost of staff time (incurred for each patient of District Public Hospital) is Tk 106.64. When the cost for outpatient and inpatient is compared separately, it is found that Tk 31.82 is spent on account of staff cost for each outpatient while Tk 720.99 is spent for each inpatient. MSR cost incurred for each patient is Tk 25.97; by segregating this cost it is seen that Tk.13.88 is spent for each outpatient while Tk 125.23 is spent for each inpatient. In respect of usage cost of Equipment in District Public Hospitals, Tk 17.34 spent for an outpatient and Tk 544.70 spent for an inpatient.

Table-5.8: Summary of Factor-wise Per Patient Total Cost

Cost Elements	Per Patient Cost					
	Outpatient (Tk.)	%	Inpatient (Tk.)	%	Total Patient (Tk.)	%
Cost of Staff Time Spent	31.82	42%	720.99	40%	106.64	40%
Cost of MSR	13.88	18%	125.23	7%	25.97	10%
Cost of Equipment	17.34	23%	544.70	30%	74.59	28%
Cost of Furniture & Fixture	0.74	1%	24.39	1%	3.31	1%
Upkeep and Maintenance of Physical Structure	2.62	3%	207.23	5%	11.67	4%
Overhead Cost at the Facility	6.31	8%	207.23	11%	28.12	11%
Super-overhead Cost	3.29	4%	108.07	6%	14.67	6%
Total	76.00	100%	1,816.62	100%	264.97	100%

On account of furniture and fixture only Tk 3.31 is spent for each patient of District Public Hospital. For each outpatient this cost is only Tk 0.74, while for each inpatient this cost is Tk 24.39. For upkeep and maintenance of Physical Structure Tk 11.67 is allocated to each patient of a District Public Hospital. District Public Hospitals spent Tk.28.12 as overhead cost for each patient. This cost is Tk 6.31 for each outpatient, while Tk 207.23 for each inpatient. Super overhead Cost allocation for each patient is Tk.14.47.

5.11 Monthly Cost of District Public Hospital Services

Average monthly cost incurred in the sample District Hospitals is Tk 1,655,195 for an average monthly 6,247 patients, providing an average per-patient cost of Tk 264.97. Looking at the cost of individual ICD disease categories it can be seen that patients of only seven disease categories constitute 45% of the total cost as shown below.

	Disease Category	As a % of total cost	As a % of total patients
i.	Intestinal Infectious Diseases	5%	9%
ii.	Ulcer of Stomach and Duodenum	5%	10%
iii.	Hypertensive Diseases	4%	1%
iv.	Injury	14%	7%
v.	Fracture and Dislocation	7%	2%
vi.	Direct/Indirect Obstetrics Cause	6%	2%
vii.	Disease of Oral Cavity, Salivary Glands and Jaws	4%	10%
		45%	41%

Mentionable here that the number of patients of those disease categories constitute 41% of the total number of patients.

5.12 Analysis of Monthly Service Cost by Cost Factors/Elements

It is important to ascertain the percentage of each of the major cost factors in the total cost of service delivery by a typical District Public Hospital. This has been done in sufficient detail in the Table-5.10; while the hospital wise details analysis are given in the Table-5.11.

i. Staff Cost

As emphasized in the ToR the share of staff cost in the delivery of services of the sample District Public Hospitals has been analysed in details. From the Table-5.9 and as shown in the following graph the average monthly cost of staff time spent in the District Public Hospitals is Tk. 666,164, which accounts for 40% of total cost of services. As discussed earlier the cost of staff time spent has been calculated based on actual time spent by staff members. Although the percentage of staff time utilisation cost to the total cost is 40%, it varies among the sample District Public Hospitals from the highest 49% to the lowest 32% (Table-5.11). The highest 49% is calculated in Comilla District Public Hospital, while the lowest one is found in Moulvibazar District Public Hospital, which is 32% (Table-5.11).

Table-5.9: Summary of Average Monthly Cost and Breakdown by Elements

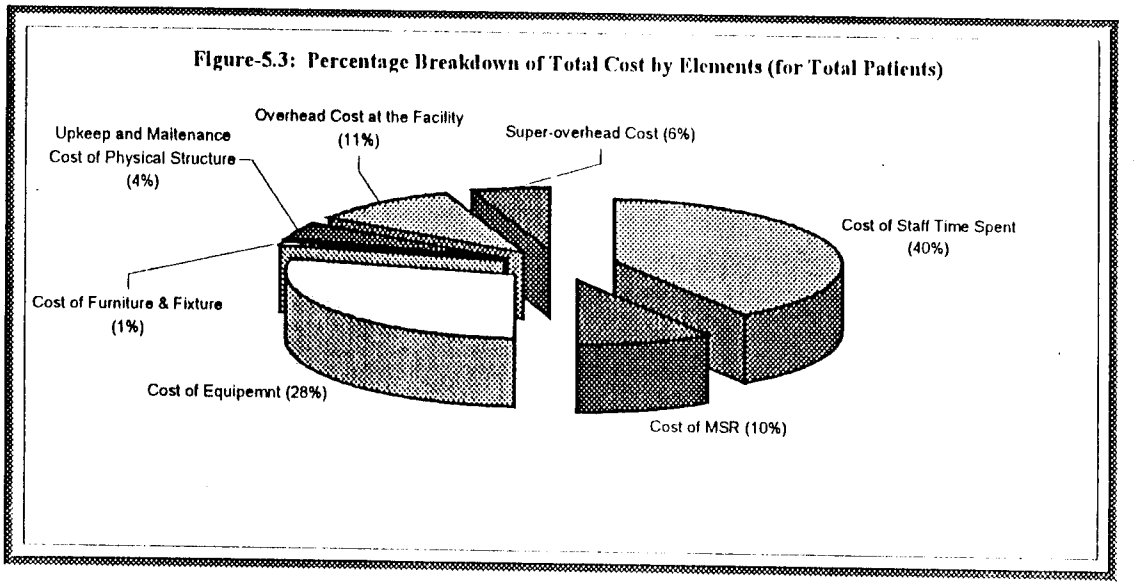
Cost Elements	Monthly Cost		
	Outpatient (Tk.)	Inpatient (Tk.)	Total Patient (Tk.)
Cost of Staff Time Spent	177,209	488,955	666,164
Cost of MSR	77,284	84,928	162,212
Cost of Equipment	96,557	369,398	465,955
Cost of Furniture & Fixture	4,135	16,542	20,677
Upkeep and Maintenance Cost of Physical Structure	14,581	58,323	72,904
Overhead Cost at the Facility	35,134	140,534	175,668
Super-overhead Cost	18,323	73,292	91,615
Total	423,223	1,231,972	1,655,194

The percentage of the cost of staff time spent to the total cost is 42% for out patients, and 40% for inpatients. The higher percentage attributable to outpatients is because the outpatients get more staff time relative to other cost elements.

Table-5.10: Breakdown of Average Monthly Total Cost of District Public Hospital Services (as per ICD grouping) by Cost Elements

(May 2001 - July 2001)

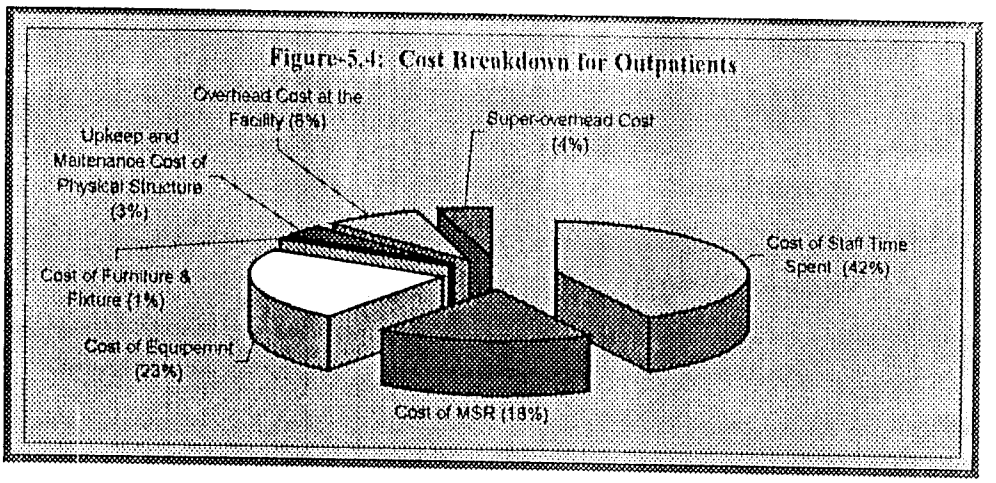
ICD Code no		Disease	No of Patient			Cost of Staff Time Spent			Cost of M&R			Cost of Equipment Used			Cost of Furniture and Fixtures			Upkeep and Maintenance Cost of Physical Structure			Overhead Cost at the Facility			Super Overhead Cost			Total Cost				Per Patient Cost		
			Out-patient	In-patient	Total patient	Out-patient	In-patient	Total patient	Out-patient	In-patient	Total patient	Out-patient	In-patient	Total patient	Out-patient	In-patient	Total patine	Out-pattern	In-patient	Total patient	Out-patient	In-patient	Total patient	Out-patient	In-patient	Total patient	Out-patient	In-patient	Total patient	As a % of Total Cost	Out-patient	In-patient	Total patine
			No	No	No	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.		Tk.	Tk.	Tk.
001	009	Intestinal Infectious Diseases (Diarrhoeal diseases)	499	60	558	12,437	32,870	45,307	5,895	4,631	10,526	669	2,731	3,400	335	1,472	1,807	1,073	5,304	6,377	2,615	13,111	15,725	1,486	6,307	7,794	24,510	66,426	90,936	5%	49.17	1,116.40	162.97
121	127	Intestinal Worm Infestation	561	14	575	11,649	8,832	20,482	1,161	564	1,725	628	1,697	2,325	386	372	758	1,110	1,401	2,511	2,881	3,426	6,307	1,676	1,527	3,203	19,490	17,820	37,310	2%	34.77	1,272.86	64.94
680	709	Diesease of Skin and Subcutaneous Tissue	435	4	439	10,999	3,133	14,132	13,214	232	13,445	99	2	101	354	90	444	1,324	309	1,633	3,156	767	3,923	1,568	450	2,018	30,715	4,982	35,697	2%	70.66	1,245.46	81.38
531	533	Ulcer of Stomach and Duodenum	596	36	631	15,503	19,859	35,362	11,531	6,867	18,398	441	9,797	10,238	434	898	1,332	1,318	2,622	3,939	3,434	6,802	10,235	1,858	3,588	5,446	34,519	50,431	84,950	5%	57.97	1,420.60	134.63
460	465	Acute Respiratory Infection	312	30	342	8,283	21,480	29,763	3,068	2,205	5,274	403	253	657	208	733	942	722	2,368	3,090	1,797	5,981	7,777	917	3,144	4,061	15,399	36,165	51,564	3%	49.33	1,212.23	150.77
480	486	Pneumonia	43	14	57	2,720	10,509	13,229	1,883	1,155	3,038	4,946	18,843	23,790	32	325	357	115	1,212	1,327	259	2,797	3,056	160	1,569	1,729	10,116	36,410	46,526	3%	238.02	2,540.21	818.63
280	285	Anaemia's	266	13	279	7,890	8,659	16,349	1,775	243	2,018	266	1,494	1,760	184	325	508	523	1,026	1,549	1,386	2,662	4,049	785	1,352	2,136	12,608	15,760	28,369	2%	47.37	1,228.09	101.68
260	269	Nutritional Deficiencies	251	19	270	6,608	11,789	18,397	1,441	387	1,828	28	35	63	177	484	661	560	1,906	2,466	1,328	4,317	5,646	823	2,109	2,932	10,965	21,029	31,994	2%	43.68	1,106.77	118.42
780.6	780.6	Pyrexia of Unknown Origin	252	33	286	7,954	22,333	30,287	2,595	903	3,497	78	2,666	2,742	202	778	980	746	2,861	3,607	1,709	6,744	8,452	924	3,480	4,404	14,208	39,764	53,969	3%	56.33	1,192.91	189.03
401	405	Hypertensive Disease	76	16	92	2,266	6,374	8,640	264	165	429	144	49,541	49,686	52	384	436	162	1,239	1,421	448	3,067	3,516	248	1,615	1,863	3,605	62,386	65,991	4%	47.23	4,024.91	718.60
490	493	Asthma	56	15	71	3,270	11,913	15,184	1,817	1,691	3,508	281	4,657	4,938	43	360	402	161	1,152	1,313	361	3,051	3,412	212	1,527	1,739	6,145	24,352	30,497	2%	109.73	1,679.45	432.58
084	084	Malaria	6	4	10	495	1,623	2,119	63	137	200	126	1,068	1,194	5	86	91	22	333	354	42	730	772	24	430	454	777	4,407	5,185	0%	129.57	1,149.76	527.27
070	070	Viral Hepatos	9	9	18	685	4,738	5,422	115	265	380	126	1,068	1,194	7	223	230	25	909	933	56	2,006	2,062	30	1,078	1,108	1,043	10,287	11,330	1%	120.33	1,102.15	529.42
250	250	Diabetes Mellitus	11	4	15	638	2,438	3,076	147	130	278	114	6,301	6,415	9	92	101	53	349	402	94	780	875	53	458	511	1,109	10,548	11,657	1%	99.32	2,637.08	788.62
055	055	Measles	4	2	5	187	655	843	41	31	72	-	1	1	3	34	38	7	91	99	19	234	252	15	205	221	272	1,251	1,524	0%	74.28	834.12	294.88
010	018	Tuberculosis	6	5	11	645	2,618	3,263	162	184	345	29	783	812	5	117	122	19	495	514	41	1,073	1,114	23	534	558	924	5,805	6,729	0%	145.93	1,200.93	502.58
960	989	Poisonings and Toxic Effects	37	16	53	1,059	10,239	11,298	639	2,163	2,802	300	6,092	6,391	25	425	450	89	1,382	1,471	224	3,611	3,835	107	1,790	1,897	2,443	25,702	28,145	2%	66.33	1,573.56	529.37
290	319	Mental Disorders	28	5	33	974	2,252	3,226	50	28	78	13	178	191	24	111	135	111	421	532	236	1,006	1,242	102	471	573	1,510	4,467	5,977	0%	54.25	992.69	184.86
714	714	Rheumatic disorders	15	8	23	2,264	2,815	5,080	80	73	153	856	2,965	3,821	13	154	168	47	525	572	117	1,256	1,372	59	767	826	3,436	8,556	11,991	1%	224.07	1,350.88	553.45
090	099	Venereal Diseases	7	5	12	1,088	2,271	3,359	197	152	349	-	178	178	5	128	134	22	475	497	46	1,157	1,203	27	507	534	1,386	4,868	6,253	0%	197.94	1,007.14	528.46
410	414	Ischamic Heart Dresease (IHD)	12	6	18	1,288	3,357	4,646	51	132	183	5,936	29,899	35,835	9	138	148	36	417	454	85	1,061	1,146	40	685	725	7,446	35,891	43,137	3%	620.50	6,298.33	2,441.69
210	229	Benign Neoplasm	11	10	21	907	8,203	9,110	685	2,556	3,240	94	25,898	25,992	8	240	248	25	730	755	62	1,924	1,985	41	1,139	1,179	1,821	40,689	42,510	3%	165.56	4,209.16	2,056.92
E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)	326	111	437	14,267	78,613	92,880	4,293	18,983	23,276	19,837	49,965	69,802	251	2,576	2,827	876	10,096	10,971	2,177	22,722	24,899	1,170	11,834	13,004	42,871	194,789	237,660	14%	131.71	1,754.86	544.47
574	575.1	Cholelithisis and Cholecystitis	10	8	18	368	6,586	6,953	557	6,094	6,651	673	8,634	9,307	8	187	195	32	595	627	75	1,470	1,545	33	807	840	1,746	24,372	26,118	2%	174.58	3,179.01	1,478.39
540	543	Appendicectomy (Appendicitis)	11	11	23	413	12,771	13,184	579	7,845	8,424	-	17,062	17,062	9	281	289	34	931	965	74	2,310	2,383	45	1,214	1,258	1,153	42,412	43,565	3%	103.27	3,742.24	1,936.23
940	949	Burns	13	6	19	632	3,253	3,885	475	506	981	2,411	974	3,384	10	150	161	43	545	588	92	1,248	1,340	52	755	808	3,715	7,432	11,147	1%	293.31	1,173.46	586.69
800	848	Fractures, Dislocation	92	30	123	8,498	31,151	39,649	2,846	3,647	6,493	13,426	34,650	48,076	78	733	811	303	2,443	2,747	714	6,043	6,757	354	3,310	3,664	26,220	81,976	108,196	7%	283.97	2,702.50	982.03
600	600	Hyperplasis of Prostate/Hydrocele	5	3	8	212	1,140	1,352	227	778	1,005	-	1,425	1,425	5	74	79	21	276	297	46	675	721	21	300	321	533	4,668	5,201	0%	103.10	1,474.22	624.12
603	603	Hernia	11	10	20	290	6,908	7,198	442	1,884	2,326	-	14,418	14,418	8	239	247	34	797	831	71	1,940	2,011	46	1,086	1,132	891	27,272	28,163	2%	84.88	2,821.26	1,396.53
038	038	Abscers	7	6	13	397	1,884	2,281	249	1,021	1,269	-	1,425	1,425	5	145	150	15	456	472	36	1,211	1,247	26	598	624	728	6,741	7,469	0%	99.28	1,123.50	560.18
580	599	Disease of Urinary System	15	9	24	597	4,879	5,476	317	1,312	1,629	-	2,175	2,175	13	209	222	53	729	782	118	1,782	1,899	65	915	979	1,162	12,000	13,162	1%	75.81	1,411.75	552.27
430	438	Cerebrovascular Disease	8	5	12	126	2,181	2,307	98	100	198	-	32,318	32,318	8	110	118	42	457	499	78	1,041	1,119	40	466	506	390	36,674	37,064	2%	49.84	8,149.75	3,005.21
710	739	Disease of the Musculoskeletal System & Connective Tissue	20	4	24	640	1,553	2,193	128	34	163	12	2,824	2,836	17	115	131	56	380	436	143	1,017	1,160	73	426	499	1,070	6,348	7,419	0%	54.88	1,465.04	311.27
650	650	Antenatal care	95	17	112	6,572	9,958	16,530	443	285	728	3,178	7	3,184	72	441	513	325	1,174	1,498	672	3,095	3,767	339	1,670	2,010	11,600	16,630	28,230	2%	122.53	978.22	252.80
650	650	Normal delivery	2	28	30	174	28,478	28,652	47	3,001	3,048	-	5,115	5,115	1	699	700	2	2,402	2,404	6	5,857	5,863	5	3,188	3,194	235	48,740	48,976	3%	156.77	1,720.25	1,641.64
651	655	Caesarian Section	1	21	22	21	26,229	26,249	61	5,464	5,524	-	1,425	1,425	1	482	482	1	1,843	1,845	4	4,145	4,149	3	2,361	2,364	90	41,949	42,039	3%	77.51	2,029.77	1,925.45
630	639	Abortion (DE&C)/MR	11	19	30	452	22,414	22,867	77	2,029	2,107	-	1,425	1,425	8	466	475	35	1,802	1,837	82	4,063	4,145	30	2,148	2,178	685	34,348	35,033	2%	63.23	1,792.06	1,167.76
630	676	Direct/Indirect Obstetenc Cause	56	43	99	3,793	39,683	43,476	2,111	5,119	7,230	7,234	24,412	31,646	43	1,019	1,063	140	3,654	3,793	379	8,821	9,200	174	4,673	4,848	13,873	87,382	101,255	6%	248.47	2,040.05	1,026.24
360	379	Disorder of the Eye & Adnexa	394	16	410	9,535	9,127	18,662	4,844	1,339	6,184	95	2,133	2,228	292	442	734	1,087	1,624	2,711	2,659	3,920	6,579	1,193	1,873	3,066	19,706	20,458	40,164	2%	50.06	1,278.63	98.04
380	389	Diseases of the Ear and Mastoid Process (ENT)	349	5	354	11,207	2,385	13,593	3,164	454	3,618	204	2,806	3,011	277	133	410	1,094	385	1,479	2,602	1,012	3,614	1,103	667	1,770	19,651	7,843	27,494	2%	56.39	1,470.51	77.70
320	359	Diseas of Nurvous System (Menengitis)	5	3	8	78	801	879	82	139	221	-	55	55	5	71	76	16	210	226	44	601	645	17	267	284	242	2,143	2,385	0%	50.01	756.30	311.03
520	529	Disease of Oral Cavity Salivary Glands & Jaws	649	-	649	19,327	-	19,327	9,370	-	9,370	33,911	-	33,911	505	-	505	2,082	-	2,082	4,664	-	4,664	2,355	-	2,355	72,215	-	72,215	4%	111.30	-	111.30
		Total	5,569	678	6,247	177,209	488,955	666,164	77,284	84,928	162,212	96,557	389,398	485,955	4,135	16,542	20,677	14,581	58,323	72,904	35,134	140,534	175,668	18,323	73,292	91,615	423,223	1,231,972	1,655,194	100%	76.00	1,816.62	264.97



ii. *Cost of MSR*

The overall average monthly of cost of MSR is Tk 162,212, which accounts for 10% of the total cost. However, it varies among the District Public Hospitals from the lowest 9% in Comilla District Public Hospital to the highest 12% in Moulvibazar District Public Hospital (Table-6.11). Mentionable here that MSR include medicine and surgical items and clinical chemicals and ingredients.

The cost of MSR constitutes 7% of the total cost attributable to inpatients, while 18% in case of outpatients. Although as far as percentages are concerned, the cost of MSR is higher for outpatients compared to inpatients, in absolute term, the cost of MSR for outpatients is Tk 77,284 as against Tk 84,928 that incur for inpatients. Higher percentage of cost of MSR for outpatients is because the total cost is relatively far lower than that of inpatients. Also, other than the cost of investigation and cost of time spent by clinical staff members, MSR is the only major expenses attributable to outpatients.

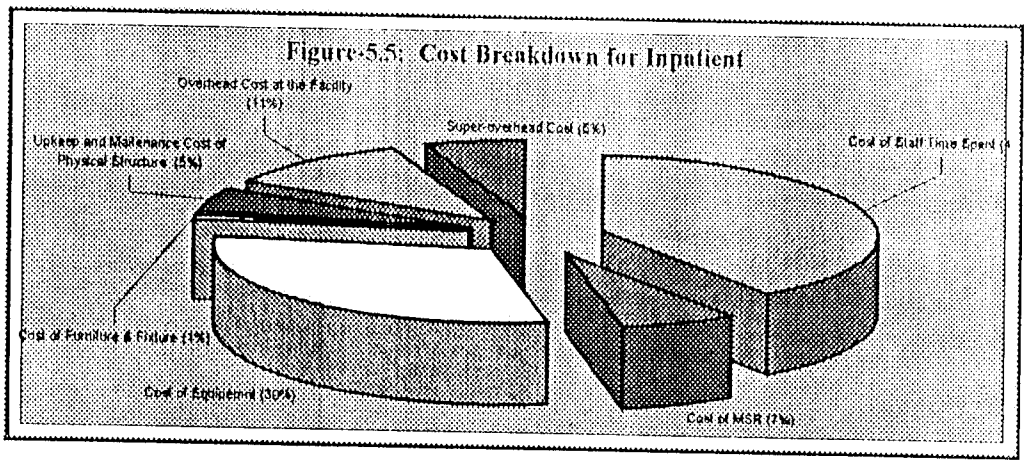


Although, overall, the cost of MSR constitutes 18% of the total cost attributable to outpatients, it varies by some percentage among the District Public Hospitals from the lowest 16% in Jessore District Public Hospital to the highest 21% in Patuakhali District Public Hospital (Table-5.11). Similarly, although the cost of MSR constitutes 7% to the total cost attributable to inpatients, it slightly varies among the District Public Hospitals

from the lowest of 6% in Sirajganj District Public Hospital and Jessore District Public Hospital to the highest 9% in Moulvibazar District Public Hospital (Table-5.11).

iii. Cost of Equipment

The overall monthly cost of Equipment is Tk 465,955 as incurred for an average of 6,247 patients and that constitutes 28% of the average cost of the sample District Public Hospitals. The service cost of equipment includes the depreciation cost of equipment and the cost associated with their operation and maintenance. As the District Public Hospitals have been using some expensive equipment for investigation/diagnoses, for surgery and other clinical purposes, depreciation cost becomes high. It should also be mentioned here that the useful life that was taken to calculate the depreciation was generally more than what should be in an ideal situation. It was done considering the practicality of the situation in the Public District Hospitals where such equipment have been used longer than their normal accounting life.



Although the Cost of Equipment constitutes 28% of the total cost, it varies among the sample District Public Hospitals to a reasonable extant from the lowest 23% in Comilla District Public Hospital to the highest 36% in Sirajganj District Public Hospital (Table-5.11).

For outpatients, the overall average monthly Cost of Equipment is Tk 96,557 constituting 23% of the total cost attributable to outpatient services. For inpatients, the overall monthly average Cost of Equipment is Tk 369,398, which constitutes 30% of the total cost attributable to inpatient services. Higher cost association with inpatient is resulted from the higher usage of equipment like surgical equipment, investigation equipment and other specialized medical equipements.

The overall cost of equipment attributable to outpatients accounts for 23% of the total cost attributed to be services of outpatient, it varies slightly across the District Public Hospitals ranging from the lowest 17% in Patuakhali District Public Hospital to the highest 31% in Sirajganj District Public Hospital (Table-5.11). Cost of Equipment attributable to inpatient constitutes 30% of total cost attributable to the services of inpatient. However, the percentage of Cost of Equipment to the total cost attributable to inpatient varies across the District Hospitals by a significant percentage, e.g., ranging from the lowest 23% in Comilla District Hospital to the highest of 37% jointly in Gazipur and Sirajganj District Hospitals (Table-5.11).

