HEALTH CARE DELIVERY SYSTEM IN DHAKA CITY: A SPATIAL ANALYSIS OF PRIVATE CLINICS AND HOSPITALS

NASREEN-LOVELY

DEPARTMENT OF URBAN AND REGIONAL PLANNING
BANGLADESH UNIVERSITY 0F ENGINEERING AND TECHNOLOGY, DHAKA

December,1998

HEALTH CARE DELIVERY SYSTEM IN DHAKA CITY: A SPATIAL ANALYSIS OF PRIVATE CLINICS AND HOSPITALS

BY

NASREEN-LOVELY

Thesis submitted to the Department of Urban and Regional Planning, Bangladesh University of Engineering and Technology, in partial fulfillment of the requirement for the Degree of

MASTER OF URBAN AND REGIONAL PLANNING

DEPARTMENT OF URBAN AND REGIONAL PLANNING
BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

December, 1998

THESIS ACCEPTANCE FORM

HEALTH CARE DELIVERY SYSTEM IN DHAKA CITY. A SPATIAL ANALYSIS OF PRIVATE CLINICS AND HOSPITALS

BY

NASREEN-LOVELY

THESIS APPROVED AS TO THE STYLE AND CONTENT BY

14/12/98

DR.SARWAR JAHAN — Superviser and Chairman
Professor,Department of URP
BUET

DR.M.A.MOHIT — Member
Head, Department of URP
BUET

DR.GOLAM RAHMAN — Member
Professor,Department of URP
BUET

Prof. K M H S. Sirajul Haque

DR.K.M.H.S.SERAJULHAQUE — Member(External)
Professor & Head of the Department
Department of Cardiology
Bangabanbhu Sheikh Mujib
Medical University Hospital

ACKNOWLEDGEMENT

No publication whether a literature, novel or a research works can entirely be done by its author or the researcher alone. This humble research is also no exception and I am greatly indebted to all whose kind advice and suggestions have helped me to complete this study. At the outset very naturally as it should become the name of my respected teacher , adviser and guide Dr.Sarwar Jahan, Professor , Department of Urban and Regional Planning , BUET , whose valuable and constant guidance helped me to complete the task and I acknowledge this with profound gratitude and thanks.

I express my sincere gratitude to Professor M.A. Mohit, Head of the department of Urban and Regional Planning, BUET, for rendering all possible help. I am also grateful to Professor Mir Shahidul Islam, Professor Mahabub-un-Nabi, Professor A.S.M.Abdul Quium, and other teachers of the department for their help and advice.

Thanks are also due to my uncle Mr. Faruk Abdullah of UAE embassy, Nurul Islam Khan of UNICE, Dr.Jahangir (Ph.D) former director of drug administration, Dr.Nazneen Akhter of Dhaka Maternity, Directorate General of health services, Dhaka City Corporation and their chief medical officer for their kind co-operation and for help in data collection.

Last but not the least I am thankful to those data collector, and departmental office staff who helped me a lot to complete the research work and related activities.

ABSTRACT

Before independence when Dhaka was a provincial capital, health care delivery system was limited only to the government hospitals and centres.

After indcpendence when Dhaka becamc capital city, the city experienced a sharp rise in population migrating from other parts of thc country and the need for health care facility grew rapidly. Existing government hospital and health care centres with around 5500 beds just failed to cope up with the rising demand. Under such situation private health care system started devcloping .

A total of five zones out of ten zones under Dhaka City Corporation were studied. The study was conducted cousidering locational and distributional pattern of the private clinics and hospitals, typology, size and facilities available and their spatial variations as well as cost and quality of the private health care services and accessibility of the various income groups to such services.

Study of the five zone shows that the distribution of the private health care centre has been largely influenced by the economic consideration of the prospective users of the establishments and as such most of these institutious are concentrated disproportionately in some particular areas instead of being distributed and balanced way.

From the consideration of place and facility, out of the 230 private clinics and hospitals in the city there are only few recently established specialized units and are run by part time consultants.

Private health care facility lacks seriously to serve the need of the large number of least privileged section living in the slums. In other words such facility cspecially cater to the well to do sections of the society only. Zone no. 6 has been considcrcd to be the most ideal from the viewpoint of location, environment, and patient availability among all other zones.

From cost point of view,clinics which havc better diagnostics facility and scope, better than average services are found to have higher establishment cost and monthly expenditure .

A study was conducted on the 238 families in the various localities/areas of the metropolitan city based on three income groups. The basic information on socio-economic condition of these families helped to understand the health and health related aspect of these families.

Modern treatment facility like CT Scan, leporoscopy, lasertherapy, incubator, ventilator, dialysis etc. are used by only 14 % of the clinics and such clinics are concentrated in comparatively posh areas of the city where