Table-5.11: Breakdown of Average Monthly Total Cost of District Public Hospital Services (as per ICD) by Cost Elements: District-wise Analysis

(May 2001 - July 2001)

			Comilla	% of Total cost	Gazipur	% of Total cost	Moulvibazar	% of Total cost	Sirajganj	% of Total cost	Jessore	% of Total cost	Patuakhali	% of Total cost	Average	% of Total cost	Average per patient cost
Number of Patient	Outpatient	No	7,570	92%	3,556	88%	2,692	81%	8,024	91%	6,555	91%	5,015	86%	5,569	89%	5,569
	Inpatient	No	698	8%	476	12%	634	19%	759	9%	665	9%	837	14%	678	11%	678
	Total	**No**	**8,268**	**100%**	**4,032**	**100%**	**3,326**	**100%**	**8,783**	**100%**	**7,220**	**100%**	**5,852**	**100%**	**6,247**	**100%**	**6,247**
Cost of Staff Time Spent	Outpatient	Tk.	208,950	45%	182,460	50%	106,871	35%	180,341	38%	229,511	43%	155,124	39%	177,209	42%	31.82
	Inpatient	Tk.	738,314	51%	361,773	38%	276,884	31%	493,611	37%	621,501	40%	441,644	36%	488,955	40%	720.99
	Total	**Tk.**	**947,264**	**49%**	**544,233**	**41%**	**383,756**	**32%**	**673,952**	**38%**	**851,012**	**41%**	**596,769**	**37%**	**666,164**	**40%**	**106.64**
Cost of MSR	Outpatient	Tk.	85,033	18%	73,278	20%	56,344	19%	82,903	18%	84,356	16%	81,788	21%	77,284	18%	13.88
	Inpatient	Tk.	94,598	7%	72,993	8%	83,319	9%	79,788	6%	86,797	6%	92,076	8%	84,928	7%	125.23
	Total	**Tk.**	**179,631**	**9%**	**146,271**	**11%**	**139,662**	**12%**	**162,691**	**9%**	**171,153**	**8%**	**173,864**	**11%**	**162,212**	**10%**	**25.97**
Cost of Equipment	Outpatient	Tk.	102,555	22%	70,575	19%	70,295	23%	143,661	31%	123,244	23%	69,012	17%	96,557	23%	17.34
	Inpatient	Tk.	337,337	23%	360,010	37%	268,673	30%	492,084	37%	443,609	29%	314,671	26%	369,398	30%	544.70
	Total	**Tk.**	**439,892**	**23%**	**430,586**	**32%**	**338,968**	**28%**	**635,745**	**36%**	**566,853**	**27%**	**383,683**	**24%**	**465,955**	**28%**	**74.59**
Cost of Furniture & Fixture	Outpatient	Tk.	4,352	1%	2,705	1%	2,457	1%	4,938	1%	5,204	1%	5,156	1%	4,135	1%	0.74
	Inpatient	Tk.	17,409	1%	10,821	1%	9,830	1%	19,750	1%	20,817	1%	20,624	2%	16,542	1%	24.39
	Total	**Tk.**	**21,762**	**1%**	**13,526**	**1%**	**12,287**	**1%**	**24,688**	**1%**	**26,021**	**1%**	**25,780**	**2%**	**20,677**	**1%**	**3.31**
Upkeep and Maintenance Cost of Physical Structure	Outpatient	Tk.	10,994	2%	5,400	1%	20,000	7%	10,260	2%	22,666	4%	18,165	5%	14,581	3%	2.62
	Inpatient	Tk.	43,976	3%	21,601	2%	80,000	9%	41,040	3%	90,664	6%	72,658	6%	58,323	5%	86.00
	Total	**Tk.**	**54,969**	**3%**	**27,002**	**2%**	**100,000**	**8%**	**51,300**	**3%**	**113,331**	**5%**	**90,823**	**6%**	**72,904**	**4%**	**11.67**
Overhead Cost at the Facility	Outpatient	Tk.	35,942	8%	15,637	4%	27,744	9%	30,032	6%	52,648	10%	48,798	12%	35,134	8%	6.31
	Inpatient	Tk.	143,768	10%	62,549	6%	110,977	12%	120,126	9%	210,593	14%	195,192	16%	140,534	11%	207.23
	Total	**Tk.**	**179,710**	**9%**	**78,186**	**6%**	**138,721**	**12%**	**150,158**	**8%**	**263,241**	**13%**	**243,990**	**15%**	**175,668**	**11%**	**28.12**
Super-overhead Cost	Outpatient	Tk.	18,323	4%	18,323	5%	18,323	6%	18,323	4%	18,323	3%	18,323	5%	18,323	4%	3.29
	Inpatient	Tk.	73,292	5%	73,292	8%	73,292	8%	73,292	6%	73,292	5%	73,292	6%	73,292	6%	108.07
	Total	**Tk.**	**91,615**	**5%**	**91,615**	**7%**	**91,615**	**8%**	**91,615**	**5%**	**91,615**	**4%**	**91,615**	**6%**	**91,615**	**6%**	**14.67**
Total Cost	**Outpatient**	Tk.	**466,148**	**100%**	**368,379**	**100%**	**302,035**	**100%**	**470,457**	**100%**	**535,953**	**100%**	**396,366**	**100%**	**423,223**	**100%**	**76.00**
	Inpatient	Tk.	**1,448,694**	**100%**	**963,039**	**100%**	**902,975**	**100%**	**1,319,692**	**100%**	**1,547,274**	**100%**	**1,210,157**	**100%**	**1,231,972**	**100%**	**1,816.62**
	Total	Tk.	**1,914,842**	**100%**	**1,331,418**	**100%**	**1,205,009**	**100%**	**1,790,149**	**100%**	**2,083,226**	**100%**	**1,606,522**	**100%**	**1,655,194**	**100%**	**264.97**
Per Patient Cost	Outpatient	Tk.	61.58		103.59		112.20		58.63		81.76		79.04		76.00		
	Inpatient	Tk.	2,075.49		2,023.19		1,424.25		1,738.72		2,326.73		1,445.83		1,816.62		
	Total	Tk.	231.60		330.21		362.30		203.82		288.54		274.53		264.97		

iv Cost of Furniture and Fixture

The average monthly cost of furniture and fixture is Tk 20,677 constituting only around 1% of the total cost attributable to the secondary health care services provided to the patients of District Public Hospitals (Table-5.11).

v. Cost of Maintenance

Upkeep and maintenance cost of physical structure constitutes only 4% of the total monthly cost of services of District Public Hospitals yielding an average monthly cost of Tk 72,904. Considering this cost in respect of each sample District Public Hospital there are variations among the hospitals between the lowest 2% of total cost in Gazipur District Public Hospitals to the highest of 8% of the total cost in Moulvibazar District Public Hospital (Table-5.11). As it is directly related to the dimension of plinth area, there is nothing significant to point out.

vi. Overhead Cost

The overhead cost of District level public hospital operation includes utilities, TA/DA, administrative contingencies, etc. An average overhead cost comes to Tk.175,688 constituting 11% of the total cost of a District Public Hospital services (Table-5.10).

vii. Super Overhead Cost

Monthly allocation of Super-overhead cost subject to the basis adopted (as discussed earlier) is Tk 91,615, which constitutes 6% of total cost attributable to the patients of a District Public Hospital receiving secondary health care services (Table-5.10).

5.13 Staff Time Utilisation-Per Patient Analysis

The overall combined staff time utilisation per patient varies from the lowest 0.68 hours or around 40 minutes to the highest 27.86 hours Table-5.12 provides the analysis. It should be reiterated here that staff time utilisation includes direct and indirect time spent by all the clinical, support and administrative staff members of District Public Hospitals.

On average, the highest amount of time of 27.86 hours is spent for each Caesarean patient. It should be noted there that except some negligible instances, all the patients of Caesarean section are inpatients and their average stay period in the hospital is the highest, which is 8 days. Also clinical and support staff members together spend a substantial time for these patients. All these contributed to their being the highest time demanding patients. The patients of Normal Delivery are provided with the second highest aggregate time by the staff member of District Hospitals when compared in terms of staff time utilisation per patient. This is also because in this category of ICD, most are inpatients. The third highest time consuming patients (in terms of staff time utilisation per patient) are the patients of Direct/Indirect Obstetric Cause. Notable here that when considered in broader terms of groups, a substantial time is utilised (in terms of staff time utilisation per patient) for the patients of Maternal Health Care. On the other end of the continuum are the patients of Disease of Oral Cavity, Salivary Glands and Jaws being provided with the lowest aggregate time by the staff members, which is only 40 minutes (0.68 hours) per patient. This is mostly because all the patients of this disease category are outpatient.

Table-5.12: ICD-Wise Analysis of Staff Time Utilisation and Cost of Services of District Public Hospital

(May 2001 - July 2001)

ICD Code Range		Disease	No of Patient			Utilisation of Staff time			Cost of Staff Time Spent			Utilisation of Staff Time Per Patient			Cost of Staff Time Spent Per Patient		
			Out patient	In-patient	Total patinet	Out patient	In-patient	Total patinet	Out patient	In-patient	Total patinet	Out patient	In-patient	Total patinet	Out patient	In-patient	Total patinet
			No.	No.	No.	Hrs.	Hrs.	Hrs.	Tk.	Tk.	Tk.	Hrs	Hrs.	Hrs.	Tk.	Tk.	Tk.
001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	499	60	558	271	808	1,079	12,437	32,870	45,307	0.54	13.57	1.93	24.95	552.44	81.20
121	127	Intestinal Worm Infestation	561	14	575	270	212	482	11,649	8,832	20,482	0.48	15.15	0.84	20.78	630.89	35.65
680	709	Diesease of Skin and Subcutaneous Tissue	435	4	439	242	66	307	10,999	3,133	14,132	0.56	16.41	0.70	25.31	783.25	32.22
531	533	Ulcer of Stomach and Duodenum	596	36	631	339	461	800	15,503	19,859	35,362	0.57	12.98	1.27	26.03	559.40	56.04
460	465	Acute Respiratory Infection	312	30	342	174	486	660	8,283	21,480	29,763	0.56	16.30	1.93	26.53	720.01	87.03
480	486	Pneumonia	43	14	57	51	238	290	2,720	10,509	13,229	1.21	16.64	5.10	64.00	733.19	232.77
280	285	Anaemia's	266	13	279	165	204	368	7,690	8,659	16,349	0.62	15.87	1.32	28.89	674.70	58.60
260	269	Nutritional Deficiencies	251	19	270	141	293	434	6,608	11,789	18,397	0.56	15.40	1.60	26.31	620.48	68.10
780.6	780.6	Pyrexia of Unknown Origin (PUO)	252	33	286	169	521	690	7,954	22,333	30,287	0.67	15.62	2.42	31.54	669.98	106.08
401	405	Hypertensive Disease	76	16	92	46	162	208	2,266	6,374	8,640	0.60	10.46	2.27	29.69	411.20	94.08
490	493	Asthma (Bronchiectasis, Chronic and Unspecified, Emphysema and Asthma)	56	15	71	61	259	320	3,270	11,913	15,184	1.09	17.86	4.54	58.40	821.61	215.37
084	084	Malaria	6	4	10	9	41	51	495	1,623	2,119	1.50	10.83	5.14	82.57	423.45	215.45
070	070	Viral Hepatitis	9	9	18	12	113	125	685	4,738	5,422	1.34	12.11	6.92	78.98	507.64	301.25
250	250	Diabetes Mellitus	11	4	15	11	57	69	638	2,438	3,076	1.03	14.36	4.54	57.11	609.47	202.79
055	055	Measles	4	2	5	4	17	21	187	655	843	0.99	11.44	4.02	51.04	436.97	163.08
010	018	Tuberculosis	6	5	11	11	65	76	645	2,618	3,263	1.72	13.44	6.79	101.82	541.66	292.20
960	989	Poisonings and Toxic Effects	37	16	53	22	245	267	1,059	10,239	11,298	0.61	14.98	5.02	28.75	626.85	212.49
290	319	Mental Disorders	28	5	32	19	53	71	974	2,252	3,226	0.67	11.69	2.21	35.00	500.51	99.79
710	714	Rheumatic disorders	15	6	22	36	69	105	2,264	2,815	5,080	2.34	10.84	4.83	147.66	444.53	234.44
090	099	Venereal Diseases	7	5	12	17	60	76	1,088	2,271	3,359	2.40	12.33	6.46	155.48	469.88	283.90
410	414	Ischamic Heart Diesease (IHD)	12	6	18	21	77	98	1,288	3,357	4,646	1.72	13.61	5.54	107.36	592.46	262.96
210	229	Neoplasm	11	10	21	15	177	192	907	8,203	9,110	1.36	18.31	9.29	82.49	848.55	440.81
E980	E989	Injury (Injury Undetermined Whether Accidentally or	326	111	437	277	1,836	2,113	14,267	78,613	92,880	0.85	16.54	4.84	43.83	708.23	212.78
574	575.1	Cholelithisis and Cholecystitis	10	8	18	8	154	162	368	6,586	6,953	0.76	20.13	9.16	36.77	859.00	393.58
540	543	Appendicectomy (Appendicitis)	11	11	23	8	286	294	413	12,771	13,184	0.71	25.27	13.08	36.95	1,126.88	585.95
940	949	Burns	13	6	19	12	81	93	632	3,253	3,885	0.92	12.83	4.89	49.88	513.68	204.48
800	848	Fractures, Dislocation	92	30	123	147	670	817	8,498	31,151	39,649	1.59	22.07	6.66	92.03	1,026.95	323.22
600	600	Hyperplasis of Prostate/Hydrocele	5	3	8	4	27	31	212	1,140	1,352	0.84	8.42	3.72	41.08	359.95	162.25
603	603	Hernia	11	10	20	6	158	164	290	6,908	7,198	0.56	16.30	8.11	27.66	714.63	356.95
038	038	(Septicaemia) Abscers	7	6	13	6	48	55	397	1,884	2,281	0.87	8.04	4.09	54.09	314.02	171.06
580	599	Disease of Urinary System	15	9	24	12	116	129	597	4,879	5,476	0.80	13.69	5.39	38.93	573.98	229.75
430	438	Cerebrovascular Disease	8	5	12	4	51	55	126	2,181	2,307	0.50	11.33	4.45	16.04	484.69	187.03
710	739	Disease of the Musculoskeletal System & Connective	20	4	24	12	41	53	640	1,553	2,193	0.64	9.43	2.23	32.83	358.43	92.03
630	630	Antenatal care	95	17	112	142	244	386	6,572	9,958	16,530	1.50	14.34	3.46	69.42	585.76	148.03
650	650	Normal delivery	2	28	30	3	642	646	174	28,478	28,652	2.29	22.67	21.65	115.86	1,005.12	960.41
651	655	Caeserian Section	1	21	22	0	585	585	21	26,229	26,249	0.41	28.28	26.80	17.59	1,269.13	1,202.25
630	639	Abortion (DE&C))/MR	11	19	30	9	514	522	452	22,414	22,867	0.80	26.80	17.41	41.77	1,169.43	762.22
630	676	Direct/Indirect Obsteteric Cause	56	43	99	68	885	952	3,793	39,683	43,476	1.21	20.66	9.65	67.93	926.45	440.63
360	379	Disorder of the Eye & Adnexa	394	16	410	194	221	414	9,535	9,127	18,662	0.49	13.79	1.01	24.22	570.41	45.55
380	389	Diseases of the Ear and Mastoid Process (ENT)	349	5	354	216	56	272	11,207	2,385	13,593	0.62	10.43	0.77	32.16	447.24	38.42
320	359	Dieseas of Nurvous System (Menengitis)	5	3	8	2	22	24	78	801	879	0.48	7.78	3.18	16.12	282.66	114.63
520	529	Disease of Oral Cavity, Salivary Glands & Jaws	649	-	649	443	-	443	19,327	-	19,327	0.68	-	0.68	29.79	-	29.79
		Total	**5,569**	**678**	**6,247**	**3,679**	**11,318**	**14,997**	**177,209**	**488,955**	**666,164**	**0.66**	**16.69**	**2.40**	**31.82**	**720.99**	**106.64**

Looking at the per patient staff time spending patterns in respect of *inpatients*, it is seen that the patients of Caesarean section claim the highest time followed by the patients of Abortion. Inpatients of *Appendectomy* are the third highest staff time consuming inpatients as most of the cases require surgery.

5.14 Staff Time Utilisation District-wise Comparison

Table-5.13 gives District Public Hospital-wise analysis of staff time utilisation and the respective cost of staff time utilisation. What can be seen that the average monthly staff time utilisation in District Public Hospitals altogether has been 14,997.25 hours, which were required for providing secondary health care services for an average monthly number of 6,247 patients. This gives per patient combined staff time utilisation of 2.40 hours. For the monthly sample average of 5,569 numbers of outpatients, the monthly average staff time utilization has been 3,679.47 hours, i.e., a utilisation rate of 0.66 hours (around 40 minutes) per outpatient. The average staff time utilisation in the sample District Public Hospitals for a monthly average of 678 inpatients has been 11,317.78 hours, constituting a combined staff time utilisation time of 16.69 hours for each inpatient.

Although the combined staff time utilisation per patient is 2.40 hours (Table-5.14), it varies slightly among the sample District Public Hospitals. The highest per patient staff time utilisation was registered in both Gazipur and Jessore District Public Hospitals, which was 2.80 hours. The lowest 1.75 hours was registered in Sirajganj District Public Hospital.

For outpatient, the highest combined staff time utilisation was registered in Gazipur District Public Hospital, which was 1 hour, while the lowest was in Sirajganj District Public Hospital, which was 0.47 hours or around 28 minutes. The highest relevant combined staff time utilisation for inpatient was in Jessore District Public Hospital, which was 23.62 hours, while the lowest was in Moulvibazar District Public Hospital, which was 10.70 hours (Table-5.14).

Table-5.13: Staff Time Utilisation and Cost by District Public Hospital

(Average of May 2001 - July 2001 period)

District Public Hospitals	No of Patient			Utilisation of Staff time			Cost of Staff Time Spent			Utilisation of Staff Time Per Patient (per patient staff time)			Cost of Staff Time Spent Per Patient (per patient staff cost)			Variance of Per Patient Staff Time from the Sample Average (n=6)	Variance of Per Patient Staff Cost from the Sample Average (n=6)
	Out patient	In-patient	Total patinet	Out patient	In-patient	Total patinet	Out patient	In-patient	Total	Out patient	In-patient	Total	Out patient	In-patient	Total		
	No.	No.	No.	Hrs.	Hrs.	Hrs.	Tk.	Tk.	Tk.	Hrs	Hrs.	Hrs.	Tk.	Tk.	Tk.		
Comilla	7,570	698	8,268	4,345.68	15,322.25	19,667.93	208,950	738,314	947,264	0.57	21.95	2.38	27.60	1,057.76	114.57	(1%)	7%
Gazipur	3,556	476	4,032	3,538.74	7,758.19	11,296.93	182,460	361,773	544,233	1.00	16.30	2.80	51.31	760.03	134.98	17%	27%
Moulovibazar	2,692	634	3,326	2,253.36	6,781.65	9,035.01	106,871	276,884	383,756	0.84	10.70	2.72	39.70	436.73	115.38	13%	8%
Sirajgonj	8,024	759	8,783	3,752.88	11,632.71	15,385.59	180,341	493,611	673,952	0.47	15.33	1.75	22.48	650.34	76.73	(27%)	(28%)
Jessore	6,555	665	7,220	4,491.65	15,705.54	20,197.19	229,511	621,501	851,012	0.69	23.62	2.80	35.01	934.59	117.87	17%	11%
Patuakhali	5,015	837	5,852	3,694.54	10,706.32	14,400.86	155,124	441,644	596,769	0.74	12.79	2.46	30.93	527.65	101.98	3%	(4%)
Average	**5,569**	**678**	**6,247**	**3,679.47**	**11,317.78**	**14,997.25**	**177,209**	**488,955**	**666,164**	**0.66**	**16.69**	**2.40**	**31.82**	**720.99**	**106.64**		

Table-5.14: ICD-Wise Staff Time Utilization of Services of District Public Hospital: District-wise Analysis

Serial no	ICD Code		Disease	Comilla							Gazipur							Moulvibazar							National Average
				No of Patient			Utilisation of Staff Time Per Patient (per patient staff time)				No of Patient			Utilisation of Staff Time Per Patient (per patient staff time)				No of Patient			Utilisation of Staff Time Per Patient (per patient staff time)				
				Out patient	In-patient	Total patinet	Out patient	In-patient	Total patinet	% higher/(lower) than average	Out patient	In-patient	Total patinet	Out patient	In-patient	Total patinet	% higher/(lower) than average	Out patient	In-patient	Total patinet	Out patient	In-patient	Total patinet	% higher/(lower) than average	
				No.	No.	No.	Hrs.	Hrs.	Hrs.		No.	No.	No.	Hrs.	Hrs.	Hrs.									
1	001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	809	82	891	0.48	17.85	2.08	-26%	174	33	207	1.41	16.11	3.75	33%	256	44	300	0.62	11.45	2.21	-21%	2.81
2	121	127	Intestinal Worm Infestation	665	14	679	0.51	35.95	1.24	-18%	314	9	323	0.63	14.99	1.03	-33%	178	6	184	0.75	16.51	1.27	-17%	1.52
3	680	709	Diesease of Skin and Subcutaneous Tissue	374	11	385	0.63	16.77	1.10	46%	382	4	386	0.55	32.94	0.89	18%	218	5	223	0.75	8.71	0.93	24%	0.75
4	531	533	Ulcer of Stomach and Duodenum	660	25	685	0.49	22.67	1.30	-19%	425	7	432	0.87	30.79	1.35	-16%	135	17	152	0.75	18.46	2.73	70%	1.61
5	460	465	Acute Respiratory Infection	1,042	37	1,079	0.47	16.69	1.02	-73%	26	16	42	2.04	23.36	10.16	173%	163	21	184	0.70	9.93	1.75	-53%	3.72
6	480	486	Pneumonia	29	29	58	0.85	12.30	6.58	28%	64	8	72	1.90	58.79	8.22	59%	31	23	54	0.97	12.53	5.89	14%	5.15
7	280	285	Anaemia's	359	14	373	0.52	21.31	1.30	-44%	145	8	153	1.15	11.95	1.71	-26%	64	5	69	1.61	29.28	3.61	57%	2.30
8	260	269	Nutritional Deficiencies	84	9	93	0.69	23.30	2.88	24%	256	12	268	0.61	16.30	1.31	-43%	123	21	144	0.93	10.94	2.39	3%	2.31
9	780.6	780.6	Pyrexia of Unknown Origin (PUO)	29	37	66	1.90	25.14	14.93	258%	224	14	238	0.89	14.10	1.66	-60%	179	42	221	0.75	10.52	2.61	-38%	4.18
10	401	405	Hypertensive Disease	250	13	263	0.36	15.05	1.08	-68%	62	6	68	0.62	17.21	2.08	-39%	38	12	50	0.69	8.08	2.46	-28%	3.42
11	490	493	Asthma (Bronchiectasis, Chronic and	58	32	90	1.04	20.93	8.11	88%	73	7	80	1.54	23.42	3.45	-20%	45	7	52	0.90	17.64	3.15	-27%	4.32
12	084	084	Malaria	6	5	11	1.04	11.00	5.57	6%	4	3	7	5.98	15.38	10.01	90%	10	7	17	0.99	9.46	4.48	-15%	5.26
13	070	070	Viral Hepatitis	8	8	16	1.59	20.27	10.93	57%	4	10	14	2.26	8.47	6.70	-4%	7	14	21	1.07	10.30	7.23	4%	6.95
14	250	250	Diabetes Mellitus	5	3	8	1.43	19.58	8.24	49%	5	5	10	1.97	10.56	6.27	13%	29	6	35	0.73	18.54	3.78	-32%	5.52
15	055	055	Measles	-	1	1	-	9.42	9.42	39%	12	6	18	0.73	7.59	3.02	-56%	1	1	2	0.99	40.83	20.91	208%	6.79
16	010	018	Tuberculosis	5	4	9	1.47	13.86	6.97	3%	4	2	6	2.76	17.53	7.68	14%	7	8	15	0.97	16.68	9.35	39%	6.75
17	960	989	Poisonings and Toxic Effects	111	33	144	0.45	19.68	4.86	-18%	11	11	22	1.23	18.01	9.62	63%	10	5	15	1.22	12.32	4.92	-16%	5.89
18	290	319	Mental Disorders	8	9	17	0.76	18.04	9.91	165%	2	-	2	4.33	-	4.33	16%	28	5	33	1.01	4.16	1.49	-60%	3.74
19	710	714	Rheumatic disorders	6	3	9	4.13	11.88	6.71	2%	20	13	33	0.68	7.96	3.55	-46%	5	5	10	1.47	13.86	7.66	16%	6.60
20	090	099	Venereal Diseases	9	7	16	1.46	21.84	10.38	87%	7	-	7	1.78	-	1.78	-68%	8	3	11	1.93	5.94	3.03	-46%	5.55
21	410	414	Ischamic Heart Diesease (IHD)	10	5	15	1.15	17.88	6.73	8%	7	12	19	1.80	7.32	5.28	-15%	5	3	8	1.06	22.83	9.22	48%	6.24
22	210	229	Benign Neoplasm	24	13	37	1.29	22.38	8.70	-11%	20	18	38	1.82	12.53	6.89	-30%	5	3	8	1.00	23.20	9.32	-5%	9.80
23	E980	E989	Injury (Injury Undetermined Whether	641	81	722	0.48	22.38	2.94	-50%	378	59	437	0.88	19.62	3.41	-42%	139	167	306	1.34	8.08	5.02	-15%	5.88
24	574	575.1	Cholelithisis and Cholecystitis	9	4	13	0.63	45.09	14.31	44%	3	5	8	1.59	7.90	5.53	-44%	4	6	10	1.17	23.75	14.72	48%	9.95
25	540	543	Appendicectomy (Appendicitis)	13	5	18	0.53	41.01	11.77	-11%	17	10	27	0.46	17.39	6.73	-49%	11	7	18	0.55	33.54	13.38	1%	13.25
26	940	949	Burns	9	1	10	0.91	12.35	2.05	-60%	19	12	31	0.53	10.07	4.22	-18%	13	7	20	0.98	7.45	3.24	-37%	5.14
27	800	848	Fractures, Dislocation	63	34	97	2.22	40.35	15.59	79%	99	28	127	2.02	20.37	6.06	-30%	53	25	78	1.55	13.48	5.37	-38%	8.70
28	600	600	Hyperplasis of Prostate/Hydrocele	6	2	8	1.69	18.17	5.81	67%	-	-	-	-	-	-	-100%	7	3	10	0.41	8.50	2.84	-18%	3.48
29	603	603	Hernia	15	10	25	0.50	14.72	6.19	-36%	20	10	30	0.70	9.93	3.78	-61%	13	8	21	0.41	7.97	3.29	-66%	9.62
30	038	038	(Septicaemia) Abscers	13	3	16	0.99	12.67	3.18	-2%	11	4	15	1.23	9.16	3.34	3%	5	2	7	0.83	7.91	2.85	-12%	3.24
31	580	599	Disease of Urinary System	6	4	10	1.59	20.32	9.08	23%	17	8	25	1.20	20.59	7.40	0%	17	6	23	0.56	5.56	1.86	-75%	7.37
32	430	438	Cerebrovascular Disease	-	5	5	-	10.88	10.88	48%	-	-	-	-	-	-	-100%	21	6	27	0.54	7.69	2.13	-71%	7.35
33	710	739	Disease of the Musculoskeletal System &	11	6	17	1.07	11.79	4.85	101%	25	-	25	0.75	-	0.75	-69%	5	-	5	1.00	-	1.00	-59%	2.42
34	630	630	Antenatal care	130	-	130	1.06	-	3.39	17%	12	-	12	2.31	-	2.31	-21%	118	5	123	0.48	5.83	0.70	-76%	2.91
35	650	650	Normal delivery	1	34	35	4.19	19.27	18.84	-11%	4	30	34	3.30	8.97	8.30	-61%	-	23	23	-	9.13	9.13	-57%	21.24
36	651	655	Caeserian Section	-	23	23	-	25.54	25.54	-10%	-	22	22	-	12.95	12.95	-54%	-	31	31	-	9.69	9.69	-66%	28.41
37	630	639	Abortion (DE&C))/MR	1	13	14	6.75	22.32	21.20	7%	-	16	16	-	9.80	9.80	-51%	-	25	25	-	12.02	12.02	-40%	19.88
38	630	676	Direct/Indirect Obstetric Cause/Abortion	104	63	167	1.53	22.93	9.60	-2%	33	34	67	2.08	23.40	12.90	32%	-	45	45	-	6.40	6.94	-29%	9.79
39	360	379	Disorder of the Eye & Adnexa	510	7	517	0.53	33.12	0.97	-34%	243	20	263	0.62	12.02	1.49	2%	48	4	52	2.59	12.47	3.35	128%	1.46
40	380	389	Diseases of the Ear and Mastoid Process	215	4	219	0.52	8.30	0.66	-39%	136	14	150	1.67	11.10	2.55	135%	86	1	87	1.02	5.83	1.07	-1%	1.09
41	320	359	Dieseas of Nurvous System (Menengitis)	-	5	5	-	9.73	9.73	265%	-	-	-	-	-	-	-100%	-	-	-	-	-	-	-100%	2.67
42	520	529	Disease of Oral Cavity, Salivary Glands &	1,272	-	1,272	0.56	-	0.56	-35%	298	-	298	1.35	-	1.35	56%	607	-	607	0.64	-	0.64	-26%	0.87
			Total	**7,570**	**698**	**8,268**	**0.57**	**21.95**	**2.38**	**-4%**	**3,556**	**476**	**4,032**	**1.00**	**16.30**	**2.80**	**13%**	**2,692**	**634**	**3,326**	**0.84**	**10.70**	**2.72**	**9%**	**2.48**

Table-6 14 (Contd)

Table-5.14: ICD-Wise Staff Time Utilization of Services of District Public Hospital: District-wise Analysis

Serial no	ICD Code		Disease	Sirajganj							Jessore							Patuakhali							National Average
				No of Patient			Utilisation of Staff Time Per Patient (pe patient staff time)				No of Patient			Utilisation of Staff Time Per Patient (per patient staff time)				No of Patient			Utilisation of Staff Time Per Patient (pe patient staff time)				
				Out patient	In-patient	Total patinet	Out patient	In-patient	Total patinet	% higher/(lower) than	Out patient	In-patient	Total patinet	Out patient	In-patient	Total patinet	% higher/(lower)	Out patient	In-patient	Total patinet	Out patient	In-patient	Total patinet	% higher/(lower) than	
				No.	No.	No.	Hrs.	Hrs.	Hrs.		No.	No.	No.	Hrs.	Hrs.	Hrs.									
1	001	009	Intestinal Infectous Diseases (Diarrhoeal	1,370	26	1,396	0.40	14.87	0.67	-76%	236	66	302	0.57	14.64	3.65	30%	146	106	252	1.01	9.38	4.53	61%	2.81
2	121	127	Intestinal Worm Infestation	1,744	3	1,747	0.34	10.42	0.36	-77%	65	34	99	0.71	10.72	4.15	173%	397	18	415	0.79	7.74	1.09	-28%	1.52
3	680	709	Diesease of Skin and Subcutaneous	259	-	259	0.55	-	0.55	-27%	656	-	656	0.42	-	0.42	-44%	719	4	723	0.58	8.50	0.63	-17%	0.75
4	531	533	Ulcer of Stomach and Duodenum	1,351	111	1,462	0.33	7.73	0.89	-44%	351	22	373	0.86	23.95	2.23	39%	651	31	682	0.76	9.16	1.14	-29%	1.61
5	460	465	Acute Respiratory Infection	307	49	356	0.43	12.39	2.07	-44%	218	20	238	0.64	27.48	2.90	-22%	117	36	153	1.00	15.58	4.43	19%	3.72
6	480	486	Pneumonia	61	10	71	0.78	11.22	2.25	-56%	54	5	59	0.91	16.68	2.25	-56%	16	11	27	2.17	10.93	5.74	11%	5.15
7	280	285	Anaemia's	767	20	787	0.39	11.61	0.68	-71%	61	12	73	1.10	25.17	5.06	120%	201	18	219	0.83	8.19	1.44	-37%	2.30
8	260	269	Nutritional Deficiencies	774	20	794	0.36	11.26	0.64	-72%	204	42	246	0.79	17.75	3.69	59%	66	10	76	1.16	15.03	2.98	29%	2.31
9	780.6	780.6	Pyrexia of Unknown Origin (PUO)	475	33	508	0.46	16.53	1.51	-64%	230	14	244	0.54	34.58	2.49	-40%	376	60	436	0.76	8.76	1.86	-55%	4.18
10	401	405	Hypertensive Disease	11	35	46	3.12	7.99	6.83	100%	86	12	98	0.74	14.78	2.45	-28%	11	15	26	2.30	8.03	5.60	64%	3.42
11	490	493	Asthma (Bronchiectasis, Chronic and	57	11	68	0.65	15.85	3.11	-28%	65	10	75	1.02	23.78	4.05	-6%	38	20	58	1.31	9.20	4.03	-7%	4.32
12	084	084	Malaria	7	4	11	1.13	10.56	4.56	-13%	6	2	8	0.64	12.70	3.66	-30%	3	2	5	0.80	6.97	3.27	-38%	5.26
13	070	070	Viral Hepatitis	17	3	20	0.87	14.54	2.92	-58%	7	15	22	1.30	11.92	8.54	23%	9	6	15	1.81	10.79	5.40	-22%	6.95
14	250	250	Diabetes Mellitus	4	3	7	3.69	15.23	8.63	56%	17	3	20	0.60	14.29	2.65	-52%	7	4	11	0.82	8.35	3.56	-36%	5.52
15	055	055	Measles	6	-	6	1.08	-	1.08	-84%	2	-	2	2.23	-	2.23	-67%	1	1	2	1.05	7.17	4.11	-40%	6.79
16	010	018	Tuberculosis	12	4	16	1.88	9.03	3.67	-46%	5	9	14	1.69	11.90	8.25	22%	5	2	7	1.86	11.26	4.55	-33%	6.75
17	960	989	Poisonings and Toxic Effects	13	14	27	0.81	12.21	6.72	14%	71	26	97	0.60	12.16	3.70	-37%	5	9	14	1.23	7.93	5.54	-6%	5.89
18	290	319	Mental Disorders	5	3	8	0.65	9.95	4.14	11%	84	6	90	0.52	11.01	1.22	-67%	40	4	44	0.57	9.10	1.35	-64%	3.74
19	710	714	Rheumatic disorders	6	4	10	14.53	10.66	12.98	97%	15	8	23	2.78	14.24	6.77	2%	40	5	45	1.02	9.37	1.95	-70%	6.60
20	090	099	Venereal Diseases	7	5	12	5.20	8.18	6.44	16%	8	11	19	2.36	11.45	7.62	37%	3	3	6	1.49	6.67	4.08	-27%	5.55
21	410	414	Ischamic Heart Diesease (IHD)	9	6	15	3.00	17.97	8.99	44%	30	5	35	1.74	14.79	3.61	-42%	11	3	14	1.40	11.76	3.62	-42%	6.24
22	210	229	Neoplasm	6	5	11	1.21	13.35	6.73	-31%	7	9	16	0.51	34.56	19.66	101%	4	10	14	1.74	9.81	7.50	-23%	9.80
23	E980	E989	Injury (Injury Undetermined Whether	48	101	149	2.32	16.54	11.96	103%	308	78	386	1.44	29.16	7.04	20%	439	180	619	0.64	15.27	4.89	-17%	5.88
24	574	575.1	Cholelithisis and Cholecystitis	5	17	22	0.57	21.75	16.94	70%	26	4	30	0.65	30.45	4.63	-54%	13	10	23	0.82	7.18	3.58	-64%	9.95
25	540	543	Appendicectomy (Appendicitis)	6	17	23	0.61	31.50	23.44	77%	14	10	24	1.24	28.69	12.68	-4%	6	19	25	1.03	14.84	11.52	-13%	13.25
26	940	949	Burns	2	4	6	0.34	12.36	8.35	63%	22	7	29	0.95	18.69	5.23	2%	11	7	18	1.57	17.44	7.74	51%	5.14
27	800	848	Fractures, Dislocation	8	35	43	4.27	20.36	17.37	100%	146	20	166	1.64	30.43	5.11	-41%	185	40	225	1.01	10.42	2.68	-69%	8.70
28	600	600	Hyperplasis of Prostate/Hydrocele	-	2	2	-	9.11	9.11	162%	-	-	-	-	-	-	-100%	18	12	30	0.72	6.67	3.10	-11%	3.48
29	603	603	Hernia	-	14	14	-	16.92	16.92	76%	8	11	19	0.66	18.45	10.96	14%	7	5	12	0.47	39.08	16.56	72%	9.62
30	038	038	(Septicaemia) Abscers	15	7	22	0.51	7.97	2.88	-11%	-	-	-	-	-	-	-100%	-	20	20	-	7.15	7.15	121%	3.24
31	580	599	Disease of Urinary System	12	8	20	0.71	8.97	4.01	-46%	4	8	12	0.56	28.52	19.20	160%	36	17	53	0.65	6.98	2.68	-64%	7.37
32	430	438	Cerebrovascular Disease	-	2	2	-	9.28	9.28	26%	-	7	7	-	20.01	20.01	172%	26	7	33	0.47	6.67	1.79	-76%	7.35
33	710	739	Disease of the Muscuioskeletal System &	11	4	15	0.48	7.86	2.44	1%	16	6	22	0.66	12.73	3.95	63%	49	10	59	0.47	6.67	1.52	-37%	2.42
34	630	630	Antenatal care	96	78	174	0.42	12.21	5.71	96%	162	11	173	3.50	11.35	4.00	38%	50	8	58	0.47	6.67	1.33	-54%	2.91
35	650	650	Normal delivery	4	27	31	0.80	22.59	19.78	-7%	-	34	34	-	44.96	44.96	112%	-	22	22	-	26.42	26.42	24%	21.24
36	651	655	Caesarian Section	7	14	21	0.41	32.86	22.05	-22%	-	20	20	-	78.57	78.57	177%	-	14	14	-	21.67	21.67	-24%	28.41
37	630	639	Abortion (DE&C))/MR	6	19	25	0.42	54.29	41.36	108%	58	29	87	0.74	34.68	12.05	-39%	-	13	13	-	22.82	22.82	15%	19.88
38	630	676	Direct/Indirect Obsteteric	30	24	54	1.18	23.95	11.30	15%	67	31	98	0.68	27.22	9.08	-7%	101	60	161	0.72	22.69	8.91	-8%	9.78
39	360	379	Disorder of the Eye & Adnexa	162	10	172	0.46	8.95	0.96	-35%	1,323	52	1,375	0.35	13.30	0.84	-42%	76	3	79	0.97	6.67	1.18	-19%	1.46
40	380	389	Diseases of the Ear and Mastoid Process	167	4	171	0.84	10.19	1.06	-2%	1,170	6	1,176	0.47	11.70	0.53	-51%	317	3	320	0.56	9.38	0.64	-41%	1.09
41	320	359	Dieseas of Nurvous System (Menengitis)	3	3	6	0.53	7.89	4.21	58%	-	-	-	-	-	-	-100%	26	9	35	0.47	6.67	2.07	-23%	2.67
42	520	529	Disease of Oral Cavity, Salivary Glands	174	-	174	1.52	-	1.52	75%	753	-	753	0.51	-	0.51	-41%	789	-	789	0.63	-	0.63	-27%	0.87
			Total	**8,024**	**759**	**8,783**	**0.47**	**15.33**	**1.75**	-29%	**6,555**	**665**	**7,220**	**0.69**	**23.62**	**2.80**	13%	**5,015**	**837**	**5,852**	**0.74**	**12.79**	**2.46**	-1%	**2.48**

5.15 Analysis of Staff Time Utilisation by Different Categories of Staff

Figure-5.6 below gives an analysis of staff time spent by different categories of staff members in the District Public Hospitals both in absolute and in percentage terms. For a meaningful analysis, the staff members in the District Public Hospitals have been classified into three broad categories, viz.:

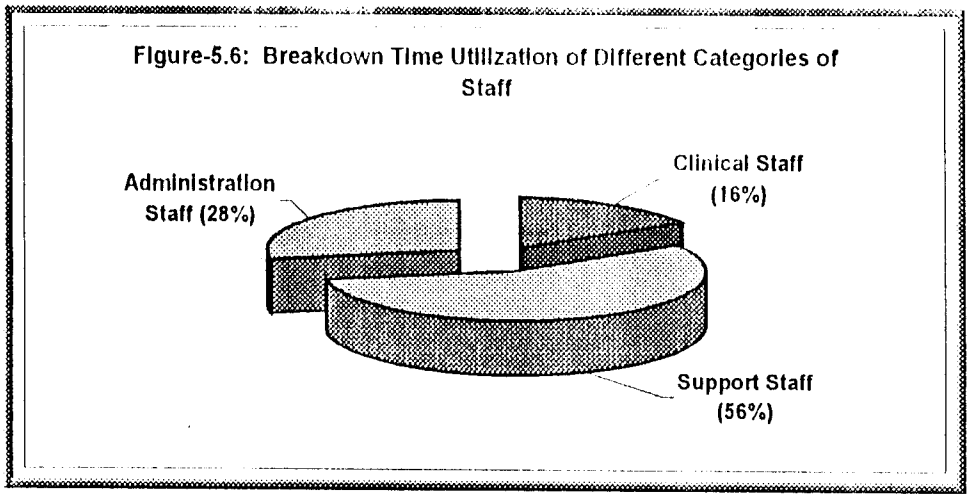
i. Clinical staff members;
ii. Support staff members; and
iii. Administrative staff members.

Clinical staff members, as the name implies, are the specialist doctors, senior and junior consultants and medical officers. Support staff members are meant to support the clinical staff member, and include Deputy Nursing Supervisor/ Matron, Health Educator, Social Welfare Officer, Different medical technologist/ technicians, Staff Nurse, Attendant, Sweeper, Ward Master, Stretcher Bearer, Cook/ Moshalchi, Ward Boy etc. Administrative staff members include Head Asstt-cum-Accountant, Cashier, Office Assistant cum Typist, Store Keeper, Driver, Record Keeper, Jr. Mechanic, Security Guard and so on. The time spent by the Superintendent, given its nature, has been included in the Administration category.

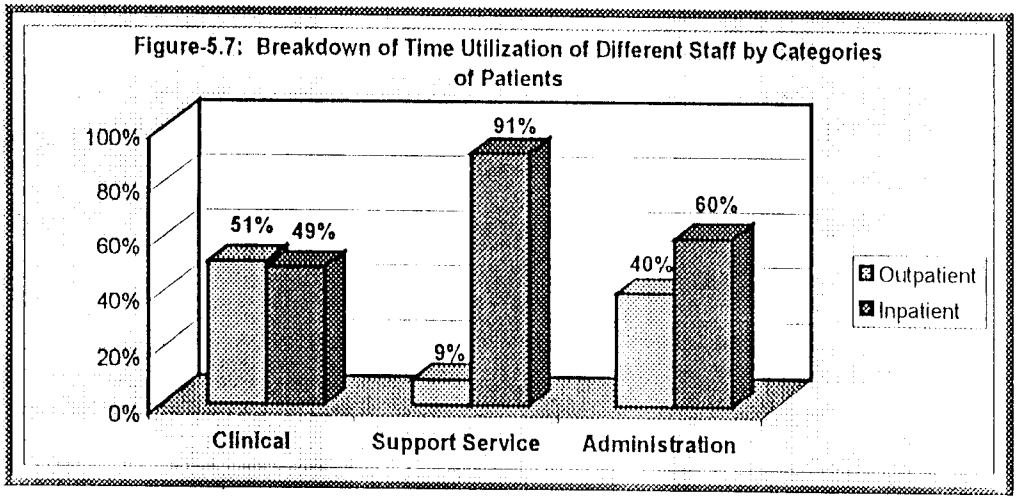
As discussed earlier that the staff time utilisation and the cost were calculated on actual basis taking into account (i) the actual time spent by a staff to provide the service to a patient (except the Administrative and some Support staff members); and (ii) the emoluments paid to the staff. While staff salary paid was taken as a top-down approach, the time utilised by different staff members for each of the categories of patients were calculated following a complete bottom-up approach, as discussed in the methodology. As many as thirty categories of staff members of Clinical and Support services involved in direct health care services were interviewed as well as indirectly observed to determine the amount of time spent by them for patients of each category. Appropriate basis has been applied to allocate the time of Administrative staff and some Support service staff as their time are not directly attributable to the treatment of patients. For instance, 20% of time spent by Superintendent/ Civil Surgeon and other Administrative staff were allocated to outpatients of each category of diseases according to patient incidence, while 80% of their utilized time were allocated to inpatients following the same basis. Support staff members are divided into two sub-categories. Time spent by one sub-category of support staff members are directly attributable to the patient services and so the actual time spent for each classes of patients was inputed for costing. Time of second sub-category of support staff members who are not directly involved in services of patients but their full time is attributable to inpatients and so allocated to inpatients according to patient incidence in each of the ICD categories. Although the actual staff time spent for each category of patients were considered, in a few instances, actual time spent by a person could not be collected due to his/her non-availability and in a very limited instances, his/her unwillingness to cooperate. In those circumstances, usage of such time was inputed depending on the observation in other facilities and also having consulted with medical experts of the team. However, such imputation did not exceed one percent of the total timing. Also notable here that 15% of the total time spent by administrative staff members were set aside as slag time.

It can be seen from the following graph that, out of the total time spent by all the staff members of District Public Hospitals for providing secondary health care services, 16%

constitute the time spent by clinical staff members, and 56% constitutes the time of the Support staff, while the remaining 28% has been the time of the Administrative staff.



The following graph (Figure-5.7) depicts the utilization of each category of staff members' time for the services to inpatients and outpatients. 51% of Clinical staff members' time have been given to the outpatients, while 49% were to the services of inpatients. Although per patient time spent for inpatient was much higher than that of outpatients, given the higher number of outpatients and the fact that Clinical staff members devote most of the time for outpatients, percentage of Clinical staff members' time being given to outpatients



outstripped that for inpatients. It has been found that, 91% of the Support staff members' time are attributable to the services of inpatients, while only 9% of their time have been attributable to the services of outpatients. This is because the time spent by Support staff members are mostly for the inpatients. Only a small percentage of the time of some technicians, pathologist and other staff goes to the services of outpatients. Again, 40% of time being utilised by the Administrative staff members are devoted to the services of outpatients, while the remaining 60% is allocated to the services of inpatients.

5.16 ESP Service Provision at District Public Hospitals

As the ToR envisaged attempt was made to estimate the size and nature of ESP service provision at District Public Hospitals. ESP (Essential Services Package) is a one-stop primary healthcare service provision meant to be delivered through Upazila and below healthcare systems (i.e., UHC, UHFWC and CC). Although District Public Hospitals are the secondary healthcare service providers, to some extant these facilities also provide services categorised under Essential Services Package (ESP). As the District Public Hospitals don't make clear-cut distinctions between the ESP service provisions and the secondary healthcare provisions, segregation of data in line with ESP components was very difficult. Yet analysis to the extent possible has been done to provide an understanding of the state of ESP provision and its cost at the District Public Hospitals.

The Essential Services Package (ESP) comprises of five major components, viz.,

i. Reproductive Health Care;
ii. Child Health Care;
iii. Communicable Diseases Control;
iv. Limited Curative Care;
v. Behavioural Change Communication;

ESP services of District Public Hospitals fall in the first four major components. However, in some District Public Hospitals there is a Health Educator to provide counselling for patients. But as the salary cost of Health Educator is relatively very small it could not provide a significant basis for costing of BCC component at the District Public Hospitals; also many District Public Hospitals do not have this position filled.

The following table provides cost analysis of ESP services at District Public Hospitals.

Table-5.15: Cost Analysis of ESP Service Provision at District Public Hospitals

ESP Item	No of Patient per month			Total Cost per month			Per Patient Cost		
	Out-patient	In-patient	Total patient	Out-patient	In-patient	Total patient	Out-patient	In-patient	Total patient
	No	No	No	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.
Reproductive Health Care	30	13	43	3,278.77	23,692.93	26,971.70	110.37	1,762.65	625.07
Child Health Care	129	12	142	6,813.14	16,522.55	23,335.69	52.73	1,334.80	164.81
Communicable Diseases Control	37	3	39	1,907.90	3,118.84	5,026.75	52.09	1,144.18	127.73
Limited Curative Care	162	18	181	14,207.28	38,372.00	52,579.28	87.51	2,099.99	291.11
	358	47	405	26,207.10	81,706.31	107,913.41	73.23	1,745.18	266.64

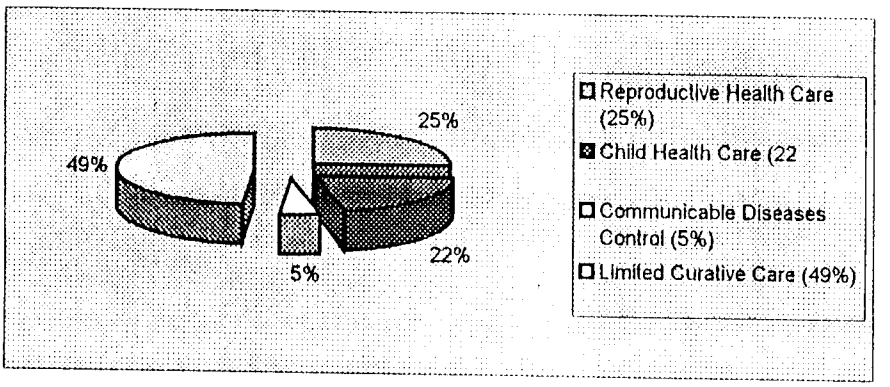
The average monthly cost of ESP services at District Public Hospitals comes to Tk 107,913.

Per patient cost of ESP services at District Public Hospitals is Tk 266.64, with the highest per patient cost being incurred for the patients of Reproductive Health Care which is Tk 625. The lowest per patient is cost incurred for the patients of Communicable Disease Control which is Tk 127.73. The highest cost incurred for the patients of Reproductive Health Care resulted from comparatively high staff time attributable to these patients compounded by the cost of investigations and the MSR used.

The following figure illustrates the percentage of cost attributable to individual component of ESP. It can be seen from the figure that the highest 49% of the total cost of ESP service

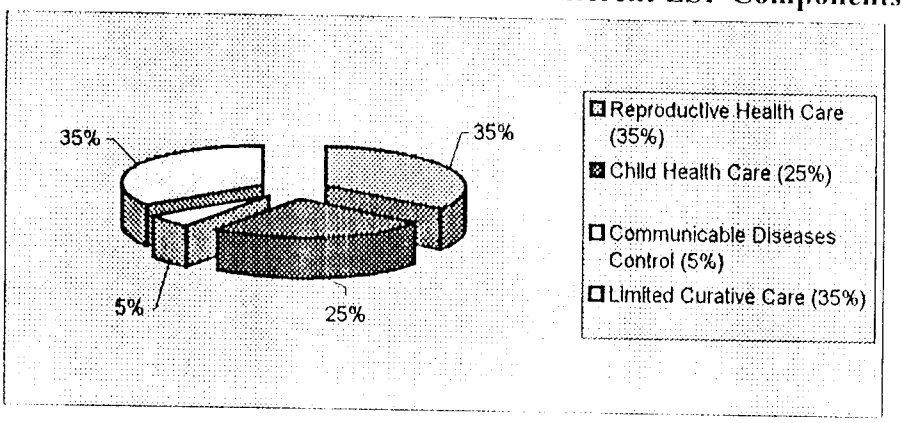
at District Public Hospitals is attributable to the patient of Limited Curative Care. It is worthwhile to mention here that the number of patients of Limited Curative Care constitutes 45% of the total patients receiving ESP services at District Public Hospitals. Higher rate of patients of poisoning, injury, accidents resulted in the higher number of patients of Limited Curative Care. Cost attributable to Reproductive Health Care constitutes the second highest cost accounting for 25% of the total cost of ESP service at District Public Hospitals. On the other end, cost attributable to Communicable Disease Control constitutes the lowest cost (5%) of the total cost of ESP at District Public Hospitals.

Figure-5.8: Percentage of Cost Attributable to the Components of ESP at District Public Hospitals



The following figure depicts the utilisation of staff time for providing ESP services at District Public Hospitals. The highest time is utilised for the patients of Reproductive Health Care and Limited Curative Care each representing 35% of the total staff cost. It is important to note here that although the patients of Reproductive Health Care constitutes only 11% of the total ESP patient, which is 45% in the case of Limited Curative Care, both claim equal amount of time. Child Health Care claims the second highest staff time.

Figure-5.9: Utilisation of Staff Time to Different ESP Components



5.17 Analysis of Government Budget Allocation to District Public Hospitals

An analysis of the government budget allocation to the District Public Hospitals both revenue and capital was done in this sub-section. As can be seen from the following table that out of the average monthly recurrent expenditure of Tk 910,014 as allocated to a

District Public Hospital, Tk 655,534, representing 72% is spent for staff cost while the next highest 23% (Tk 210,428) is spent for Drugs.

Table-5.16: Average Monthly Government Allocation to a District Public Hospital

Items	Average Monthly Number of Patients	Average Monthly Government Allocation	Percentage of Total Cost	Allocation Per Patient
A. Recurrent Expenditure				
Staff Cost		655,534	72%	104.94
Pay of officers		*125,086*	*14%*	*20.02*
Pay of staff		*316,009*	*35%*	*50.59*
Allowance		*214,439*	*24%*	*34.33*
MSR		30,841	3%	4.94
Drugs		210,428	23%	33.68
Other supplies		12,530	1%	2.01
Repair and maintenance		681	0.07%	0.11
Training - Local		-	0%	-
- Foreign		-		-
Total Recurrent Expenditure	**6,247**	**910,014**	**100%**	**145.67**
B. Capital Expenditure				
Construction costs		-	0%	-
Land Tax		995	2%	0.16
Construction costs		-	0%	-
Vehicles		119	0%	0.02
Equipment		25,902	41%	4.15
Furniture		8,872	14%	1.42
Survey and Research		9,789	15%	1.57
Others		17,574	28%	2.81
Total Capital Expenditure	**6,247**	**63,251**	**100%**	**10.12**

Per patient allocation on account of staff cost is Tk 105, while allocation of drugs for each patient is Tk 33.68. Average monthly allocation of Capital Expenditure for a District Public Hospital is Tk 63,251, 41% of which (amounting to Tk 25,902) goes into replacement and/ or addition of new equipment.

It is important to mention here that since the costing of District Public Hospital as done in the study is a full costing it is not directly comparable with government's monthly allocation. The other reasons would include:

Firstly, allocation for staff salary cost in the government budget is more or less fixed irrespective of actual time spent by the staff members whereas in this study staff cost is calculated based on the actual time spent by the staff members. Secondly, no allocation is normally given in the recurrent expenditure on account of furniture and equipment. But as it is done in any costing, an annualised cost of the existing equipment and furniture and fixture was taken into account matching the time period. Thirdly, upkeep and maintenance in most of the District Public Hospitals is done by the PWD, but the study calculated the estimated cost associated with it. Finally, in the study the super-overhead cost has been calculated under full costing of the District Public Hospital services, whereas the government budget for District Public Hospitals does not reflect that.

SECTION 6

6. ANALYSIS OF PRIVATE HOSPITAL SERVICES AND COST

This section deals with the study of District level private hospitals in Bangladesh. The specific objective is to determine the service profile, cost and efficiency corresponding of a sub-sample of private hospitals/ clinics. The analysis will also provide a basis for some relevant comparison between public and private health service provides in the country, especially in terms of types of services, cost range and staff time utilization.

The patient data were collected form six representative sample private hospitals/clinics under five divisions across the country. The sample hospitals/clinics were chosen considering mainly the size and availability of and good access to data. Basic data were collected for three months, May-July 2001. While for trend analysis, data were collected for three years 1998-99, 1999-2000, 2000-2001.

The six private hospitals/clinics taken for the study included–

- Comilla Medical Centre (Pvt.) Ltd., Comilla;
- Khulna Orthopaedic Hospital, Khulna;
- Mukti Clinic (Pvt.) Ltd., Rajshahi;
- Royal Hospital Private Ltd., Dhaka;
- Patuakhali Clinic, Patuakhali; and
- Samarita Hospital, Dhaka'.

For each month, the following data were collected for each category of services:

- Number of patients served;
- Average stay period of patients;
- Total time spent by outside consultant/professors, and their fees;
- Total time required for surgery/operations, and fees;
- Total time spent by full time medical officers/resident doctors, and their salaries and benefits;
- Total time spent by nurses/attendants, and their salaries and benefits;
- Total time spent by ayah/ward boys, and their salaries and benefits;
- Total salaries and benefits of other staff;
- Total cost of medicine for the patients;
- Cabin and other charges; and
- Total amount received from patients.

Data collection instruments mostly identical to those used in public hospitals were used to collect data from the sample private hospitals/ clinics; and the main focus of 'application of ICD in the service profiles' has been maintained. As it is widely known that the private hospitals/clinics have not been developed following any uniformity and standard framework, the data particularly those pertaining to size and so the staffing and cost level have found to be heterogeneous rendering difficult to organizing them conveniently

Nonetheless, a comprehensive analysis has been presented covering the important aspects of the services of private hospitals/ clinics.

6.1 Trend of Patients

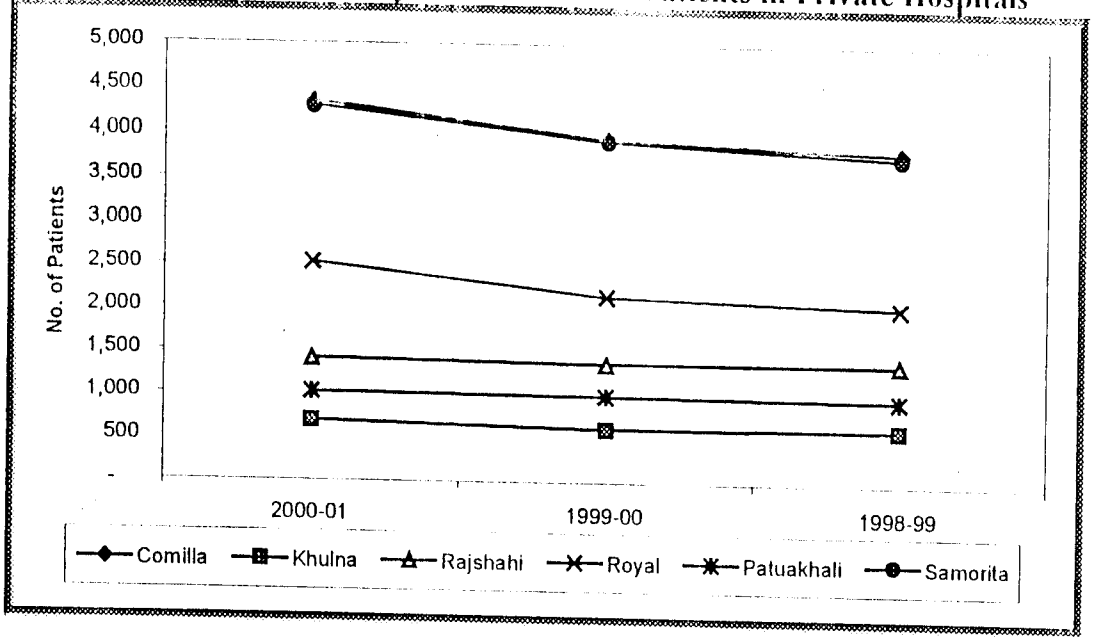
The general view is that private hospitals/clinics are receiving increased number of patients inspite of low level of facilities. The yearly statistics of patients would indicate the trend of patients in private hospitals. Data collected for three (3) consecutive years are presented in Table-7.1, showing 3 years picture of trend of patients of sample private hospitals/ clinics. The average yearly patients in the six sample private hospitals/ clinics was 2,203, where the lowest average was 627 for Khulna and the highest was in Comilla, which was 4,029.

During the period 1999-2001, the total number of patients grew from 12,515 to 14,202 in the private hospitals selected for the study with the average growth being 6.7% per year. The highest growth has been observed in Royal clinic at 17.6 % during 1999-2001, while the lowest for Khulna Clinic at -2.2%. The Table-6.1 and Figure-6.1 below show the percentage growth in the number of patients in the private hospitals/clinics for the period covered in the study.

Table-6.1: Trend of Patients in Private Hospitals

Hospital/Clinic	Year			Average
	2000-01	1999-00	1998-99	
Comilla Medical Centre (Pvt.) Ltd.	4,332 *9.9%*	3,942 *3.4%*	3,812	4,029
Khulna Orthopaedic Hospital	672 *12.4%*	598 *-2.2%*	612	627
Mukti Clinic, Rajshahi	1,396 *3.4%*	1,350 *-0.8%*	1,361	1,369
Royal Hospital (Pvt.) Ltd., Dhaka	2,516 *17.6%*	2,139 *5.3%*	2,032	2,229
Patuakhali Clinic	1,008 *3.1%*	978 *3.2%*	948	978
Samorita Hospital	4,278 *9.1%*	3,922 *4.6%*	3,750	3,983
Total	**2,367** *10%*	**2,155** *3%*	**2,086**	**2,203**

Figure-6.1: Trend Analysis of Number of Patients in Private Hospitals



It has also been observed that, on average, patients stay around 3.0 days in the private hospitals/ clinics (see Table-6.2 below). On average, monthly patients served by these hospitals/ clinics is 202. If the Samorita is excluded, the average number of patients served is 165 per month and average stay period is 3.2.

Table-6.2: Average Monthly Patients and Stay Period in Private Hospitals

Name of the Hospital / Clinic	Patients Served	Average Stay Period
	Number	Days
Comilla Medical Centre (Pvt.) Ltd.	361	4.9
Khulna Orthopaedic Hospital	56	2.7
Mukti Clinic, Rajshahi	116	1.8
Royal Hospital (Pvt.) Ltd., Dhaka	210	4.7
Patuakhali Clinic	84	2.1
Samorita Hospital	382	1.7
Sample Average	**202**	**3.0**
Average (excl. Samorita)	**165**	**3.2**

6.2 Service Profile of Private Hospitals/ Clinics

Table-6.3 provides details of yearly service profiles in terms ICD groups.

Table-6.3: ICD-wise Historical Trend of Patients and Services of Private Hospitals

ICD Code		Service/ Disease Treated	2000-2001		1999-2000		1998-1999		% Increased/ (decreased) over the year	
			Number of Patients	% of Totals	Number of Patients	% of Totals	Number of Patients	% of Totals	1999-2001	1998-2000
001	009	Diarrhoeal diseases	113	4.8%	86	4.0%	71	3.4	31%	21%
121	127	Intestinal worm infestation	40	1.7%	35	1.6%	42	2.0	16%	-17%
680	709	Skin diseases	19	0.8%	12	0.5%	20	1.0	60%	-43%
531	533	Peptic Ulcer	105	4.4%	98	4.5%	101	4.8	7%	-3%
460	465	Acute Respiratory Infection	63	2.6%	62	2.9%	53	2.6	2%	15%
480	486	Pneumonia	65	2.7%	66	3.1%	69	3.3	-2%	-4%
280	285	Anaemia	54	2.3%	59	2.7%	56	2.7	8%	5%
260	269	Deficiency diseases	8	0.3%	11	0.5%	9	0.4	-31%	28%
781	781	PUO	65	2.7%	61	2.8%	54	2.6	6%	13%
401	405	Hypertension	94	4.0%	82	3.8%	73	3.5	15%	13%
490	493	Asthma	67	2.8%	74	3.4%	78	3.7	-9%	5%
084	084	Clinical Malaria	15	0.6%	9	0.4%	22	1.0	57%	-57%
070	070	Hepatitis	44	1.9%	46	2.1%	50	2.4	-4%	-8%
250	250	Diabetes	72	3.0%	63	2.9%	67	3.2	14%	-7%
055	055	Measles	-	-	-	-	-		-	-
010	018	Tuberculosis	11	0.5%	11	0.5%	16	0.8	0.0%	-32%
960	989	Poisoning	11	0.4%	12	0.5%	10	0.5	-10%	17%
290	319	Mental diseases	16	0.7%	18	0.8%	18	0.9	-10%	0%
714	714	Rheumatic disorders	18	0.8%	14	0.6%	19	0.9	27%	-24%
090	099	Venereal diseases	2	0.1%	1	0.1%	1	0.0	50%	60%
410	414	Ischamic Heart Disease (IHD)	21	0.9%	30	1.4%	24	1.2	-29%	25%
210	229	Neoplasm	67	2.8%	71	3.3%	58	2.8	-6%	22%

ICD Code		Service/ Disease Treated	2000-2001		1999-2000		1998-1999		% increased/ (decreased) over the year	
			Number of Patients	% of Totals	Number of Patients	% of Totals	Number of Patients	% of Totals	1999-2001	1998-2000
E980	E989	Injury	140	5.9%	125	5.8%	106	5.1	12%	18%
574	575	Cholisystectomy	161	6.8%	132	6.1%	134	6.4	21%	-2%
540	543	Appendicectomy	139	5.9%	125	5.8%	118	5.7	11%	6%
940	949	Burn	7	0.3%	6	0.3%	6	0.3	8%	0%
800	848	Fractures, Dislocation	142	6.0%	134	6.2%	141	6.8	6%	-5%
600	600	Hyperplasis of Prostate/Hydrocele	-	-	-	-	-		-	-
603	603	Hernia	-	-	-	-	-		-	-
038	038	(Septicaemia) Abscers	-	-	-	-	-		-	-
580	599	Disease of Urinary System	36	1.5%	32	1.5%	29	1.4	13%	10%
430	438	Cerebrovascular Disease	-	-	-	-	-		-	-
710	739	Disease of the Musculoskeletal System & Connective Tissue	71	3.0%	57	2.6%	73	3.5	24%	-21%
650	650	Antenatal care	24	1.0%	28	1.3%	20	1.0	-12%	39%
650	650	Normal delivery	93	3.9%	79	3.6%	67	3.2	18%	17%
651	655	Caeserian Section	103	4.3%	89	4.1%	93	4.4	16%	-4%
630	639	Abortion (DE&C)	69	2.9%	101	4.7%	88	4.2	-32%	15%
630	676	Direct/Indirect Obsteteric Cause/Abortion	194	8.2%	147	6.8%	167	8.0	32%	-12%
360	379	Disorder of the Eye & Adnexa	72	3.0%	51	2.4%	59	2.8	39%	-13%
380	389	Diseases of the Ear and Mastoid Process (ENT)	150	6.3%	129	6.0%	76	3.6	16%	71%
320	359	Diseases of Nurvous System (Menengitis)	-	-	-	-	-		-	-
520	529	Disease of Oral Cavity, Salivary Glands & Jaws	-	-	-	-	-		-	-
			2,367	100%	2,155	100%	2,086	100	10%	3%

Considering the number of patients for different categories during three consecutive years - 1998-1999, 1999-2000, and 2000-2001, it can be observed that the highest patients come with direct/indirect obsteteric causes, fracture/dislocation problem, appendicectomy, cholisystectomy and injury. Some common type of services/ treatments being provided by private hospitals/clinics constitute a substantial portion of total service profile of the sample private hospitals. In other words, only 7 types of services constitute 44% of the activities of the private hospitals. This implies that private hospitals/clinics concentrate on mainly surgery-required services. As it is commonly viewed, the study finding shows that private hospitals don't provide outpatient services, except in a very few cases, where some nominal emergency services are offered. Also, the overall increase in the number of patients of all categories of diseases in the year 2000-01 was 10% over the previous year.

6.3 Average Monthly Patients

Table-6.4 below gives the ICD-wise services and corresponding number of patients in the sample private hospitals/ clinics being served during three consecutive months May, June and July of 2001.

Table-6.4: ICD-wise Monthly Patients and Services in Private Hospitals

Sl No	ICD Code		Service/ Disease Treated	May-01	June-01	July-01	3-Month Average of Total Patient
				Number of Patients	Number of Patients	Number of Patients	
1	001	009	Diarrhoeal diseases	14	10	1	12
2	121	127	Intestinal worm infestation	5	3		4
3	680	709	Skin diseases	3	2		2
4	531	533	Peptic Ulcer	6	7		7
5	460	465	Acute Respiratory Infection	7	5		6
6	480	486	Pneumonia	6	6		6
7	280	285	Anaemia	5	4		4
8	260	269	Deficiency diseases	1	1		1
9	781	781	PUO	6	6		6
10	401	405	Hypertension	9	7		8
11	490	493	Asthma	7	5		7
12	084	084	Clinical Malaria	2	1		2
13	070	070	Hepatitis	5	5		5
14	250	250	Diabetes	6	5		6
15	055	055	Measles	-	-		-
16	010	018	Tuberculosis	2	1		1
17	960	989	Poisoning	2	1		1
18	290	319	Mental diseases	2	2	2	2
19	714	714	Rheumatic disorders	2	2	1	2
20	090	099	Venereal diseases	-	-	-	-
21	410	414	Ischamic Heart Disease (IHD)	3	2	3	2
22	210	229	Neoplasm	8	5	7	
23	E980	E989	Injury	11	11	13	12
24	574	575	Cholisystectomy	15	10	15	13
25	540	543	Appendicectomy	14	10	13	12
26	940	949	Burn	2	1	1	1
27	800	848	Fractures, Dislocation	13	13	12	13
28	600	600	Hyperplasis of Prostate/Hydrocele	-	-	-	-
29	603	603	Hernia	-	-	-	-
30	038	038	(Septicaemia) Abscers	-	-	-	-
31	580	599	Disease of Urinary System	2	3	2	2
32	430	438	Cerebrovascular Disease	-	-	-	-
33	710	739	Disease of the Musculoskeletal System & Connective Tissue	5	6	4	5
34	650	650	Antenatal care	1	1	1	1
35	650	650	Normal delivery	5	5	4	4
36	651	655	Caesarian Section	8	8	8	8
37	630	639	Abortion (DE&C)	7	8	10	8
38	630	676	Direct/Indirect Obst. Cause	15	14	15	15
39	360	379	Disorder of the Eye & Adnexa	5	5	9	6
40	380	389	Diseases of the Ear (ENT)	11	12	14	12
41	320	359	Disease of Nurvous System (Menengitis)	-	-	-	-
42	520	529	Disease of Oral Cavity, Salivary Glands & Jaws	-	-	-	-
			Total	212	186	206	201

6.4 Cost Analysis of Private Hospital Services

Average total cost per patient in the sample private hospitals/ clinics has been calculated with patients of individual ICD groupings. Alongside cost per patient in each of the six sample private hospitals has been calculated. In terms of services or treatment of diseases, every sample private hospital does not have the provision of all the ICD services as considered for the entire sample of six public hospitals. As a matter of fact, private hospitals/ clinics have been found to be able to provide only a limited number of services, while each of them also in a limited way provides services in some different areas, less importantly and occasionally. However, the Table-6.5 provides the per-patient cost in private hospital both for the common ones as well as the other services.

The highest per patient cost in private hospitals has been found for the treatment of burn which is Tk.15,577, of course with variation among the hospitals treating burn patients. Only Samorita in Dhaka and a major private hospital in Comilla admit burn injury patients. Although the cost of treatment would depend on the extent of injury, here the variation in per patient cost between these two private hospitals is unusually high, i.e., Tk.13,842 in Samorita, while Tk.41,615 in Comilla hospital reflecting that there are no norms in changing patients by private hospitals. On the other hand, for a patient of fracture or dislocation, the Comilla private hospital charged Tk. 4,358, whereas the per patient charge of Samorita was Tk.9,266; and being one of the common services of private hospitals data from each of the other sample district private hospitals were available and that show a more or less similar per patient cost of around Tk.2,000.

Some other common services of private hospitals are Appendicectomy, Injury, Caesarian delivery, Abortion, ARI, Pneunomia, Tuberculosis, Hepatitis, etc. Overall, the average per patient cost of Appendicectomy in private hospitals has been found to be Tk.4,582, whereas the lowest per patient cost was Tk.2,210 as found in the Royal Clinic in Dhaka and the highest was Tk.9,028 in Samorita (Pvt.) Hospital in Dhaka. In other four private hospitals/ clinics, such cost was close to each other, i.e., approximately Tk.3,000.

To discuss more on the ICD-wise per patient cost, another important disease can be taken, viz, Tuberculosis, and the average per patient cost has been found to be Tk.6,763, with a variation between Tk.2,500 to Tk.8,500. Among the six sample private hospitals/ clinics, three hospitals have been found to be providing treatment for Tuberculosis.

Again, taking the case of Abortion it has been found that the average per patient cost was Tk.6,529. Here five (5) hospitals/ clinics have been found to provide this service where two private hospitals charged about Tk. 4,800 per case on average and one hospital charged as high as Tk.8,288, while another hospital charged only Tk.1,751 on average.

Table-6.5: ICD-wise Services and Cost in Private Hospital

Sl No	ICD Code		Service/ Disease Treated	Private Hospital/ Clinic						Average Cost Per Patient
				Comilla	Rajshahi	Khulna	Royal	Samorita	Patuakhali	
1	001	009	Diarrhoeal diseases	4,256	3,389	-	2,317	8,917	3,723	5,068.97
2	121	127	Intestinal worm infestation	4,384	-	-	2,296	7,858	3,705	4,396.64
3	680	709	Skin diseases	13,186	-	-	2,347	7,796	-	5,970.54
4	531	533	Peptic Ulcer	5,116	3,121	-	2,077	8,426	4,155	4,532.35
5	460	465	Acute Respiratory Infection	7,004	-	-	2,351	7,747	3,751	5,399.78

Sl No	ICD Code		Service/ Disease Treated	Private Hospital/ Clinic						Average Cost Per Patient
				Comilla	Rajshahi	Khulna	Royal	Samorita	Patuakhali	
6	480	486	Pneumonia	3,971	-	-	2,517	8,558	3,785	4,967.52
7	280	285	Anaemia	5,960	2,460	-	2,126	8,615	-	5,838.89
8	260	269	Deficiency diseases	-	-	-	2,437	-	-	2,436.77
9	781	781	PUO	6,761	2,050	-	2,118	8,078	3,974	4,297.33
10	401	405	Hypertension	4,517	-	-	2,040	9,054	4,532	4,943.50
11	490	493	Asthma	4,751	-	-	2,166	9,043	4,208	5,875.79
12	084	084	Clinical Malaria	7,043	-	-	-	8,912	-	7,816.33
13	070	070	Hepatitis	11,273	-	-	2,234	7,737	4,024	6,072.49
14	250	250	Diabetes	7,028	-	-	2,288	7,630	-	6,268.76
15	055	055	Measles	-	-	-	-	-	-	-
16	010	018	Tuberculosis	8,441	-	-	2,583	7,696	-	6,763.05
17	960	989	Poisoning	-	-	-	2,523	7,526	-	5,233.15
18	290	319	Mental diseases	6,118	-	-	3,896	7,965	-	6,934.52
19	714	714	Rheumatic disorders	-	-	-	4,389	7,684	4,126	7,058.01
20	090	099	Venereal diseases	-	-	-	-	-	-	-
21	410	414	Ischamic Heart Disease (IHD)	6,759	-	-	-	8,081	-	7,660.37
22	210	229	Neoplasm	7,314	2,630	-	-	8,475	4,809	6,494.85
23	E980	E989	Injury	4,186	3,199	2,739	1,928	7,913	-	3,689.21
24	574	575	Cholisystectomy	3,977	2,662	-	2,435	8,721	4,613	4,991.07
25	540	543	Appendicectomy	3,764	2,855	3,492	2,210	9,028	3,828	4,582.01
26	940	949	Burn	41,615	-	-	-	13,842	-	15,577.84
27	800	848	Fractures, Dislocation	4,358	2,619	1,872	2,874	9,266	-	4,267.36
28	600	600	Hyperplasis of Prostate/Hydrocele	-	-	-	-	-	-	-
29	603	603	Hernia	-	-	-	-	-	-	-
30	038	038	(Septicaemia) Abscers	-	-	-	-	-	-	-
31	580	599	Disease of Urinary System	5,760	2,460	2,620	2,683	8,852	-	4,536.65
32	430	438	Cerebrovascular Disease	-	-	-	-	-	-	-
33	710	739	Disease of the Musculoskeletal System & Connective Tissue	-	2,391	-	-	-	-	2,391.24
34	650	650	Antenatal care	-	-	-	-	-	3,780	3,779.62
35	650	650	Normal delivery	3,826	-	-	2,140	-	3,725	3,188.76
36	651	655	Caeserian Section	4,166	2,460	-	2,558	-	4,022	3,761.48
37	630	639	Abortion (DE&C)	4,989	3,240	-	1,751	8,288	4,748	6,529.35
38	630	676	Direct/ Indirect Obsteteric Cause	5,340	2,850	-	2,195	8,546	4,528	6,158.88
39	360	379	Disorder of the Eye & Adnexa	6,660	-	-	-	8,954	4,368	8,462.41
40	380	389	Diseases of the Ear and Mastoid Process (ENT)	4,324	2,806	-	2,274	7,762	4,347	4,210.21
41	320	359	Disease of Nurvous System (Menengitis)	-	-	-	-	-	-	-
42	520	529	Disease of Oral Cavity, Salivary Glands & Jaws	-	-		-	-	-	-
				4859	2894	2,281	2,268	8,535	4,206	5,217.43

From the above table, it can be observed that the most expensive treatment is for burn patients. Another point is that many of the services are not available in the private clinics/hospitals outside of Dhaka.

6.5 Analysis of Private Hospital Services Cost by Elements

Table-6.6: Breakdown of Total Cost of Healthcare Service in Private Hospitals

Name of the Hospital/ Clinic and Patient	Staff Cost	Cost of Medicine	Cost of Investigation	Cabin Charges/ Bed	Cost of Diet	Overhead Cost	Total Cost	Total Cost per patien
	Taka	Taka	Taka	Taka	Taka	Taka	Taka	Taka
Comilla (361)	661,51 38%	197,539 11%	336,620 19%	282,332 16%	215,87 12	60,132 3%	1,754,01 100%	4,859
Khulna (56)	67,53 53%	30,094 24%	2,850 2%	18,613 15%	4,00 3	4,667 4%	127,75 100%	2,281
Rajshahi (116)	96,33 29%	29,559 9%	73,500 44%	42,567 13%	87,00 26	7,686 2%	336,64 100%	2,894
Royal (210)	142,23 30%	99,736 21%	16,667 4%	66,667 14%	135,25 28	15,000 3%	475,55 100%	2,268
Patuakhali (84)	100,00 28%	27,267 8%	100,017 28%	9,532 3%	93,32 26	23,209 7%	353,34 100%	4,206
Samorita (382)	849,03 30%	328,400 10%	287,283 9%	1,494,583 46%	230,81 7	70,383 2%	3,260,50 100%	8,535
Sample Average	**319,44 30%**	**118,766 11%**	**136,156 13%**	**319,049 30%**	**127,71 12**	**30,180 3%**	**1,051,30 100%**	**5,217**
Average (excl Samorita)	**213,523**	**76,839**	**105,931**	**83,942**	**107,08**	**22,139**	**609,463**	**3,685**

The total cost of services of private hospitals has been analyzed in terms of its major elements, viz:

- Staff cost;
- Medicine cost;
- Investigation cost;
- Diet cost; and
- Overhead cost.

The above table (Table-6.6) summarizes the total cost per patient. The average per patient total cost of services of sample private hospitals has been found Tk.5,217, where the highest per patient cost of services was Tk.8,535 in Samorita hospital followed by Tk.4,869 in the sample Comilla private hospital. Samorita hospital being the largest one among the six sample private hospitals the calculation somewhat is biased towards higher cost. It may be appropriate to consider the (29% lower) average per patient total cost without Samorita hospital, in which case it becomes Tk.3,685 as opposed to Tk.5,217 (with Samorita inclusive) as shown above. The average lowest per patient total cost has been Tk.2,268 as found in a relatively small private hospital (20 beds) in the Dhaka city, named Royal. Among the six sample private hospitals three (3) have an average per patient total cost of about Tk.2,500 and two (2) have about Tk.4,500.

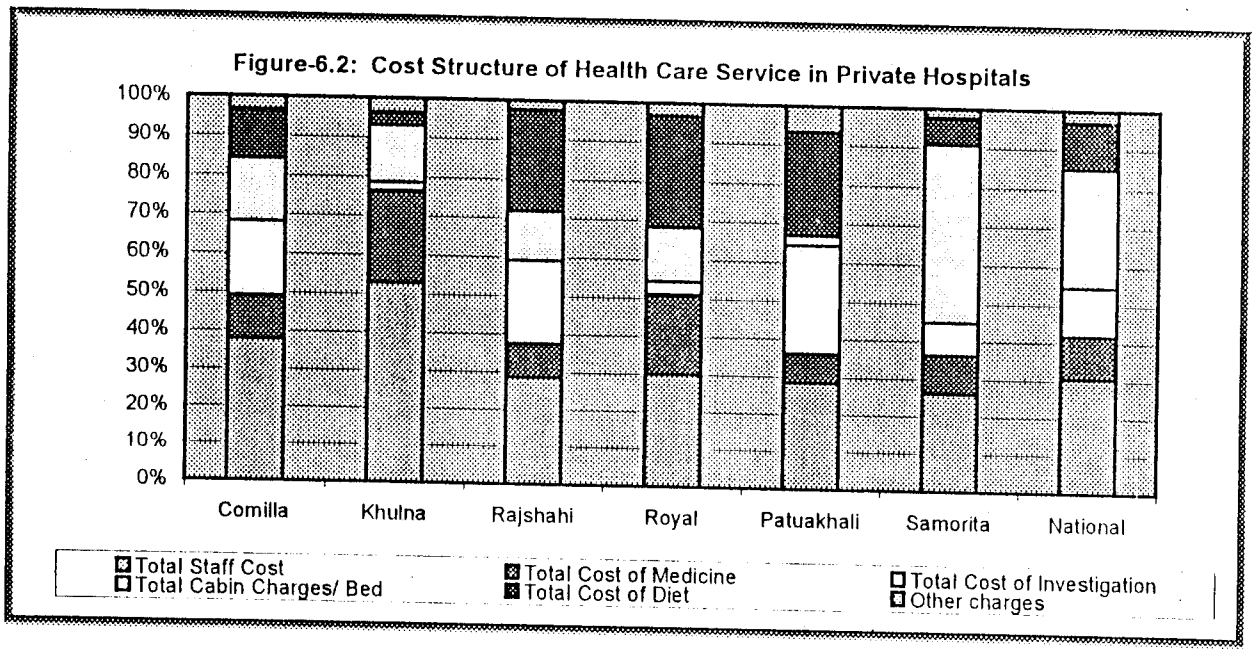
A further analysis of cost in private hospitals by major elements shows that staff cost and cabin/bed charges each account for 30% of the total cost followed by cost of medicine and cost of diet which are 13% and 12% respectively.

Table-6.7 below shows the cost composition of the health care service provided by the private hospitals/clinics in different parts of the country.

Table-6.7: Cost structure of Health Care Service in Private Hospitals

Cost Element	Comilla	Khulna	Rajshahi	Royal	Patuakhali	Samorita	Sample Average	Average (excl Samorita)
	Tk / %	Tk / %	Tk / %	Tk / %	Tk / %	Tk / %	Tk / %	Tk / %
Staff Cost	661,517	67,533	96,333	142,233	100,000	849,037	319,442	213,523
	38%	*53%*	*29%*	*30%*	*28%*	*26%*	*30%*	35%
Cost of Medicine	197,539	30,094	29,559	99,736	27,267	328,400	118,766	76,839
	11%	*24%*	*9%*	*21%*	*8%*	*10%*	*11%*	13%
Cost of Investigation	336,620	2,850	73,500	16,667	100,017	287,283	136,156	105,931
	19%	*2%*	*22%*	*4%*	*28%*	*9%*	*13%*	17%
Cabin Charges/ Bed	282,332	18,613	42,567	66,667	9,532	1,494,583	319,049	83,942
	16%	*15%*	*13%*	*14%*	*3%*	*46%*	*30%*	14%
Cost of Diet	215,875	4,000	87,000	135,250	93,320	230,817	127,710	107,089
	12%	*3%*	*26%*	*28%*	*26%*	*7%*	*12%*	18%
Overhead Cost	60,132	4,667	7,686	15,000	23,209	70,383	30,180	22,139
	3%	*4%*	*2%*	*3%*	*7%*	*2%*	*3%*	4%
Total Cost	**1,754,015**	**127,757**	**336,645**	**475,553**	**353,345**	**3,260,503**	**1,051,303**	**609,463**
	100%	***100%***	***100%***	***100%***	***100%***	***100%***	***100%***	***100%***

As expected, the total cost is highest in Samorita which is Tk 3,260,503. This is a reflection of two components : the number of patients and the amount charged from the patients. On both counts, Samorita is at the top of the list. The composition of the cost indicates that staff costs and cabin charges are the two biggest components of the total cost. Based on the average, each of these two components demands 30% of the total cost. In Khulna, the staff cost component is highest (53%) and in Samorita it is lowest (26%). But Samorita charges highest for cabin, which is 46%. Figure-6.2 below depicts the composition of costs in a graphical format.



6.6 Analysis of Staff Time and Cost in Private Hospital

As it has been found that the staff cost is a major element in the total cost of services of private hospitals, from the efficiency point of view it is important to see how the staff are being utilized in those hospitals. Table-6.8 shows that the overall average number of patients served by a sample private hospital/clinic per month is 202 (165 excluding Samorita). The average stay period varies from 1.7 to 4.9 days, the lowest is for Samorita, and the highest is for Comilla. The average stay period per patient is 3 (3.2 excluding Samorita). It should be noted that the cost of staff and staying at Samorita is one of the highest.

Table-6.8: Staff Time Utilization and Cost in Private Hospitals

Name of the Hospital / Clinic	Patients Served	Average Stay Period	Total Staff Time Spent	Total Staff Time Per Patient	Total Staff Cost	Total Staff Cos per Patient
	No	Days	Hours	Hours	Taka	Taka
Comilla	361	4.9	795	2.2	661,517	1,832
Khulna	56	2.7	134	2.4	67,233	1,201
Rajshahi	116	1.8	302	2.6	96,333	828
Royal	210	4.7	496	2.4	142,233	678
Patuakhali	84	2.1	226	2.7	100,000	1,190
Samorita	382	1.7	1,044	2.7	849,037	2,223
Sample Average	202	3.0	499	2.5	319,392	1,585
Average (excl. Samorita)	165	3.2	390	2.4	213,463	1,291

Table-6.8 also illustrates the comparative picture of staff time spent for patients in the six private hospitals, and the corresponding total cost of staff time utilization. Average monthly cost of staff in a private hospital/clinic is Tk. 319,392, and the average total staff time spent per month is 499 hours.

Regarding time spent per patient, the lowest is 2.2 hour per patients in Comilla, while the overall average is 2.4 hours.

Table-6.9: Total Staff Time Spent per Patient and Variance in Private Hospitals

Name of the Hospital/Clinic	Total Staff Time Per Patient	Variance
	Hours	%
Comilla	2.2	-11%
Khulna	2.4	-4%
Rajshahi	2.6	5%
Royal	2.4	-4%
Patuakhali	2.7	8%
Samorita	2.7	10%
Sample Average	2.5	
Average (excl. Samorita)	2.4	

Samorita and Comilla, two large clinics in the sample, have higher proportion of cost per patient due to above average staff time utilization. This can be seen in the table below. Samorita incurs Tk 2,223 staff costs per patient, which is 40% higher than the national average i.e., Tk 1,585 per patient. If Samorita is excluded, the average staff cost comes to Tk 1,291.

Table-6.10: Total Staff Cost per Patient and Variance in Private Hospital

Name of the Hospital/Clinic	Total Staff Cost per patient	Variance
	Taka	%
Comilla	1,832	16%
Khulna	1,201	-24%
Rajshahi	828	-48%
Royal	678	-57%
Patuakhali	1,190	-25%
Samorita	2,223	40%
Sample Average	1,585	
Average (excl. Samorita)	1,291	

6.7 Staff Cost Analysis by Categories

An in-depth analysis of total and per patient staff cost in each category has been done and a summary of the calculation is presented in Table-6.11 and 6.12 below. On an average, in a private hospital, the total monthly expenditure for outside consultants (those come on call and work as retainers) has been Tk 209,306. On an average, each of the private hospitals/ clinics spends Tk 38,886, Tk 24,082, Tk 15,953 and Tk 31,216 for fulltime medical staff, nurses/attendants, ayas/wardboys and other staff respectively. In terms of percentage these are 12%, 8%, 5% and 10% respectively.

Table-6.11: Breakdown of Total Staff Cost by Category of Staff

Name of the Hospital/ Clinic	Fees of outside consultants		Full Time Medical Officers		Nurses / Attendances		Ayahs/ Wardboys		Other Staff		Total Staff Cost	
	Taka	%	Taka		Taka	%	Taka	%	Taka	%	Taka	%
Comilla	466,983	71%	20,667	3%	34,217	5%	27,317	4%	112,333	17%	661,517	100%
Khulna	30,000	44%	16,000	24%	4,333	6%	7,200	11%	10,000	15%	67,533	100%
Rajshahi	32,000	33%	18,333	19%	20,000	21%	12,000	12%	14,000	15%	96,333	100%
Royal	53,333	37%	25,000	18%	22,750	16%	16,000	11%	25,150	18%	142,233	100%
Patuakhali	28,000	28%	15,000	15%	18,000	18%	21,500	22%	17,500	18%	100,000	100%
Samorita	645,517	76%	138,317	16%	45,190	5%	11,703	1%	8,310	1%	849,037	100%
National Average	209,306	66%	38,886	12%	24,082	8%	15,953	5%	31,216	10%	319,442	100%
Average (excl. Samorita)	122,063		19,000		19,860		16,803		35,797		213,523	

Table-6.12 below shows the average per patient cost and its breakdown. On average, each patient incurs around Tk 580 (66% of total staff cost) for being diagnosed by an outside consultant. It can be seen that the total cost as well as cost per patient on account of outside consultant are the highest in case of Samorita followed by Comilla clinic.

Table-6.12: Breakdown of Per Patient Staff Cost by Category of Staff

Hos/ Clinics	Comilla	Khulna	Rajshahi	Royal	Patuakhali	Samorita	Sample Average	Average (excl. Samorita
	Taka / %	Taka / %	Taka / %	Taka / %	Taka / %	Taka / %	Taka / %	Taka / %
Fees of Outside consultants	1,294	83	89	148	78	1,788	580	338
	71%	44%	33%	37%	28%	76%	66%	57%
Full Time MO	57	44	51	69	42	383	108	53
	3%	24%	19%	18%	15%	16%	12%	9%
Nurses / Attendances	95	12	55	63	50	125	67	55
	5%	6%	21%	16%	18%	5%	8%	9%
Ayahs/ Wardboys	76	20	33	44	60	32	44	47

Hos/ Clinics	Comilla	Khulna	Rajshahi	Royal	Patuakhali	Samorita	Sample Average	Average (excl. Samorita
	Taka / %	Taka / %	Taka / %	Taka / %	Taka / %	Taka / %	Taka / %	Taka / %
	4%	11%	12%	11%	22%	1%	5%	8%
Other Staff	311	28	39	70	48	23	86	99
	17%	15%	15%	18%	18%	1%	10%	17%
Total Staff Cost	1,832	187	267	394	277	2,352	885	591
	100%	100%	100%	100%	100%	100%	100%	100%

The permanent clinical staff of private hospitals account for 12% of the total per patient staff cost, which is Tk.108 per month per patient; and a monthly per patient cost for utilization of nurse comes to Tk.67, i.e., 8% of the monthly per patient total staff cost.

6.8 Analysis of Operation Cost

The study reveals that operation/ surgery has been an important and major service occupying substantial portion of the patient services of private hospitals. Therefore, an extended analysis on the number of operations and costs in private hospitals has been done which shows that a private hospital on average undertakes 72 operations/ surgery in a typical month on which the hospital/ clinic earns an average of Tk.8,32,728.

Table-6.13 below shows the details of number of operations per month and the average charges per operation. As can be seen the highest number of operations as well as the highest cost per operation were in Samorita Hospital. The average cost per operation is Tk.8,674. If Samorita is excluded from the analysis, the charge per operation comes to Tk7,920.

Table-6.13: No. of Operations and Charges per Operation in Private Hospitals

Name of Clinic/Hospital	Number of Operations	Total Charges (Tk.)	Charges per Operation (Tk)
Comilla	176	1,538,240	8,740
Khulna	16	104,800	6,550
Rajshahi	79	562,480	7,120
Royal	47	359,550	7,650
Patuakhali	43	286,200	6,656
Samorita	212	2,145,100	10,118
Sample Average	96	832,728	8,674
Average (excl. Samorita)	72	570,254	7,920

SECTION 7

7. ANALYSIS OF PATIENT SURVEY

7.1 General

This section of the report summarizes the findings of the exit interview of 297 patients of 12 selected district public and private hospitals in Bangladesh. The survey has been carried out focusing on the patient-borne cost and service delivery efficiency of the sample hospitals.

The systematic random sampling of the study universe (public and private district hospitals) led to selection of 12 hospitals covering all the divisions of the country. Among these, 6 were public and 6 were private hospitals. So, from each division, one district level public and one district level private representative hospital were selected for the study.

Based on the size of the hospital as well as availability of patients, a quota sampling method was used to determine the number of interviews to be undertaken at each of the sample hospitals. The following table summarizes sample size of the exit interview.

Table-7.1: Number of Exit Interview Samples at Different Hospitals

Sl. No.	Name of Hospital	Number of exit interview	District	Pvt/Pbl
1	Samarita Hospital Ltd.	15	Dhaka	Private
2	Khulna Orthopaedic Hospital	6	Khulna	Private
3	Mukti Clinic Private Ltd.	13	Rajshahi	Private
4	Patuakhali Clinic	10	Patuakhali	Private
5	Royal Hospital	15	Dhaka	Private
6	Comilla Medical Centre	30	Comilla	Private
7	Comilla Sadar Hospital	41	Comilla	Public
8	Gazipur Sadar Hospital	21	Gazipur	Public
9	Moulvibazar Sadar Hospital	43	Moulvibazar	Public
10	Sirajganj General Hospital	33	Sirajganj	Public
11	Jessore General Hospital	34	Jessore	Public
12	Patuakhali Sadar Hospital	37	Patuakhali	Public

The main instrument used for data collection was a structured questionnaires.

7.2 Socio-Economic Profile of the Patients

The socio-economic status of the 297 exit interview respondents surveyed at the sample various hospitals in different districts has been analyzed in respect of the following criteria:

- Gender
- Income level (monthly)

- Educational qualification
- Occupation

Moreover, following the International Code of Diseases (ICD) groupings, the entire sample of 297 respondents was further categorized considering the major diseases which the majority of the patients were suffering from. So, following are the such 10 categorization:

1. Injury;
2. Pyrexia of Unknown Origin (PUO);
3. Normal Delivery/ Antenatal Care [Pregnancy (Preg.)];
4. Ulcer;
5. Disease of Oral Cavity, Salivary (Teeth);
6. Neoplasm (Tumor);
7. Disease of Urinary System (Kidney);
8. Diarrhea (Diarh.);
9. Pneumonia (Pneu.) and
10. Direct/Indirect Obstetric Cause (EOC).

i. *Gender*

In terms of gender classification, 116 (i.e., 39%) of the 297 patients were male, 98 (i.e., 33%) were female and children comprised the remaining 28%.

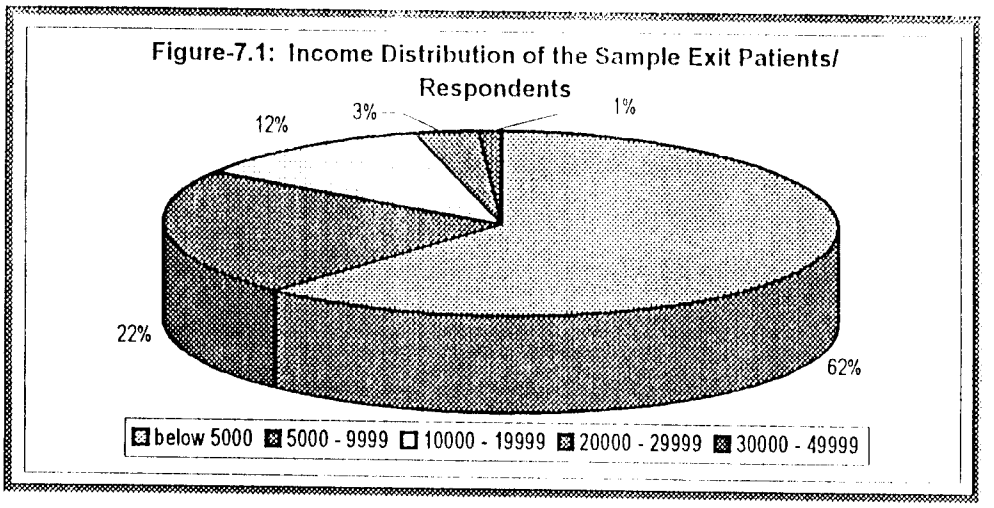
Table-7.2: Distribution of Exit Interview Patients by Gender and 10 Major Diseases

Patients / Disease	Injury		PUO		Preg.		Ulcer		Teeth		Tumor		Kidney		Diarh.		Pneu.		EOC		Total	
Frequency	39		35		32		18		17		11		10		10		9		9		297	100%
Male	26	67%	14	40%	0	0%	10	56%	9	53%	2	18%	4	40%	1	10%	1	10%	0	0%	116	39%
Female	3	8%	8	23%	32	100%	7	39%	2	12%	9	82%	1	10%	6	60%	0	0%	9	100%	98	33%
Child	10	26%	13	37%	0	0%	1	6%	6	35%	0	0%	5	50%	3	30%	8	89%	0	0%	83	28%

Among the male patients, injury occupied the highest number (22.4%) followed by PUO (12.1%). In the case of female patients, pregnancy (32.7%) dominated the tally, while the main diseases which the children suffered from PUO (15.7%), injury (12%) and pneumonia (9.6%).

ii. *Income*

The exit interview respondents' income analysis shows that the majority of them (61%) has a monthly income of less than Tk. 5000. It needs to be mentioned here that the income data are that were taken for analysis included either the patient's or the attendant's income as the case was appropriate. For instance, as for the children, the income of the attendant had to be patients' income. Another important point to be noted is that the income of many female patients interviewed especially the housewives refers to their husbands' income.



Categories in terms of income range include: below Tk. 5000; Tk. 5000–9999; Tk. 10000-19999; Tk. 20000-29999; and Tk. 30000-49999. Nearly 83% have a monthly income less than Tk. 10,000; and so a chunk of the respondents surveyed belong to the lower income group according to the Table-7.3 below.

Table-7.3: Income Distribution of the sample Exit Patients

Income / Pt. category	Injury	PUO	Preg.	Ulcer	Teeth	Tumor	Kidney	Diarh.	Pneu.	EOC	Total	%
Total Frequency	39	35	32	18	17	11	10	10	9	9	297	100%
Did not say	0	1	1	2	0	0	0	0	0	0	4	1%
Below Tk. 5,000	29	23	17	10	11	3	7	7	5	6	181	61%
Tk. 5,000 - Tk. 9,999	7	6	8	2	5	5	1	3	3	3	65	22%
Tk. 10,000 - Tk. 19,999	3	4	5	4	1	3	2	0	1	0	36	12%
Tk. 20,000 - Tk. 29,999	0	0	1	0	0	0	0	0	0	0	9	3%
Tk. 30,000 or above	0	1	0	0	0	0	0	0	0	0	2	1%

It can be seen that more patients of relatively higher income group have taken services involving Pregnancy, PUO and Tumor related problems than the other.

Approximately, 84% of the respondents spend Tk.2,500–5,000 on food, while 85% spend Tk.1,000–1,500 on health. As has been mentioned earlier, about 83% of the respondents have an income of less than Tk.10,000; it can be seen that these people spend as high as about Tk.6,500 on food and health needs. The respondents' expenditure on food and health was found to be increasing with the increase of income. This fact has been depicted in Figure-7.2. The detail breakdown of average expenditure of the respondents belonging to different income groups has been presented in Table-7.4.

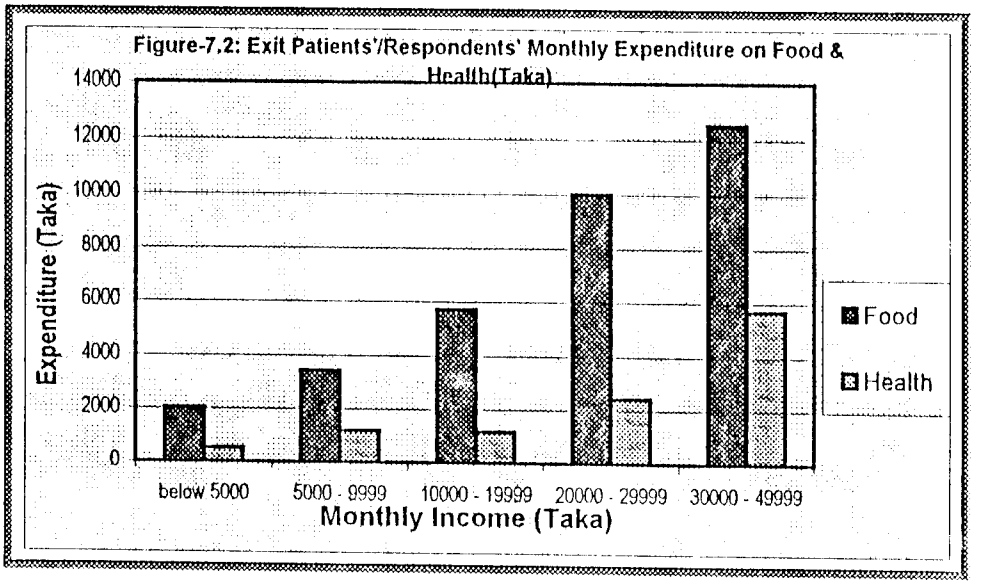


Table-7.4: Breakdown of Average Monthly Expenditure by Food and Health Care Items

Income Level (monthly Tk.)	Food		Health		Doctor		Test		Medicine		Diet		Other		Total
below 5000	2034	64	540	17%	143	5%	82	3%	260	8%	73	2%	23	1%	3155
5000 - 9999	3430	58	1196	20%	261	4%	260	4%	577	10%	91	2%	86	1%	5901
10000 - 19999	5708	65	1175	13%	468	5%	407	5%	664	8%	148	2%	148	2%	8718
20000 - 29999	10000	67	2456	16%	789	5%	456	3%	944	6%	175	1%	125	1%	14945
30000 - 49999	12500	52	5700	24%	2700	11%	1650	7%	1250	5%	200	1%	0	0%	24000

iii. *Educational Background*

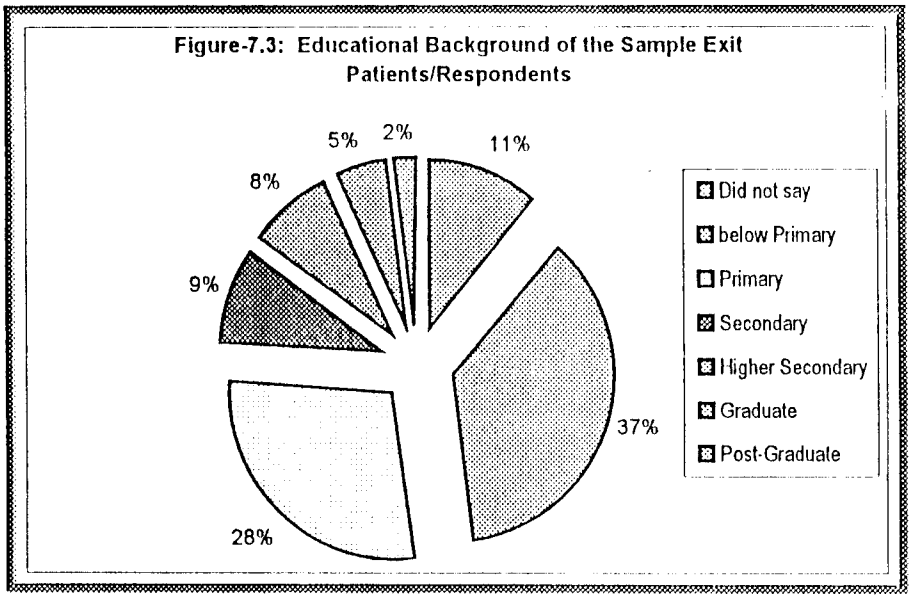
The categories identified in determining the educational status of the respondents surveyed indeed cover all different level of education, i.e.

- Literacy;
- Primary;
- Secondary;
- Higher Secondary;
- Graduate; and
- Post-Graduate.

Table-7.5: Distribution of Exit Interview Patients by Level of Education

Edu. Background	Injury	PUO	Preg.	Ulcer	Teeth	Tumor	Kidney	Diarrhoea	Pneu.	EOC	Total	%
Total Frequency	39	35	32	18	17	11	10	10	9	9	297	100%
Did not say	6	4	4	2	3	1	1	2	1	1	33	11%
Below Primary	19	15	8	7	4	4	6	6	3	1	110	37%
Primary	9	7	15	4	4	3	2	1	3	2	82	28%
Secondary	1	5	1	2	4	0	0	1	0	2	28	9%
Higher Secondary	2	1	1	3	1	1	1	0	1	2	23	8%
Graduate	2	3	1	0	1	0	0	0	1	0	15	5%
Post-Graduate	0	0	0	0	0	2	0	0	0	1	6	2%

The respondents who gave no response were clustered under the 'DID NOT SAY' category. From the survey findings depicted in Table-7.5, it can be stated that a majority of the respondents, i.e., 37% belong to the literacy category, i.e., they either have no formal education or didn't complete primary level. Next, about 28% of the respondents (82 out of 297) have completed their primary education, i.e., up to class V.

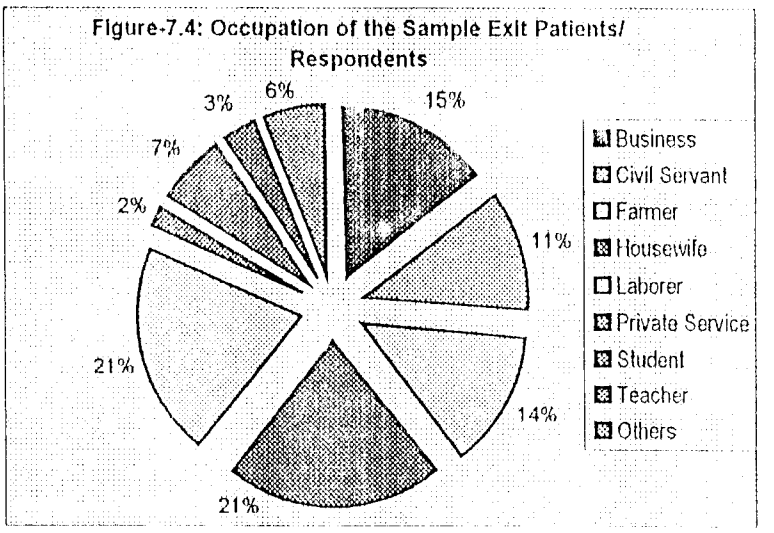


A close analysis of the figures of Table-7.5 reveals that patients from higher education group have shown a relatively high incidence of teeth and EOC related problems, whereas the opposite is true for problems relating to injury, kidney and diarrhoea. This analysis is also illustrated in the figure 7.3.

iv. *Occupation*

From the survey findings, 8 major classes of occupation of the sample patients interviewed have been identified; those that did not warrant significant number of respondents have been clustered under the general category 'OTHERS'. The major occupations identified are:

- Business
- Civil Servant
- Farmer
- Housewife
- Laborer
- Private Service
- Student
- Teacher



From the survey findings, it has been found that majority of the female respondents were housewives; 20% of the total respondents (297) were employed as laborers (field laborers, home servants/maids, rickshaw pullers, carpenters, and so on). Another significant occupation was business. About 13% respondents were farmers.

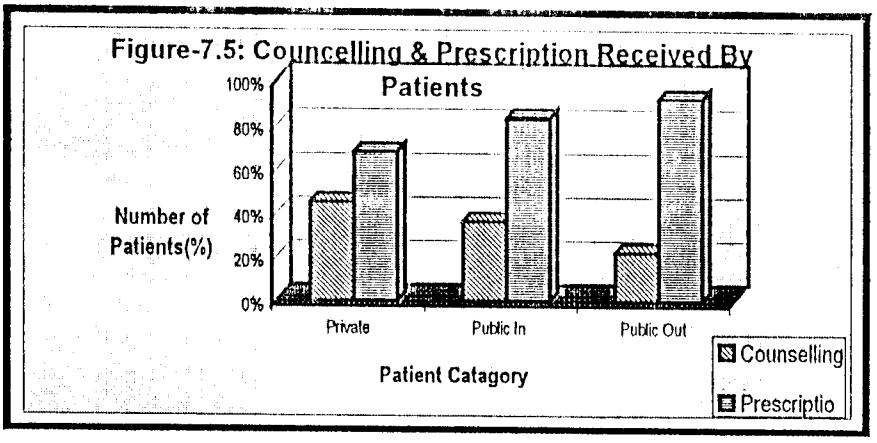
The breakdown of exit interview respondents in terms of their occupation has been presented in Table-7.6. Here, it can be seen that the incidence of injury is highest among the laborer group.

Table-7.6: Occupation Distribution of the Exit Patients/ Respondents

Occupation	Injury	PUO	Preg.	Ulcer	Teeth	Tumor	Kidney	Diarrh.	Pneu.	EOC	Total	%
Total Frequency	39	35	32	18	17	11	10	10	9	9	297	100%
Did not say	0	1	0	0	1	0	2	1	1	0	11	4%
Business	5	9	0	3	4	2	1	1	2	1	43	14%
Civil Servant	2	5	4	1	4	0	0	3	2	2	34	11%
Farmer	9	5	3	6	3	0	3	0	0	0	39	13%
Housewife	2	3	22	3	0	7	1	0	0	4	60	20%
Laborer	14	7	1	1	4	0	3	5	3	0	58	20%
Private Service	1	1	0	0	0	0	0	0	0	1	5	2%
Student	4	0	1	4	0	1	0	0	0	1	20	7%
Teacher	1	0	1	0	0	1	0	0	1	0	8	3%
Others	1	4	0	0	1	0	0	0	0	0	19	6%

7.3 Services Received

The services accessed by the patients in public and private hospitals have been analyzed separately for better understanding. Patients of public hospitals have further been classified as in-patients and outpatients. From the Private hospitals, there were, in all, 88 respondents, and from the public hospitals, there were 209 respondents. Of the 209 respondents in the public hospitals, 84 were in-door patients while the remaining 125 were out-door patients.



It appears that the main types of the patients at the private hospitals belong to injury, PUO, tumor and ulcer groups of ICD. In private clinics, the minimum time delay in attending to patients is 12 minutes, which in case of public hospitals is 14 minutes and 10 minutes for outdoor and indoor patients respectively. On an average, doctors in the private hospitals call in on their indoor patients at least 2–3 times a day; while in the public hospitals, doctors' visit generally does not exceed more than one per day.

Table-7.7: Service Parameters at Private Hospitals

Parameter	Injury	Tumor	Ulcer	Appen.	Preg.	PUO	Bone	Kidney	EOC	Pneu.	Total
Total Frequency	10	9	8	7	7	5	5	4	4	3	88
Period of suffering (Month)	2.84	13.25	2.85	6.46	3.6	7.42	0.75	54.75	0.23	0.83	9.6
Average delay in attending the patient (minutes)	15.62	48	20	26.25	23.33	11.67	45	60		95	35.51
No. of visit by doc/day	2.2	2.78	2.5	2.43	2.71	2.2	2.2	3	2	2.67	2.53
Ave. per patient Time spent by Doctor/ Day (minutes)	6.4	11.44	9.29	7.14	7.6	8.25	11.2	10	6.25	7.33	9.67
Time Spent on first examination	12.78	12.22	9.38	11.43	10.71	17	18	11.25	13	4.67	12.34
Ave. stay period (day)	4.7	6.75	4.5	6.29	4.71	5.8	7	5.67	6.25	3	6.36

On an average, a doctor in the private hospital examines a patient for approximately 10 minutes, while in the public hospitals, such check-up is usually for only 7 minutes each. Moreover, a doctor in the private hospitals for the first examination of a patient spends 13 minutes on an average; whereas in the public hospitals a doctor spends only 5 minutes for a outdoor-patient and nearly 12 minutes for an indoor-patients. Interestingly, for patients suffering from PUO (a major disease criterion), a doctor in the public hospital spends only 3 minutes for the first check-up of an outdoor patient, while about 8 minutes to an indoor patient. On the other hand, a private hospital doctor spends about 17 minutes for the same type of activity.

Table-7.8: Service Parameters for the In-patients at Public Hospitals

Parameter	Preg.	Injury	Ulcer	Kidney	PUO	ARI	EOC	Pneu.	Tumor	Total
Total Frequency	15	9	6	5	5	4	4	3	2	83
Period of suffering (Month)	6.06	0.37	3.21	1.69	0.89	0.76	7.5	0.3	30	6.45
Average delay in attending the patient (minutes)	52.5	25	285	10	30	113.3	112.5	30	15	61.2
No. of visit by doc/day	1.8	1.62	1.5	1.4	1.6	2.5	2	1.67	1	1.75
Ave. per patient Time spent by Doctor/ Day (minutes)	7.79	4.12	4	2.33	6	40	8.75	7	6	7.25
Time spent on first examination (minutes)	12	27.5	8.67	6.2	7.5	7.67	17.5	5	12.5	11.8
Ave. stay period (Day)	8.93	12.8	14.67	9.4	8.6	6.25	5.33	4.67	15.5	9.33

It was found that, on an average, the patients(indoor) surveyed in the private hospitals stayed for less than 5 days with complaints such as injury, ulcer, pneumonia and pregnancy. On the other hand, patients in the public hospitals suffering from the same problems/ diseases stayed for over 10 days.

Table-7.9: Service Parameters for the Out-patients at Public Hospitals

Parameter	PUO	Injury	Teeth	Preg.	Diarr.	Skin	Abscess	ARI	ENT	Ulcer	Total
Total Frequency	25	20	16	9	9	7	5	4	4	4	125
Period of Suffering (Month)	3.59	0.52	6.39	2.98	0.87	2.54	0.81	1.6	19.88	12.58	5.96
Avg Delay in Checking the Patient (in minutes)	20	16.5	26.11	22.5	40.62	36.67	14	26.67	120	13.33	27.1
First Checking time (minutes)	2.96	10.75	2.31	7.44	2.33	2.5	2.6	3.75	4.67	3.25	4.83

On the question of the degree of cure, nearly 65% of the private hospital patients responded positively, while 53% of the public hospital indoor patients responded likewise.

Table-7.10: Services Received by Patients at Private Hospitals

Service	Injury	Tumor	Ulcer	Appen.	Preg.	PUO	Bone	Kidney	EOC	Pneu.	Total
Outcome	10	9	8	7	7	5	5	4	4	3	88
Did not answer	10%	0%	0%	14%	0%	0%	80%	0%	0%	0%	9%
Asked to come again	20%	44%	13%	14%	43%	0%	0%	50%	0%	67%	26%
Fully cured	70%	56%	88%	71%	57%	100%	20%	50%	100%	33%	65%
Referred to higher level	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Number of patients received counseling	30%	56%	25%	71%	57%	100%	80%	75%	100%	67%	45%
Number of patients given prescription	40%	89%	88%	71%	43%	40%	100%	75%	50%	67%	68%
Number of patients required investigation	80%	100%	100%	86%	86%	80%	100%	100%	100%	33%	90%
Number of patients required X-Ray	60%	100%	75%	71%	43%	60%	100%	100%	50%	33%	72%
Number of patients required pathology	60%	100%	100%	86%	57%	80%	80%	100%	100%	33%	82%
Number of patients undergone operation	30%	100%	50%	86%	43%	0%	40%	75%	100%	33%	45%
Number of patients suffered infection	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Regarding patient-counseling by the doctors, 45% of the private hospital patients gave a positive indication, while 36% and 22% of the public hospital indoor and outdoor patients respectively responded affirmative.

Table-7.11: Services Received by In-patients at Public Hospitals

Service	Preg	Injury	Ulcer	Kidney	PUO	ARI	EOC	Pneu.	Tumor	Total
Outcome	15	9	6	5	5	4	4	3	2	83
Did not answer	0%	11%	33%	0%	20%	0%	75%	33%	0%	17%
Asked to come again	33%	0%	17%	20%	20%	75%	0%	0%	50%	27%
Fully cured	67%	78%	50%	80%	60%	25%	25%	67%	50%	53%
Referred to higher level	0%	11%	0%	0%	0%	0%	0%	0%	0%	4%
Number of patients received counseling	33%	22%	33%	0%	40%	50%	50%	33%	100%	36%
Number of patients given prescription	93%	89%	100%	80%	60%	75%	50%	100%	100%	83%
Number of patients required investigation	53%	44%	100%	40%	60%	75%	25%	33%	100%	60%
Number of patients required X-Ray	27%	33%	100%	20%	20%	50%	0%	33%	50%	33%
Number of patients required pathology test	47%	11%	83%	40%	60%	50%	0%	0%	100%	46%
Number of patients undergone operation	60%	11%	17%	0%	0%	0%	100%	0%	100%	28%
Number of patients suffered infection	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

In the private hospitals, 90% of the patients were required different investigations (either pathological or X-Rays), and that applies to 60% of the public indoor patients and only 16% of the public outdoor patients. That means in general it can be said that relatively more patients at the private hospitals undergo operations and investigations.

It should be noted that none of the respondents reported as to having suffered from secondary infection. The number of patients referred to higher level is also significantly low. The reason behind this may be that the patients don't stay at the hospital that long, and it usually takes some time for the patients to recognize the problem of infection.

Table-7.12: Service Received by Out-patients at Public Hospitals

Services	PUO	Injury	Teeth	Preg.	Diarr.	Skin	Abscess	ARI	ENT	Ulcer	Total
	25	20	16	9	9	7	5	4	4	4	125
Counseling received	8%	20%	31%	11%	11%	29%	40%	0%	75%	0%	22%
Patients given prescription	88%	85%	94%	100%	100%	86%	100%	100%	75%	100%	92%
Patients required investigation	12%	10%	6%	44%	11%	14%	20%	100%	100%	0%	16%
Patients required X-Ray	4%	5%	6%	33%	0%	0%	0%	0%	0%	0%	7%
Patients required pathology test	12%	5%	0%	44%	11%	14%	20%	0%	0%	0%	12%

It is also worth mentioning that among all patients those with ulcer, bone and EOC related problems were required maximum investigation and operations.

7.4 Analysis of Patient Borne Costs

The study revealed the differences in the cost incurred by patients of similar disease in different type of facilities as well as cost incurred by patients of different diseases in similar type of facilities. Since the cost incurred by the in-patients and out-patients are not comparable, they have been analyzed separately.

A detailed analysis of the costs incurred by patients of all different types of diseases/problems has been presented in Annex-C. Here, a brief overview of the patient's cost sharing for major ICD groupings has been presented.

7.4.1 Costs Borne by Patients of Public Hospitals

i. *Inpatients' Cost*

From the sample patients' interview it was found that the major health problems for the in-patients of the public hospitals were injury and pregnancy related ones. The number of ARI, EOC, Kidney, PUO and Ulcer related patients was also quite significant. The following table summarizes the major costs incurred by these patients.

Table-7.13: Costs Borne by In-patients of Public Hospitals

	Cost Item and Amount (Tk.)								
Patient	Average Total Cost	Transport & Ambulance	Accompanying Person	Medicine & MSR	Fees	Investigation Charges	Cabin Charges	Operation Charges	Tips and Others
ARI	1011	30	215	619	15	80	52	0	0
	100%	3%	21%	61%	1%	8%	5%	0%	0%
EOC	2842	64	72	2700	6	0	0	0	0
	100%	2%	3%	95%	0%	0%	0%	0%	0%
Injury	2486	57	114	1900	9	400	6	0	0
	100%	2%	5%	76%	0%	16%	0%	0%	0%
Kidney	475	29	146	279	6	0	15	0	0
	100%	6%	31%	59%	1%	0%	3%	0%	0%
Preg.	7286	328	55	5517	11	150	222	0	343
	100%	5%	1%	76%	0%	2%	3%	0%	5%
PUO	1420	90	100	1200	4	0	26	0	0
	100%	6%	7%	85%	0%	0%	2%	0%	0%
Ulcer	9337	50	48	8750	8	450	31	0	0
	100%	1%	1%	94%	0%	5%	0%	0%	0%

Table-7.13 shows that the ulcer patients have to incur the highest average total cost. Bulk of this cost (94%) is related to medicine and MSR. The remaining cost is mainly due to investigation charges. Pregnancy related problem is the second highest expensive problem for the in-patients of public hospitals. Most of this cost (76%) is again related to medicine and MSR. Pregnancy related patients also have to incur significant cost in transportation as well as in tips and other unofficial costs.

For all diseases, Medicine and MSR are the main cost factors. The cost of accompanying person is significant for Kidney and ARI related patients. Investigation charges are relatively higher for injury and ARI patients.

Cabin charges and operation charges are practically absent among the patients interviewed.

ii. *Out-patients' Costs*

The cost structure for the in-patients and out-patients are not the same. Nor are the health problems the patients come with. In case of out-patients, the number of Abscess, Diarrhea, skin disease and teeth related problems are quite common.

Table-7.14: Costs Borne by Out-patients of Public Hospitals

Patient	Cost Item and Amount (Tk.)								
	Average Total Cost	Transport & Ambulance	Accompanying Person	Medicine & MSR	Fees	Investigation Charges	Cabin Charges	Operation Charges	Tips and Others
Abscess	342	27	10	300	5	0	0	0	0
	100%	8%	3%	88%	1%	0%	0%	0%	0%
Diarrhoea	217	20	100	92	5	0	0	0	0
	100%	9%	46%	42%	2%	0%	0%	0%	0%
Injury	354	20	30	220	4	80	0	0	0
	100%	6%	8%	62%	1%	23%	0%	0%	0%
Pregnancy	68	28	36	0	4	0	0	0	0
	100%	41%	53%	0%	6%	0%	0%	0%	0%
PUO	379	18	54	238	5	0	60	0	4
	100%	5%	14%	63%	1%	0%	16%	0%	1%
Skin Disease	103	16	8	70	4	5	0	0	0
	100%	16%	8%	68%	4%	5%	0%	0%	0%
Teeth	123	19	20	80	4	0	0	0	0
	100%	15%	16%	65%	3%	0%	0%	0%	0%

7.4.2 Costs Borne by Patients of Private Hospitals

In general, the private hospitals are more expensive. Cabin cost and operation costs in addition to medicine and MSR cost constitute a significant share of the total cost incurred by patients in private hospitals

Table-7.15: Cost Incurred by the Patients of Private Hospitals

Patient	Cost Item and Amount (Tk.)								
	Average Total Cost	Transport & Ambulance	Accompanying Person	Medicine & MSR	Fees	Investigation Charges	Cabin Charges	Operation Charges	Tips and Others
Appendicitis	5747	50	101	3400	0	403	1793	0	0
	100%	1%	2%	59%	0%	7%	31%	0%	0%
Bone	16616	65	106	15000	0	165	1280	0	0
	100%	0%	1%	90%	0%	1%	8%	0%	0%
Injury	7153	1433	60	3650	0	755	1255	0	0
	100%	20%	1%	51%	0%	11%	18%	0%	0%
Kidney	3599	59	115	0	0	1475	1950	0	0
	100%	2%	3%	0%	0%	41%	54%	0%	0%
PUO	4892	0	148	1121	300	1153	2170	0	0
	100%	0%	3%	23%	6%	24%	44%	0%	0%
Tumor	4907	63	0	0	0	2005	2839	0	0
	100%	1%	0%	0%	0%	41%	58%	0%	0%
Ulcer	5537	246	65	925	0	1095	2006	1200	0
	100%	4%	1%	17%	0%	20%	36%	22%	0%

Patients with bone related problems have to incur the highest cost mainly because of the high expenditure on medicine and MSR. Transportation cost constitutes highest 20% of the total cost in case of the injury patients.

7.4.3 Comparison Between Patient Borne Costs of Public and Private Hospitals

Now a comparison of the main cost items for in-patients of both public and private hospitals can be done in the Table-7.16 below.

Table-7.16: Patient Borne Costs of Public vs Private Hospitals

Patients	Cost item and Amount (Tk.)											
	Average Total Cost		Transport & Ambulance		Accompanying Person		Medicine & MSR		Investigation Charges		Cabin Charges	
	Pbl.	Prvt.	Pbl.	Prvt.	Pbl.	Prvt.	Pbl.	Prvt.	Pbl.	Prvt.	Pbl.	Prvt.
Injury	2486	7153	57	1433	114	60	1900	3650	400	755	6	1255
	100%	100%	2%	20%	5%	1%	76%	51%	16%	11%	0%	18%
Kidney	475	3599	29	59	146	115	279	0	0	1475	15	1950
	100%	100%	6%	2%	31%	3%	59%	0%	0%	41%	3%	54%
PUO	1420	4892	90	0	100	148	1200	1121	0	1153	26	2170
	100%	100%	6%	0%	7%	3%	85%	23%	0%	24%	2%	44%
Ulcer	9337	5537	50	246	48	65	8750	925	450	1095	31	2006
	100%	100%	1%	4%	1%	1%	94%	17%	5%	20%	0%	36%

7.5 Mode of Transport

To better understand the transportation costs, the medium of transport of the patients may be analyzed:

Table-7.17: Mode of Transport, Distance and Time Analysis

Mode of Transport	Public-In			Public-Out			Private		
	No. of Patients	Distance (KM)	Time (min)	No. of Patients	Distance (KM)	Time (min)	No. of Patients	Distance (KM)	Time (min)
Baby Taxi	6	18	78.33	4	6.25	33	8	12	90.62
Bus / Ambu	34	18.56	75.29	24	15.88	64.58	54	63.49	127.2
Rickshaw	24	4	28.75	80	4.91	15.04	23	7.91	28.83
Tempo	12	10.36	60.83	3	9.33	76.67			
Others	7	9.34	107.9	14	8.57	46.93	3	86.67	180

The maximum number of patients has been found to be using rickshaw as the main mode of transport. Bus (including microbus and ambulance) is the second most used transport for coming to the hospital. The figures of average distance of the hospital from the house of the patients indicate that patients living proximity to the hospital use rickshaws most.

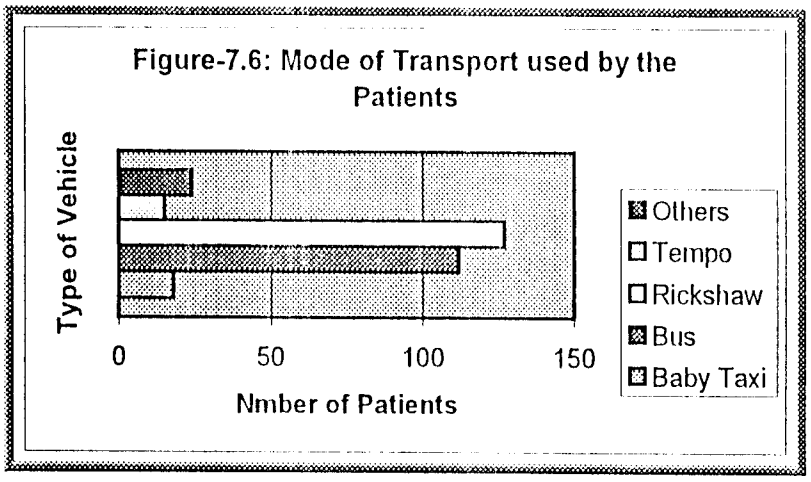


Figure-7.6: Mode of Transport used by the Patients

7.6 Patients' Willingness to Share Cost

This is applicable to patients of Public District Hospitals. In general, the patients were found to be unwilling to share costs of health service. Out of 209 respondents, only 7 were willing to partially share the cost. This is only 2% of the total population. This actually implies that patients would not like to bear further cost than what they now do.

7.7 Quality Assessment

For assessing the quality of services the hospitals studies, two major dimensions have been looked into, viz., services rendered as well as satisfaction provided. As to determining the quality and satisfaction levels, a number of queries were put forward to the respondents and their responses have been analyzed and evaluated.

7.7.1 Patients' Evaluation of the Public and Private Hospital Services

Table-7.18: Patients' Evaluation of the Quality of Service

Evaluation Criterion	Public In-patients	Public Outpatients	Private
Responded yes to the question: "Was there any delay in being attended?"	47%	63%	35%
Evaluated Out-Door Service as "Not Prompt"	–	10%	–
Indoor Care:			
Evaluated Doctors as Irregular	8%		0%
Evaluated Nurses as Irregular	7%		0%
Evaluated Other Services as Irregular	22%		1%
Diet: (Irregular)	6%		0%
Evaluated quantity as "Insufficient"	19%		0%
Evaluated food value as "Not Good"	37%		0%
Cleanliness:			
Observed that bed sheets were not clean	29%		2%
Observed that bed sheets etc. were changed daily	2%		53%
Observed that bed sheets etc. were changed weekly	78%		42%
Observed that toilets were not clean	40%		2%
Overall opinion was "Not Clean"	29%		2%
View on of the Supply of MSR:			
Mostly Supplied	11%	16%	44%
Only a portion supplied	76%	24%	10%
Nothing Supplied	10%	5%	43%
View on the Availability of Doctors when needed:			0%
Always	54%		89%
Sometimes	36%		8%
Not	7%		0%
View on the Availability of Nurses when needed:			
Always	86%		98%
Sometimes	13%		1%
Not	0%		0%

Table-7.18 provides a comprehensive analysis of patients' view and evaluation of the quality of services they received. In general, it came out that the services of private facilities have been relatively better, as perceived by the patients.

As to the question whether there were DELAY in attending the patients, positive responses were as follows:

- 63% of the outdoor patients of public hospitals
- 47% of the indoor patients of public hospitals
- 35% of the patients in private hospitals.

The above indicates that there is a difference in the level of prompt attendance to patients between the private and the public hospitals.

For IN-DOOR CARE condition (applicable to only in-door patients of public hospitals and patients of private hospitals), 8% of public hospital patients claimed that the doctor was irregular, while regarding nurse irregularity their claims constituted about 7%. However, the patients in the private hospitals had no complaints against regularity of either the doctor or the nurse. Regarding irregularity in providing other services, 22% of

the public hospital patients responded positively, while only 1% of the private hospital patients did not have any complaints.

Regarding DIET (applicable to only in-door patients of public hospitals and patients of private hospitals), two aspects, i.e., diet quantity and food value were considered. Again here, only the indoor patients of the public hospitals expressed dissatisfaction. As for overall diet irregularity, 6% responded positively.

On the concern of CLEANLINESS, 29% of the public hospital patients claimed that the hospital was not clean, while only 2% of private hospital patients responded likewise.

With regard to the MSR, 44% of the respondents of private hospitals claimed that it was mostly supplied, while 24% of the outdoor patients and 76% of the indoor patients in the public hospitals said that only a portion was supplied to them.

Concerning the AVAILABILITY of DOCTORS when NEEDED (applicable to only in-door patients of public hospitals and patients of private hospitals), 89% of the private hospital respondents claimed that the doctors were always available, while 54% of the indoor patients of public hospitals responded likewise.

Pertaining to the AVAILABILITY of NURSES when NEEDED (applicable to only in-door patients of public hospitals and patients of private hospitals), 98% of the private hospital respondents said that the doctors were always available, while 86% of the indoor patients of public hospitals responded likewise.

7.7.2 Patients' Satisfaction Level

In order to determine the satisfaction level of the respondents and their view on various aspects of the hospital and its services and staff attitude, patient questions were asked and they responses were as follows:

Table-7.19: Patients' Satisfaction Level

Criterion	No Ans	Excellent	Good	Satisfactory	Bad	Very Bad
Overall	0%	3%	34%	59%	3%	1%
Service Providers Behavior with the Patient	0%	6%	74%	16%	2%	1%
Cooperation Extended by the Support Staff	2%	5%	62%	26%	4%	0%
Cleanliness of the Facility	1%	3%	62%	24%	7%	3%
Availability of Staff Members when Needed	3%	4%	46%	39%	7%	1%
Availability of Medicines	10%	1%	28%	31%	20%	9%

It can be seen that the unavailability of the medicine has been the prime reason for dissatisfaction of the patients. The second in line is the cleanliness of the hospital.

A comparative analysis of the satisfaction level of the patients of public and private hospitals is given Table-7.20.

Table-7.20: Comparison of Patients' Satisfaction of Public vs Private Hospitals

Criterion	No Ans		Excellent		Good		Satisfactory		Bad		Very Bad	
	Pbl.	Pvt.	Pbl.	Pvt.	Pbl.	Pvt.	Pbl.	Pvt.	Pbl.	Pvt.	Pbl.	Pvt.
Overall	0%	1%	1%	6%	23%	58%	68%	35%	5%	0%	2%	0%
Service Providers' Behavior	0%	0%	5%	9%	70%	85%	22%	5%	3%	1%	1%	0%
Cooperation Extended by the Support Staff	2%	0%	4%	9%	54%	82%	34%	7%	5%	2%	0%	0%
Cleanliness of the Facility	1%	0%	0%	9%	54%	81%	31%	8%	10%	2%	4%	0%
Availability of Staf Members when Needed	4%	0%	2%	9%	34%	74%	48%	17%	10%	0%	1%	0%
Availability of Medicines	11%	9%	0%	3%	23%	40%	34%	23%	23%	13%	8%	13%

In general, here too it came that the satisfaction level was higher for private hospitals.

The findings of this report certainly provide good indication about the cost and quality of services of district level public and private hospitals.

SECTION 8

8. ANALYSIS OF PROVIDERS' INTERVIEW

8.1 Introduction

As part of the study a service providers' interview was carried out with representatives of the twelve sample hospitals focusing the services and management of the hospital. For the District Public Hospitals, the superintendent and the RMO were interviewed, while for the private hospitals, the hospital/clinical in-charge was interviewed. A structured questionnaire was used in the interview. The outcome of the interview of the service providers is presented in the following sub-sections.

8.2 Interview Findings

i. *Existing Manpower*

All the respondents from public hospitals have reported that the hospitals do not have the required human resources. In respect of District Public Hospitals, the major shortage has been identified of Doctors: MLSS, Sweeper, and *Aya* are also inadequate in numbers. Some also indicated about the shortage of EMO and medical technicians. Private hospitals, on the other hand, mainly face shortage of specialized doctors and nurse. However, 25% of the private hospitals didn't report any shortage of human resources.

Although half of the respondents from the private hospitals think that the staff members are adequately trained, more than 80% of the respondents from public hospitals don't think so. They have mainly emphasized the need for job oriented and administrative training. Some also reported the need for training in different technical aspects.

ii. *Equipments, Logistics and Drugs*

The respondents from the private hospitals have reported that their respective hospitals have all the required equipment and logistics to give the patients proper service. But the scenario was totally opposite in the public hospitals as almost all respondents talked about shortage/lack of equipments and supplies.

Among investigation equipments X-ray machine and ECG machine are the major items in shortage. The respondents also highlighted the shortage of special investigation equipments (VDRL), ENT and Eye equipments etc. They emphasized the need of extension of the OT facilities and pinpointed the shortage of OT lights, air conditioning system and Oxygen cylinders. Thirty three percent of the public hospitals reported shortage of ambulance as well.

Similar picture was found for drugs. The private hospitals did not report any shortage of drugs; but more than 80% of the respondents from the public hospitals pointed out the shortage of life saving drugs, especially antibiotics. Some of them also reported shortage

of different fluids, aerosol, anti-hypertension, anesthetic and other drugs. Gauge / bandage and office stationary have been reported as the other major items of shortage.

iii. *Hygiene and cleanliness*

Although 75% of the respondents from the private hospitals think that they can maintain appropriate cleanliness and hygiene; two third of the respondents from the public hospitals don't think so. In response to a question relating to the measures taken to maintain cleanliness, all the respondents mentioned the regular routine job done by the sweepers and third class employees.

All the respondents from the public hospitals have identified the excessive number of patients and their attendants as a major reason for not being able to maintain cleanliness. Most of them also identified the shortage of sweepers and shortage of supplies (washing) as the other reasons of poor performance in this regard.

iv. *Types of Service*

The respondents were asked to give the service description of the respective hospitals. Only a few of them gave complete records of last three months, whereas most of the respondents provided arbitrarily estimated figures. The detailed analysis should be based on the records of the hospitals; however, the responses of the service providers are also worth analyzing.

The number of patients handled by the hospitals varied widely depending on the size, location and nature (public/private) of the hospital. So, it would be meaningful to compare the percentage figures for different hospitals.

In case of outpatients, almost all the respondents indicated that all the patents are given prescriptions. In public hospitals, 19% of the out patients are admitted in the hospital and 35% is instructed to come again; whereas in private hospitals, only 5% of the out-patients have been reported to be admitted and almost 50% is requested to come again. About 5% to 10% of the out-patients (both public and private) are referred to higher level.

The scenario for in-patients is more or less similar for the public and private hospitals. About 70% of these patients, who on an average stay for 4-7 days in the hospital, are said to be completely cured. However, one fourth of the in-patients in private hospitals and one third of them in the public hospitals are instructed to come again (on average). About 5% - 15% of the patients are referred to higher facilities. Three to four percent of the patients in the public hospitals get seriously infected while staying there, while this rate is only 1%-2% in the private hospitals. About 1% of the patients die at the facilities. Almost all the respondents have described the referral system of the respective hospital as "Satisfactory".

v. *Efficiency*

Although the respondents from private facilities are satisfied with the efficiency of their operation, one third of the respondents from the public facilities have contradicted mainly because of excessive number of patients and corresponding shortage of staff. The respondents have given advices regarding different aspects of efficient operation.

Regarding the time utilization of doctors and nurses, the respondents of private hospitals mainly focused on increasing their number, whereas the respondents from public hospitals have emphasized on the timely arrival and departure of the doctors which could be improved through proper supervision. For nurses they prescribed job oriented training and close supervision.

To improve the quality of service, the respondents have emphasized on the improvement of logistics and increase of manpower. The training of staff and regular supplies of consumables were the other areas of concern.

The shortage of EMOs has been identified as the main problem in providing emergency services in public hospitals. Supply of medicine and improvement of equipments were the other major concerns in this area. In providing better indoor services increased facilities have been sought for. For better investigation facilities, the respondents from private hospitals mainly emphasized on better equipment, but the respondents from public hospitals have highlighted the need for regular supply of reagent and increasing the number of technicians / pathologists with equal importance.

To ensure better use of the available equipments the respondents, especially those from the public sector put emphasis on regular maintenance and appointment of qualified technicians to operate them. They also suggested to reduce the misuse of drugs and other supplies and suggested increasing the number of sweepers for of cleanliness and hygiene situation. For the improvement of administration and management of the facilities, 50% of the respondents from public hospitals have suggested to appoint full time personnel for this job.

SECTION 9

9. CONCLUDING OBSERVATION

The preceding sections provided the methodology, analytical framework and the analysis of findings in details. The fundamental purpose of this study has been to review and analyze the service of secondary level public and private hospitals in terms of international classification of diseases (ICD) as well as costing of services with particular emphasis on staff time utilization as a primary indicator of efficiency in the delivery of healthcare services.

As it has been analyzed before that, the District Public Hospitals provide about 42 types of major ICD services of which about 12-15 groups of diseases claim a substantial portion of resources of a District Public Hospital, while relatively less number of ICD groups of services make the main list of service profiles of private hospitals. However, the 42 ICD groups are the service profile of both public and private hospitals in Bangladesh. Each of such ICD groups, more practically one which accounts for substantial part of services does include a number of main as well as related diseases. Therefore, the study captured the patients of all the items and sub-items embody in each of the 42 ICD groups comprising the service regime of District hospitals.

Organizing services as per ICD helps costing of services in a more meaningful, representative, and standardized way as it reports the correct number of patients and corresponding resource requirements and the uses.

Those top ICD groups that District Public Hospitals mostly treat are:

- Intestinal Infectious Diseases (diarrhoeal disease)
- Intestinal Work Infection
- Ulcer of Stomach and Duodenum
- Disease of Oral Cavity, Salivary Glands and Jaws
- Diseases of Skin and Subcutaneous Tissue
- Injury
- Disorder of Eye and Adnexa
- Diseases of the Ear and Mastoid Process (ENT disease)
- Pyrexia of Unknown Origin (PUO)
- Acute Respiratory Infection

Similarly, the major services of private hospitals as per ICD groupings are:

- Diarrhoeal Diseases
- Peptic Ulcer

- Injury
- Cholisystectomy
- Appendicectomy
- Direct/Indirect Obsteteric Causes
- Fractures, Dislocation
- Diseases of the Ear and Mastoid Process (ENT)
- Caesarian Section
- Normal Delivery

In providing the services a typical District Public Hospital incurs a monthly per patient cost of Tk.264.97, where the cost breakdown is:

i.	Cost of Staff Time	40%
ii.	Cost of MSR	10%
iii.	Cost of Equipment	28%
iv.	Cost of Furniture & Fixture	1%
v.	Unkeep and Maintenance Cost	4%
vi.	Overhead Cost	11%
vii.	Super-overhead Cost	6%

An outpatient of a District Public Hospital on average claims resources of all types being valued at Tk.76.00, while an inpatient uses-up resources costing Tk.1,816.62. A general comparison between these two types of patients shows that cost for an inpatient is about 96% more than that of an outpatient.

In terms of per patient staff time utilization, the monthly combined staff time utilization per patient is 2.40 hours, in which the principal categories of staff use their time per patient in a month in the following way:

i.	Clinical Staff	16%
ii.	Administrative Staff	28%
iii.	Support Staff	56%

The average monthly per patient cost of services of private hospitals is Tk.5,217 with variation among the individual ICD groupings however. The distribution of cost by major elements is:

- Staff Cost 30%
- Cost of Medicine 11%
- Cost of Investigation 13%
- Cabin Charges/ Bed 30%
- Cost of Diet 12%
- Overhead Cost 3%

Segregation of staff cost provides three major divisions, viz:

- Outside Consultants/ Doctors 65.52%
- In-house full time Doctors 12.17%
- Support Staff 22.31%

Overall, the number of patients served by a District Public Hospital (in a month) is far more than a private hospital offering similar type of services. Again, private hospitals do/ cannot handle patients of all categories as being done by District Public Hospitals.

Although it is understood that the cost of services of public hospitals are less than private hospitals, findings do raise the so called 'classical question' regarding the efficiency of service delivery and patient satisfaction in public hospitals. That is, in some areas the public hospitals are behind the private hospitals. However, it should be noted here that management and performance of private hospitals cannot be conveniently compared with those of public hospitals. The reasons include issues like uneven size, lack of sufficient infrastructure, lack of technical personnel etc. in the private hospitals. Nonetheless, there are areas which warrant a comparison between public and private hospitals.

The critical one is the staff time utilization, where private hospitals have been found to be doing better than District Public Hospitals. As the study results show that, the per patient staff time utilization in the sample private hospitals is 2.5 hours, which in District Public Hospitals is 2.40 hours. In terms of staff cost private hospitals incur much higher than that of public hospitals, i.e., about 600% of the public hospital's staff cost. As has been found that private hospitals like to offer services in a few diseases which often require surgery.

Considering the study results the inference is that there a number of rooms for improvements of services and efficiency of both public and private hospitals. The main concerns can be outlined in the following sub-sections.

For District Public Hospital, the important areas that warrant attention for improvement include:

- Allocation of activities/ job among the staff in a more scientific way
- Better scheduling of staff time
- Efficient utilization of staff time
- Planning and programming of resources particularly MSR
- Delegation of financial power
- Maintenance of equipment and other instruments
- Keeping records and information of the patients.

In respect of private hospitals, the most important concern is indeed the cost or charge for the patient. Also, other importantly areas where specific policy direction is necessary include:

- Availability of adequate facilities
- Availability of full time doctors and nurses

- Compliance with rules/ regulations regarding the delivery of services as well as organizing the hospital activities.

In the absence of clear-cut guidelines, private hospital are being established with little attention to the requirement of sound framework and physical facilities. Most important one is the 'charge' of private hospitals. The study results clearly show that charges taken by private hospitals have no norms or benchmark and so varies very widely from one hospital/ clinic to the other whereas both the private hospitals provide almost same degree and quality of services to the patients. As an illustration, the charges for appendicectomy in the private hospitals/ clinics range from Tk.2,210 to Tk.9,028, while the problem or complexity remains approximately of same degree in all cases.

Finally, the other important areas of improvement for both private and public hospitals may be:

- patient handling;
- training of all categories of staff;
- organizing services according to ICD; and
- developing comprehensive data base and record keeping system.

There are many highly skilled, dedicated people working at the District Hospitals to improve the health of their communities. It also appears that, unfortunately, the system can also misuse its resources and squander potential. Poorly structures, badly led, inefficiently managed and inadequately funded health systems can do more harm than good.

The study findings in general reveals that District Public Hospitals are falling short of their potential, and most are making inadequate efforts in terms of responsiveness and efficiency. Some if not most physicians of the District Public Hospitals, for example, work simultaneously for the government and in private practice. This hampers the regular services of the public hospitals and it like ever before remains an issue to be addressed more seriously through a pragmatic policy implementation. The study results provide a base to assist policy makers efforts to improve the performance of the secondary level health facilities in the country.

It has been revealed that there does not exist sufficient and coherent policy and regulatory framework towards the private sector. So, there are major steps to be taken in recognizing and communicating with the different groups of private health service providers, the better to influence and regulate them. It needs to be recognized that the private sector has the potential to play a positive role in improving the performance of the country's health system. But for this to happen, governments must fulfil the core public function of stewardship. Supporting mechanisms – clinical protocols, registration, training, licensing and accreditation processes – need to be incorporated in the policy and/or brought up to date and used.

To move towards higher quality care, more and better information is commonly required on existing provision, on the interventions offered and on major constraints on service implementation. An understanding of service profile and classification and resource utilization patterns is also needed, so that policy-makers know the array of provision as well as where it is growing. Overall, policy makers have too little information on financial

flows and the generation of synergy of human and material resources. To rectify this, national heath accounts (NHAs) should be calculated and used. Health systems have three fundamental objectives. These are:

- improving the health of the population they serve;
- responding to people's expectations;
- providing financial protection against the costs of ill-health.

How much can be accomplished with currently available resources – people, buildings, equipment and knowledge – depends greatly on the pragmatic policy and management framework for the District Hospitals. In terms of performance analysis, health outcomes have often been assessed in relation to inputs. This approach indicates what these inputs actually produce, but it tells little about the health system's potential –what it could do if it used the same level of resources but in different combinations.

So, to assess relative performance requires a scale, one end of which establishes an upper limit or "frontier", corresponding to the most that could be expected of a hospital which represents the level of attainment if might achieve. At the other extreme, a lower boundary needs to be defined for the least that could be demanded of the hospital. With this scale it is possible to see how much of this potential has been realized.

Annex-A

ICD-wise Historical Trend of Patients and Services of District Public Hospitals

(n = 6 hospitals)

ICD (Code Range)		DISEASE	2000-2001 Yearly Average Patient			1999-2000 Yearly Average Patient			1998-1999 Yearly Average Patient			1998 - 2000 Average Yearly Patient					
			Out patient	In patient	Total	Out patient	In patient	Total	Out patient	In patient	Total	Out patient (No)	Out patient (%)	In patient (No)	In patient (%)	Total (No)	Total (%)
001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	5,582	619	6,201	5,140	652	5,792	4,672	807	5,479	5,131	7.4%	693	10.9%	5,824	7.7%
121	127	Intestinal Worm Infestation	6,292	72	6,364	5,632	47	5,679	6,608	78	6,686	6,177	9.0%	66	1.0%	6,243	8.3%
680	709	Diesease of Skin and Subcutaneous Tissue	4,422	26	4,448	3,796	18	3,814	4,282	50	4,332	4,166	6.0%	32	0.5%	4,198	5.6%
531	533	Ulcer of Stomach and Duodenum	6,022	266	6,288	5,710	261	5,971	5,525	270	5,795	5,752	8.3%	266	4.2%	6,018	8.0%
460	465	Acute Respiratory Infection	3,980	612	4,592	3,445	539	3,984	4,807	661	5,467	4,077	5.9%	604	9.5%	4,681	6.2%
480	486	Pneumonia	11	19	29	13	20	33	13	20	33	12	0.0%	20	0.3%	32	0.0%
280	285	Anaemia's	2,972	97	3,070	3,275	84	3,358	3,260	134	3,394	3,169	4.6%	105	1.6%	3,274	4.3%
260	269	Deficiency Disease	2,495	72	2,566	2,363	62	2,426	2,427	68	2,495	2,428	3.5%	67	1.1%	2,496	3.3%
780.6	780.6	Pyrexia of Unknown Origin (PUO)	3,057	322	3,378	2,906	270	3,176	2,779	367	3,146	2,914	4.2%	320	5.0%	3,233	4.3%
401	405	Hypertensive Disease	729	98	828	1,033	86	1,119	892	90	982	885	1.3%	91	1.4%	976	1.3%
490	493	Asthma (Bronchiectasis, Chronic and Unspecified, Emphysema and Asthma)	678	171	849	936	156	1,092	390	313	703	668	1.0%	213	3.3%	881	1.2%
084	084	Malaria	-	-	-	-	0	0	-	3	3	-	0.0%	1	0.0%	1	0.0%
070	070	Viral Hepatitis	87	56	143	125	64	188	155	64	219	122	0.2%	61	1.0%	183	0.2%
250	250	Diabetes Mellitus	102	21	123	74	14	88	53	12	65	76	0.1%	15	0.2%	92	0.1%
055	055	Measles	2	1	4	3	5	9	1	2	3	2	0.0%	3	0.0%	5	0.0%
010	018	Tuberculosis	37	71	108	23	60	82	18	76	94	26	0.0%	69	1.1%	95	0.1%
960	989	Poisonings and Toxic Effects	327	174	500	312	145	457	245	170	414	294	0.4%	163	2.6%	457	0.6%
290	319	Mental Disorders	236	34	269	203	23	226	211	23	233	217	0.3%	26	0.4%	243	0.3%
210	229	Neoplasm	16	-	16	15	-	15	14	-	14	15	0.0%	-	0.0%	15	0.0%
E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)	5,043	1,260	6,302	5,089	1,140	6,229	5,170	1,047	6,217	5,101	7.4%	1,149	18.0%	6,249	8.3%
038	038	(Septicaemia) Neonetal Tetenus	12	16	28	9	16	25	5	15	20	9	0.0%	16	0.2%	24	0.0%
		Antenatal care	2,528	643	3,171	2,403	517	2,920	2,243	441	2,685	2,391	3.5%	534	8.4%	2,925	3.9%
650	650	Normal delivery	-	311	311	-	273	273	-	221	221	-	0.0%	268	4.2%	268	0.4%
630	676	Direct/Indirect Obsteteric Cause/Abortion	186	59	245	173	46	219	163	40	203	174	0.3%	49	0.8%	222	0.3%
360	379	Disorder of the Eye & Adnexa	4,534	144	4,678	3,920	139	4,060	4,019	142	4,160	4,158	6.0%	142	2.2%	4,299	5.7%
380	389	Diseases of the Ear and Mastoid Process (ENT)	3,239	62	3,301	2,487	25	2,511	2,599	11	2,610	2,775	4.0%	32	0.5%	2,807	3.7%
520	529	Disease of Oral Cavity, Salivary Glands & Jaws	8,268	-	8,268	7,705	2	7,707	7,361	-	7,361	7,778	11.3%	1	0.0%	7,779	10.3%
		Other Diseases	11,560	1,226	12,786	10,031	1,290	1,321	9,864	1,588	11,452	10,485	15.2%	1,368	21.4%	11,853	15.7%
		Total	72,418	6,488	78,906	66,821	5,984	72,806	67,780	6,740	74,520	69,003		6,380		75,383	

Source: Hospital Disease Profile and Consultant calculation

Annex-B

ICD-wise Patients and Services of Samle District Public Hospital: Comilla

(May 2001 to July 2001)

ICD Code No Range		DISEASE	Averege			May-01			June-01			July-01		
			No of patients		Average stay period	No of patients		Average stay period	No of patients		Average stay period	No of patients		Average stay period
			Out patient	In patient		Out patient	In patient		Out patient	In patient		Out patient	In patient	
001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	809	82	2	917	99	2	914	80	2	597	67	2
121	127	Intestinal Worm Infestation	665	14	2	522	11	2	523	14	2	949	16	2
680	709	Diesease of Skin and Subcutaneous Tissue	374	11	2	408	10	2	238	12	2	476	11	2
531	533	Ulcer of Stomach and Duodenum	660	25	7	659	25	6	656	34	7	665	15	7
460	465	Acute Respiratory Infection	1,042	37	5	964	51	4	965	43	5	1,196	18	5
480	486	Pneumonia	29	29	7	33	36	7	26	24	7	27	26	7
280	285	Anaemia's	359	14	2	275	15	2	272	13	2	530	14	2
260	269	Nutritional Deficiencies	84	9	3	78	10	3	90	8	3	85	9	3
780.6	780.6	Pyrexia of Unknown Origin (PUO)	29	37	3	30	42	3	28	35	3	28	35	3
401	405	Hypertensive Disease	250	13	3	131	15	3	129	10	3	489	15	3
490	493	Asthma (Bronchiectasis, Chronic and Unspecified, Emphysema and Asthma)	58	32	7	50	23	7	68	31	6	55	43	7
084	084	Malaria	6	5	5	6	6	5	6	4	5	7	4	5
070	070	Viral Hepatitis	8	8	2	9	4	2	7	9	2	8	12	2
250	250	Diabetes Mellitus	5	3	4	4	1	4	5	1	5	6	7	4
055	055	Measles	-	1	4		1	4			4		1	4
010	018	Tuberculosis	5	4	5	6	5	5	5	2	5	4	5	5
960	989	Poisonings and Toxic Effects	111	33	2	138	79	2	140	8	2	56	11	2
290	319	Mental Disorders	8	9	1	7	8	1	8	9	[illegible]	8	10	1
714	714	Rheumatic disorders	6	3	4	5	3	4	6	2	5	7	3	4
090	099	Venereal Diseases	9	7	4	10	10	4	8	4	4	8	7	4
410	414	Ischamic Heart Diesease (IHD)	10	5	4	5	5	4	10	4	4	15	5	4
210	229	Neoplasm	24	13	5	32	11	5	22	15	5	19	12	5
E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)	641	81	7	571	92	7	498	58	8	854	93	7
574	575.1	Cholelithisis and Cholecystitis	9	4	5	12	5	5	8	4	5	6	4	5
540	543	Appendicectomy (Appendicitis)	13	5	5	13	4	5	9	4	4	18	8	5
94[illegible]	949	Burns	9	1	4	9	2	4	13	1	4	6		4
800	848	Fractures, Dislocation	63	34	3	56	30	3	58	37	3	74	34	3
600	600	Hyperplasis of Prostate/Hydrocele	6	2	3	9	4	4	5	1	3	3	1	3
603	603	Hernia	15	10	2	12	8	2	7	8	1	27	13	2
038	038	(Septicaemia) Abscers	13	3	2	13	3	2	12	3	2	15	2	2
580	599	Disease of Urinary System	6	4	5	4	4	5	7	4	5	7	3	5
430	438	Cerebrovascular Disease	-	5	5		5	5		5	6		6	5
710	739	Disease of the Musculoskeletal System & Connective Tissue	11	6	3	10	5	2	11	6	3	12	8	2
650	650	Antenatal care	130	-	-	141		-	150		-	100		-
650	650	Normal delivery	1	34	2		20	2	2	39	2		44	2
651	655	Caeserian Section	-	23	8		15	8		23	8		21	8
630	639	Abortion (DE&C))/MR	1	13	2	4	13	2		14	2		13	2
630	676	Direct/Indirect Obsteteric Cause	104	63	4	189	95	4	74	67	4	48	28	4
360	379	Disorder of the Eye & Adnexa	510	7	5	471	4	5	406	11	5	652	5	5
380	389	Diseases of the Ear and Mastoid Process (ENT)	215	4	2	205	11	2	204		3	235		2
320	359	Dieseas of Nurvous System (Menengitis)	-	5	4		4	4		8	4		4	4
520	529	Disease of Oral Cavity, Salivary Glands & Jaws	1,272	-	-	1,086		-	1,180		-	1,549		-
		Total	7,570	698	4.13	7,094	794	4.13	6,770	655	4.13	8,841	6[illegible]3	4.13

Annex-B(Contd.)

ICD-wise Patients and Services of Samle District Public Hospital: Gazipur

(May 2001 to July 2001)

ICD Code No Range		DISEASE	Averege			May-01			June-01			July-01		
			No of patients		Average stay period	No of patients		Average stay period	No of patients		Average stay period	No of patients		Average stay period
			Out patient	In patient		Out patient	In patient		Out patient	In patient		Out patient	In patient	
001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	174	33	2	187	46	2	147	27	2	188	25	2
121	127	Intestinal Worm Infestation	314	9	2	310	9	2	212	9	2	420	10	2
680	709	Diesease of Skin and Subcutaneous Tissue	382	4	2	370	3	2	365	5	2	410	5	2
531	533	Ulcer of Stomach and Duodenum	425	7	6	395	7	6	390	7	6	490	8	6
460	465	Acute Respiratory Infection	26	16	5	27	15	5	25	18	5	26	15	5
480	486	Pneumonia	64	8	7	64	7	7	63	9	7	66	8	7
280	285	Anaemia's	145	8	2	125	7	2	125	8	2	185	9	2
260	269	Nutritional Deficiencies	256	12	3	305	11	3	215	12	3	247	13	3
780.6	780.6	Pyrexia of Unknown Origin (PUO)	224	14	3	232	10	3	207	16	3	232	15	3
401	405	Hypertensive Disease	62	6	3	50	5	3	35	7	3	100	5	3
490	493	Asthma (Bronchiectasis, Chronic and Unspecified, Emphysema and Asthma)	73	7	6	35	7	6	112	8	6	72	7	6
084	084	Malaria	4	3	5	4	3	5	4	3	5	4	3	5
070	070	Viral Hepatitis	4	10	2	4	9	2	5	9	2	4	11	2
250	250	Diabetes Mellitus	5	5	4	5	7	4	6	4	4	5	5	4
055	055	Measles	12	6	4	12	5	4	13	6	4	11	7	4
010	018	Tuberculosis	4	2	5	4	2	5	4	2	5	4	2	5
960	989	Poisonings and Toxic Effects	11	11	2	15	6	3	5	5	2	12	22	2
290	319	Mental Disorders	2	-	1	2		1	2		1	2		1
714	714	Rheumatic disorders	20	13	4	20	10	5	21	16	4	19	14	4
090	099	Venereal Diseases	7	-	4	7		4	6		4	9		4
410	414	Ischamic Heart Diesease (IHD)	7	12	4	6	11	4	7	12	4	8	13	4
210	229	Neoplasm	20	18	5	21	19	6	19	18	5	20	17	5
E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)	378	59	7	340	56	7	480	50	7	315	72	7
574	575.1	Choleiithisis and Cholecystitis	3	5	5	3	5	5	3	4	5	3	5	5
540	543	Appendicectomy (Appendicitis)	17	10	5	17	11	4	14	10	5	19	9	5
940	949	Burns	19	12	4	19	13	4	20	12	4	18	11	4
800	848	Fractures, Dislocation	99	28	3	102	25	3	97	31	3	98	27	3
600	600	Hyperplasis of Prostate/Hydrocele	-	-	4			3			5			5
603	603	Hernia/Hydrocele	20	10	2	20	11	2	17	9	2	23	10	2
038	038	(Septicaemia) Abscers	11	4	2	10	4	2	11	5	2	12	3	2
580	599	Disease of Urinary System	17	8	5	15	7	5	21	8	5	14	8	5
430	438	Cerebrovascular Disease	-	-	5			6			5			5
710	739	Disease of the Musculoskeletal System & Connective Tissue	25	-	2	28		2	25		2	23		2
650	650	Antenatal care	12	-	-	10		-	12		-	15		-
650	650	Normal delivery	4	30	2	4	26	2	5	32	2	4	31	2
651	655	Caeserian Section	-	22	7		25	7		20	7		20	7
630	639	Abortion (DE&C))	-	16	2		21	2		12	2		15	2
630	676	Direct/Indirect Obstetenc Cause	33	34	4	35	38	4	45	28	4	18	35	4
360	379	Disorder of the Eye & Adnexa	243	20	5	232	19	5	273	21	5	225	21	5
380	389	Diseases of the Ear and Mastoid Process (ENT)	136	14	2	215	19	3	17	3	2	177	21	2
320	359	Dieseas of Nurvous System (Menengitis)	-	-	4			4			4			4
520	529	Disease of Oral Cavity, Salivary Glands & Jaws	298	-	-	393		-	284		-	216		-
		Total	3,556	476	4.04	3,643	479	4.04	3,312	446	4.04	3,714	502	4.04

Annex-B(Contd.)

ICD-wise Patients and Services of Samle District Public Hospital: Moulvibazar

(May 2001 to July 2001)

ICD Code No Range		DISEASE	Averege			May-01			June-01			July-01		
			No of patients		Average stay period	No of patients		Average stay period	No of patients		Average stay period	No of patients		Average stay period
			Out patient	In patient		Out patient	In patient		Out patient	In patient		Out patient	In patient	
001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	256	44	2	238	45	2	245	47	3	284	39	2
121	127	Intestinal Worm Infestation	178	6	2	208		2	162	10	2	163	7	2
680	709	Diesease of Skin and Subcutaneous Tissue	218	5	2	226	8	2	188	4	3	241	4	2
531	533	Ulcer of Stomach and Duodenum	135	17	6	129	15	6	135	15	6	142	20	6
460	465	Acute Respiratory Infection	163	21	5	171	21	5	226	18	5	91	24	5
480	486	Pneumonia	31	23	5	26	24	5	42	22	4	25	24	5
280	285	Anaemia's	64	5	3	70	5	2	56	5	5	65	5	2
260	269	Nutritional Deficiencies	123	21	3	132	24	3	106	14	4	131	25	3
780.6	780.6	Pyrexia of Unknown Origin (PUO)	179	42	3	178	45	3	165	47	3	193	35	3
401	405	Hypertensive Disease	38	12	3	37	10	3	31	14	3	45	11	3
490	493	Asthma (Bronchiectasis, Chronic and Unspecified, Emphysema and Asthma)	45	7	5	47	4	5	48	6	5	41	10	5
084	084	Malaria	10	7	5	10	7	5	10	7	5	10	7	5
070	070	Viral Hepatitis	7	14	2	7	8	2	7	7	2	7	28	2
250	250	Diabetes Mellitus	29	6	4	30	5	4	25	6	4	31	8	4
055	055	Measles	1	1	4	1	1	4	1	1	4	1	1	4
010	018	Tuberculosis	7	8	5	7	8	5	7	8	5	7	8	5
960	989	Poisonings and Toxic Effects	10	5	2	10	5	2	10	6	2	10	5	2
290	319	Mental Disorders	28	5	1	21	4	1	28	5	1	34	5	1
714	714	Rheumatic disorders	5	5	4	4	5	4	5	2	4	7	7	4
090	099	Venereal Diseases	8	3	4	8	3	4	8	3	4	8	3	4
410	414	Ischamic Heart Diesease (IHD)	5	3	4	5	3	4	5	3	4	5	3	4
210	229	Neoplasm	5	3	5	5	3	5	5	3	5	5	3	5
E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)	139	167	7	132	102	7	113	205	8	172	194	7
574	575.1	Cholelithisis and Cholecystitis	4	6	5	4	8	5	3	6	5	6	4	5
540	543	Appendicectomy (Appendicitis)	11	7	5	12	4	5	8	7	4	14	11	5
940	949	Burns	13	7	4	9	2	4	14	5	5	17	14	4
800	848	Fractures, Dislocation	53	25	3	36	14	3	37	23	3	85	37	3
600	600	Hyperplasis of Prostate/Hydrocele	7	3	4	3	4	5	5	2	3	12	2	5
603	603	Hernia	13	8	2	15	7	2	9	6	2	16	11	2
038	038	(Septicaemia) Abscers	5	2	2	5	2	2	5	2	2	5	2	2
580	599	Disease of Urinary System	17	6	5	21	6	5	16	7	4	13	5	5
430	438	Cerebrovascular Disease	21	6	5	18	3	5	21	5	5	25	9	5
710	739	Disease of the Musculoskeletal System & Connective Tissue	5	-	2	4		2	5		2	5		2
650	650	Antenatal care	118	5	-	105	4	-	88	5	-	160	5	-
650	650	Normal delivery	-	23	2		17	2		13	2		40	2
651	655	Caeserian Section	-	31	6		25	6		30	7		38	6
630	639	Abortion (DE&C))	-	25	2		33	2		19	2		22	2
630	676	Direct/Indirect Obsteteric Cause	-	45	4		46	4		43	3		45	4
360	379	Disorder of the Eye & Adnexa	48	4	5	39	4	5	42	4	5	64	4	5
380	389	Diseases of the Ear and Mastoid Process (ENT)	86	1	2	79	2	2	91	1	2	87	1	2
320	359	Dieseas of Nurvous System (Menengitis)						4			4			4
520	529	Disease of Oral Cavity, Salivary Glands & Jaws	607	-	-	583		-	448		-	791		-
		Total	2,692	634	4.46	3,010	596	4.46	2,692	703	4.46	3,195	794	4.46

Annex-B(Contd.)

ICD-wise Patients and Services of Samle District Public Hospital: Sirajganj

(May 2001 to July 2001)

ICD Code No Range		DISEASE	Averege			May-01			June-01			July-01		
			No of patients		Average stay period	No of patients		Average stay period	No of patients		Average stay period	No of patients		Average stay period
			Out patient	In patient		Out patient	In patient		Out patient	In patient		Out patient	In patient	
001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	1,370	26	2	1,377	27	2	1,291	23	3	1,441	29	2
121	127	Intestinal Worm Infestation	1,744	3	2	1,729	5	2	1,811	2	2	1,693	3	2
680	709	Diesease of Skin and Subcutaneous Tissue	259	-	2	259		2	273		3	244		2
531	533	Ulcer of Stomach and Duodenum	1,351	111	6	1,359	106	6	1,396	109	6	1,299	119	7
460	465	Acute Respiratory Infection	307	49	5	314	42	5	281	45	5	326	60	5
480	486	Pneumonia	61	10	6	63	8	5	56	9	7	65	12	7
280	285	Anaemia's	767	20	2	773	18	2	801	17	2	727	26	2
260	269	Nutritional Deficiencies	774	20	3	778	20	3	761	20	3	784	20	3
780.6	780.6	Pyrexia of Unknown Origin (PUO)	475	33	4	485	23	4	440	26	4	501	51	3
401	405	Hypertensive Disease	11	35	3	7	32	3	10	30	3	15	43	3
490	493	Asthma (Bronchiectasis, Chronic and Unspecified, Emphysema and Asthma)	57	11	8	58	15	8	63	7	8	49	10	7
084	084	Malaria	7	4	5	5	5	5	9	3	5	7	4	5
070	070	Viral Hepatitis	17	3	2	17	5	2	13	2	2	21	3	2
250	250	Diabetes Meilitus	4	3	4	5	3	4	4	3	4	3	2	4
055	055	Measles	6	-	4	5		4	7		4	6		4
010	018	Tuberculosis	12	4	5	9	3	5	15	4	5	11	5	5
960	989	Poisonings and Toxic Effects	13	14	2	11	19	2	14	14	2	15	10	2
290	319	Mental Disorders	5	3	1	3	3	1	5	3	1	6	4	1
714	714	Rheumatic disorders	6	4	4	4	5	4	8	4	4	7	4	4
090	099	Venereal Diseases	7	5	4	7	5	4	7	5	4	7	6	4
410	414	Ischamic Heart Diesease (IHD)	9	6	4	8	4	4	9	7	4	9	6	4
210	229	Neoplasm	6	5	5	6	4	5	7	5	5	6	5	5
E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)	48	101	7	48	103	7	41	106	7	56	95	7
574	575.1	Choielithisis and Cholecystitis	5	17	5	2	17	5	7	16	5	7	17	5
540	543	Appendicectomy (Appendicitis)	6	17	5	2	15	5	7	17	5	8	18	5
940	949	Burns	2	4	4	2	2	4	1	4	4	4	5	4
800	848	Fractures, Dislocation	8	35	3	7	27	3	9	38	3	7	41	3
600	600	Hyperplasis of Prostate/Hydrocele	-	2	5		2	5		2	5		2	5
603	603	Hernia	-	14	2		12	2		15	2		14	2
038	038	(Septicaemia) Abscers	15	7	2	10	7	2	15	6	2	21	8	2
580	599	Disease of Urinary System	12	8	5	9	7	5	11	7	5	15	11	5
430	438	Cerebrovascular Disease	-	2	5		2	5		3	5		2	5
710	739	Disease of the Musculoskeletal System & Connective Tissue	11	4	2	12	4	2	11	5	2	10	4	2
650	650	Antenatal care	96	78	-	96	83	-	103	74	-	88	78	-
650	650	Normal delivery	4	27	2	2	23	2	4	28	2	7	31	2
651	655	Caeserian Section	7	14	8	8	13	8	4	14	8	9	15	8
630	639	Abortion (DE&C))/MR	6	19	2	4	21	2	5	20	2	8	15	2
630	676	Direct/Indirect Obsteteric Cause	30	24	4	24	20	4	32	23	4	35	30	4
360	379	Disorder of the Eye & Adnexa	162	10	5	162	9	5	177	8	5	146	12	5
380	389	Diseases of the Ear and Mastoid Process (ENT)	167	4	2	164	4	2	151	3	2	186	4	2
320	359	Dieseas of Nurvous System (Menengitis)	3	3	4	2	4	4	4	3	4	4	3	4
520	529	Disease of Oral Cavity, Salivary Glands & Jaws	174	-	-	161		-	173		-	187		-
		Total	8,024	759	4.09	7,997	727	4.09	8,036	730	4.09	8,040	827	4.09

Annex-B(Contd.)

ICD-wise Patients and Services of Samle District Public Hospital: Jessore

(May 2001 to July 2001)

ICD Code No Range		DISEASE	Average			May-01			June-01			July-01		
			No of patients		Average stay period	No of patients		Average stay period	No of patients		Average stay period	No of patients		Average stay period
			Out patient	In patient		Out patient	In patient		Out patient	In patient		Out patient	In patient	
001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	236	66	3	275	75	3	208	59	2	224	63	3
121	127	Intestinal Worm Infestation	65	34	2	56	29	1	44	21	2	94	52	2
680	709	Diesease of Skin and Subcutaneous Tissue	656	-	2	393		1	757		2	817	1	2
531	533	Ulcer of Stomach and Duodenum	351	22	7	284	18	6	310	20	7	460	28	7
460	465	Acute Respiratory Infection	218	20	6	231	21	7	197	19	5	225	21	5
480	486	Pneumonia	54	5	6	57	5	5	49	5	7	56	5	7
280	285	Anaemia's	61	12	2	57	11	1	73	15	2	53	10	2
260	269	Nutritional Deficiencies	204	42	3	182	38	3	207	42	3	224	45	3
780.6	780.6	Pyrexia of Unknown Origin (PUO)	230	14	5	200	12	5	146	9	5	343	21	5
401	405	Hypertensive Disease	86	12	3	72	11	3	65	10	3	120	15	3
490	493	Asthma (Bronchiectasis, Chronic and Unspecified, Emphysema and Asthma)	65	10	7	62	10	7	58	9	7	74	12	7
084	084	Malaria	6	2	5	7	2	5	4	2	5	7	3	5
070	070	Viral Hepatitis	7	15	2		17	2		19	2	20	8	2
250	250	Diabetes Mellitus	17	3	4	14	2	4	10	3	4	26	4	4
055	055	Measles	2	-	4	2		4	2		4	1		4
010	018	Tuberculosis	5	9	6	4	13	6	5	9	6	6	4	6
960	989	Poisonings and Toxic Effects	71	26	2	70	26	2	73	27	2	69	26	2
290	319	Mental Disorders	84	6	1	86	7	1	85	4	1	81	8	1
714	714	Rheumatic disorders	15	8	4	16	8	4	14	7	4	15	9	4
090	099	Venereal Diseases	8	11	4	8	10	4	7	12	4	9	12	4
410	414	Ischamic Heart Diesease (IHD)	30	5	4	30	5	4	31	5	4	29	2	4
210	229	Neoplasm	7	9	6	7	9	6	7	9	6	2	4	6
E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)	308	78	7	479	65	7	82	57	7	364	57	7
574	575.1	Cholelithisis and Cholecystitis	26	4	6	54	6	6	7		6	16	6	6
540	543	Appendicectomy (Appendicitis)	14	10	6	17	13	6	5	4	6	19	13	6
940	949	Burns	22	7	4	38	8	4	7	1	4	21	11	4
800	848	Fractures, Dislocation	146	20	5	163	26	5	41	5	5	235	30	5
600	600	Hyperplasis of Prostate/Hydrocele	-	-	5			5			5			5
603	603	Hemia	8	11	3	9	14	3	8	7	3	7	13	3
038	038	(Septicaemia) Abscers						2			2			2
580	599	Disease of Urinary System	4	8	6	4	8	6	4	8	6	4	8	6
430	438	Cerebrovascular Disease	-	7	5		4	5		8	5		9	5
710	739	Disease of the Musculoskeletal System & Connective Tissue	16	6	3	14	4	3	10	7	3	25	8	3
650	650	Antenatal care	162	11	-	164	10	-	120	11	-	201	12	-
650	650	Normal delivery	-	34	2		32	2		24	2		46	2
651	655	Caeserian Section	-	20	8		21	8		14	8		25	8
630	639	Abortion (DE&C))/MR	58	29	4	56	28	4	45	21	4	74	38	4
630	676	Direct/Indirect Obsteteric Cause	67	31	5	67	31	5	67	31	5	67	31	5
360	379	Disorder of the Eye & Adnexa	1,323	52	5	1,393	55	5	1,208	48	5	1,367	52	5
380	389	Diseases of the Ear and Mastoid Process (ENT)	1,173	6	3	982	5	3	1,111	8	3	1,418	4	3
320	359	Dieseas of Nurvous System (Menengitis)						4			4			4
520	529	Disease of Oral Cavity, Salivary Glands & Jaws	753	-	-	661		-	679		-	918		-
		Total	6,555	665	4.33	6,214	659	4.33	5,746	560	4.33	7,691	716	4.33

Annex-B(Contd.)

ICD-wise Patients and Services of Samle District Public Hospital: Patuakhali

(May 2001 to July 2001)

ICD Code No Range		DISEASE	Average			May-01			June-01			July-01		
			No of patients		Average stay period	No of patients		Average stay period	No of patients		Average stay period	No of patients		Average stay period
			Out patient	In patient		Out patient	In patient		Out patient	In patient		Out patient	In patient	
001	009	Intestinal Infectous Diseases (Diarrhoeal diseases)	146	106	3	124	270	3	185	26	3	128	23	2
121	127	Intestinal Worm Infestation	397	18	2	313	20	2	451	15	2	427	20	2
680	709	Diesease of Skin and Subcutaneous Tissue	719	4	3	771	5	2	622		2	765	2	2
531	533	Ulcer of Stomach and Duodenum	651	31	7	445	26	7	800	12	7	707	55	7
460	465	Acute Respiratory Infection	117	36	6	15	32	6	6	47	6	330	30	5
480	486	Pneumonia	16	11	6	18	12	5	17	9	5	14	12	7
280	285	Anaemia's	201	18	2	337	18	2	138	13	2	127	24	2
260	269	Nutritional Deficiencies	66	10	3	6	10	3	1	15	3	191	6	3
780.6	780.6	Pyrexia of Unknown Origin (PUO)	376	60	4	380	57	4	328	66	4	421	56	3
401	405	Hypertensive Disease	11	15	3	12	12	3	8	10	3	12	24	3
490	493	Asthma (Bronchiectasis, Chronic and Unspecified, Emphysema and Asthma)	38	20	7	58	15	7	24	13	7	31	31	7
084	084	Malaria	3	2	4	2	2	4	2	2	4	5	2	5
070	070	Viral Hepatitis	9	6	2	8	6	2	8	6	2	10	6	2
250	250	Diabetes Mellitus	7	4	4	8	3	4	7	4	4	7	5	4
055	055	Measles	1	1	4	1	1	4	1	1	4	1	1	4
010	018	Tuberculosis	5	2	5	5	2	5	6	2	5	4	2	5
960	989	Poisonings and Toxic Effects	5	9	3	6	8	3	4	6	3	5	12	2
290	319	Mental Disorders	40	4	1	20	5	1	60	3	1	40	5	1
714	714	Rheumatic disorders	40	5	4	45	4	4	39	5	4	37	6	4
090	099	Venereal Diseases	3	3	3	2	7	3	4	2	3	4	1	4
410	414	Iscnamic Heart Diesease (IHD)	11	3	4	10	2	4	11	4	4	11	3	4
210	229	Neoplasm	4	10	5	4	10	5	5	9	5	4	11	5
E980	E989	Injury (Injury Undetermined Whether Accidentally or Purposely Inflicted)	439	180	7	503	212	7	329	187	7	485	142	7
574	575.1	Cholelithisis and Cholecystitis	13	10	5	12	12	5	14	11	5	13	8	5
540	543	Appendicectomy (Appendicitis)	6	19	4	7	22	4	5	19	4	7	15	5
940	949	Burns	11	7	4	15	8	4	11	7	4	7	5	4
800	848	Fractures, Dislocation	185	40	3	189	43	3	192	40	3	174	36	3
600	600	Hyperplasis of Prostate/Hydrocele	18	12	3	21	12	2	18	12	3	15	12	5
603	603	Hernia/Hydrocil	7	5	2	4	5	2	5	5	2	12	6	2
038	038	(Septicaemia) Abscers	-	20	2		16	2		21	2		22	2
580	599	Disease of Urinary System	36	17	5	36	11	5	17	13	5	16	5	5
430	438	Cerebrovascular Disease	26	7	6	21	9	6	23	5	6	34	8	5
710	739	Disease of the Musculoskeletal System & Connective Tissue	49	10	2	46	7	2	53	15	2	48	9	2
650	650	Antenatal care	50	8	-	35	6	-	49	9	-	65	9	-
650	650	Normal delivery	-	22	2		18	2		24	2		23	2
651	655	Caesenan Section	-	14	8		12	8		15	8		14	8
630	639	Abortion (DE&C))	-	13	2		8	2		13	2		17	2
630	676	Direct/Indirect Obstetenc Cause	101	60	4	90	56	4	109	64	4	105	61	4
360	379	Disorder of the Eye & Adnexa	76	3	5	80	3	5	78	4	5	71	2	5
380	389	Diseases of the Ear and Mastoid Process (ENT)	317	3	2	500	5	2	232	2	2	220	1	2
320	359	Dieseas of Nurvous System (Menengitis)	26	9	4	27	9	4	32	5	4	19	13	4
520	529	Disease of Oral Cavity, Salivary Glands & Jaws	789	-	-	712		-	710		-	946		-
		Total	5,003	829	4.51	4,888	1,001	4.51	4,604	741	4.51	5,518	745	4.51

Details of Costs Borne by Patients at District Hospitals

	Frequency	Total Average Cost	Transport & Ambulance	Accompanying Cost	Medicine & MSR	Consltancy Charges/Fees	Investigation Charges	Cabin Charges	Operation Charges	Tips
Abscess	**7**	673	27	37	573	6	-	10	-	20
Public-In	2	894	29	50	775	10	-	10	-	20
Public-out	5	342	27	10	300	5	-	-	-	-
Anaemia	**3**	4,148	1,617	90	1,000	16	-	1,425	-	-
Public-In	2	2,021	155	100	1,000	16	-	750	-	-
Private-in	1	3,720	1,540	80	-	-	-	2,100	-	-
Appendicitis	**8**	5,722	53	194	3,267	12	403	1,793	-	-
Public-In	1	1,932	70	850	1,000	12	-	-	-	-
Private-in	7	5,747	50	101	3,400	-	403	1,793	-	-
ARI	**8**	981	22	175	643	9	80	52	-	-
Public-In	4	1,011	30	215	619	15	80	52	-	-
Public-out	4	53	11	14	24	4	-	-	-	-
Arthritis	**1**	140	16	-	70	4	50	-	-	-
Public-out	1	140	16	-	70	4	50	-	-	-
Asthma	**2**	2,260	45	-	110	5	600	1,500	-	-
Public-out	1	125	10	-	110	5	-	-	-	-
Private-in	1	2,180	80	-	-	-	600	1,500	-	-
Bone	**8**	9,744	50	76	7,955	100	493	1,070	-	-
Public-In	2	1,613	18	28	400	100	1,045	22	-	-
Public-out	1	214	40	20	110	-	44	-	-	-
Private-in	5	16,616	65	106	15,000	-	165	1,280	-	-
Burn	**2**	216	31	30	150	5	-	-	-	-
Public-In	1	230	50	30	150	-	-	-	-	-
Public-out	1	17	12	-	-	5	-	-	-	-
Cholecystitis	**1**	6,857	26	26	6,800	5	-	-	-	-
Public-In	1	6,857	26	26	6,800	5	-	-	-	-
Cholostomy	**1**	9,040	20	20	9,000	-	-	-	-	-
Public-In	1	9,040	20	20	9,000	-	-	-	-	-
Diabetes Mellitus	**2**	43,715	260	80	-	-	5,000	38,375	-	-
Private-in	2	43,715	260	80	-	-	5,000	38,375	-	-
Diarrhoea	**10**	237	20	100	92	5	-	20	-	-
Public-out	9	217	20	100	92	5	-	-	-	-
Private-in	1	40	20	-	-	-	-	20	-	-
ENT	**8**	1,995	32	54	1,620	4	165	120	-	-
Public-In	2	2,539	45	40	2,350	-	50	54	-	-
Public-out	4	179	15	-	160	4	-	-	-	-
Private-in	2	589	38	83	-	-	280	188	-	-
EOC	**9**	6,303	743	59	2,702	6	218	2,575	-	-
Public-In	4	2,842	64	72	2,700	6	-	-	-	-
Public-out	1	84	20	20	40	4	-	-	-	-
Private-in	4	3,575	727	55	-	-	218	2,575	-	-
Eye	**3**	1,468	23	150	200	5	-	1,050	-	40
Public-In	1	1,248	8	150	-	-	-	1,050	-	40
Public-out	2	236	31	-	200	5	-	-	-	-
Fever	**2**	1,320	40	80	-	-	-	1,200	-	-
Private-in	2	1,320	40	80	-	-	-	1,200	-	-
Heart	**5**	2,255	418	70	133	4	625	1,005	-	-
Public-In	2	239	30	40	99	5	50	15	-	-
Public-out	1	228	24	-	200	4	-	-	-	-
Private-in	2	4,000	1,200	100	-	-	1,200	1,500	-	-
Hydrocile	**1**	5,822	12	50	2,000	-	760	3,000	-	-
Private-in	1	5,822	12	50	2,000	-	760	3,000	-	-
Hypertension	**3**	7,501	31	115	120	4	7,000	211	-	20
Public-In	1	174	12	-	120	-	-	22	-	20
Public-out	1	46	12	30	-	4	-	-	-	-
Private-in	1	7,660	60	200	-	-	7,000	400	-	-
Injury	**39**	5,573	1,383	69	2,565	6	652	898	-	-
Public-In	9	2,486	57	114	1,900	9	400	6	-	-
Public-out	20	354	20	30	220	4	80	-	-	-
Private-in	10	7,153	1,433	60	3,650	-	755	1,255	-	-
Kidney	**10**	2,913	40	131	279	6	1,475	982	-	-
Public-In	5	475	29	146	279	6	-	15	-	-
Public-out	1	24	20	-	-	4	-	-	-	-
Private-in	4	3,599	59	115	-	-	1,475	1,950	-	-
Leukemia	**1**	24	20	-	-	4	-	-	-	-

Details of Costs Borne by Patients at District Hospitals

Public-out	1	24	20	-	-	4	-	-	-	-
Liver	**1**	2,040	80	70	-	-	1,140	750	-	-
Private-in	1	2,040	80	70	-	-	1,140	750	-	-
malaria	**1**	2,685	40	35	2,500	-	100	10	-	-
Public-In	1	2,685	40	35	2,500	-	100	10	-	-
Meningitis	**4**	4,472	48	43	4,107	30	70	174	-	-
Public-In	3	4,227	33	40	4,067	6	50	31	-	-
Private-in	1	970	90	50	40	100	90	600	-	-
Mental Disorders	**1**	17,579	100	100	459	4,600	3,770	8,550	-	-
Private-in	1	17,579	100	100	459	4,600	3,770	8,550	-	-
Neoplasm	**2**	694	30	100	260	4	-	300	-	-
Public-out	1	14	10	-	-	4	-	-	-	-
Private-in	1	710	50	100	260	-	-	300	-	-
Nervous System	**3**	14,197	192	60	1,000	-	7,770	5,175	-	-
Private-in	3	14,197	192	60	1,000	-	7,770	5,175	-	-
Nutritional Diseas	**5**	7,311	413	851	2,100	10	187	3,750	-	-
Public-In	1	721	25	-	600	16	80	-	-	-
Public-out	2	1,908	11	12	1,500	5	380	-	-	-
Private-in	2	6,130	1,010	1,270	-	-	100	3,750	-	-
Pneumonia	**9**	3,257	34	29	586	206	1,000	1,392	-	10
Public-In	3	712	33	25	615	9	-	20	-	10
Public-out	3	135	9	12	110	4	-	-	-	-
Private-in	3	4,215	52	60	1,053	200	1,000	1,850	-	-
Poisoning	**1**	312	20	30	240	-	-	22	-	-
Public-In	1	312	20	30	240	-	-	22	-	-
Pregnancy	**32**	8,093	338	55	5,729	8	300	660	-	343
Public-In	16	7,286	328	55	5,517	11	150	222	-	343
Public-out	9	68	28	36	-	4	-	-	-	-
Prolapse	**1**	104	50	50	-	4	-	-	-	-
Public-In		50	-	50	-	-	-	-	-	-
Public-out	1	54	50	-	-	4	-	-	-	-
Prostrate	**1**	8,535	30	50	1,200	-	305	1,950	5,000	-
Private-in	1	8,535	30	50	1,200	-	305	1,950	5,000	-
PUO	**35**	3,850	-	112	1,152	208	1,153	1,221	-	4
Public-In	5	1,420	90	100	1,200	4	-	26	-	-
Public-out	25	379	18	54	238	5	-	60	-	4
Private-in	5	4,892	-	148	1,121	300	1,153	2,170	-	-
Rheumatic	**4**	2,357	18	35	1,200	4	800	300	-	-
Public-In	1	1,245	20	20	1,200	5	-	-	-	-
Public-out	2	20	16	-	-	4	-	-	-	-
Private-in	1	1,170	20	50	-	-	800	300	-	-
Skin Disease	**8**	673	15	14	635	4	5	-	-	-
Public-In	1	1,235	10	20	1,200	5	-	-	-	-
Public-out	7	103	16	8	70	4	5	-	-	-
Spinal	**1**	4	-	-	-	4	-	-	-	-
Public-out	1	-	-	-	-	-	-	-	-	-
TB	**1**	1,825	20	-	1,790	10	-	5	-	-
Public-In	1	1,825	20	-	1,790	10	-	5	-	-
Teeth	**17**	1,898	19	60	159	210	280	600	-	570
Public-out	16	123	19	20	80	4	-	-	-	-
Private-in	1	2,000	20	100	130	300	280	600	-	570
Tumor	**11**	11,799	59	382	6,500	14	2,005	2,839	-	-
Public-In	2	9,056	42	2,500	6,500	14	-	-	-	-
Private-in	9	4,907	63	-	-	-	2,005	2,839	-	-
Typhoid	**2**	794	35	365	380	4	-	-	-	10
Public-In	2	794	35	365	380	4	-	-	-	10
Ulcer	**18**	10,130	211	59	6,040	6	1,003	1,611	1,200	-
Public-In	6	9,337	50	48	8,750	8	450	31	-	-
Public-out	4	28	10	-	14	4	-	-	-	-
Private-in	8	5,537	246	65	925	-	1,095	2,006	1,200	-
Urinary	**2**	113	105	-	-	8	-	-	-	-
Public-In	1	212	200	-	-	12	-	-	-	-
Public-out	1	15	10	-	-	5	-	-	-	-
Viral Disease	**2**	2,099	19	75	-	-	130	1,875	-	-
Public-In	2	205	-	75	-	-	130	-	-	-
Worm	**1**	263	10	40	200	13	-	-	-	-
Public-In	1	263	10	40	200	13	-	-	-	-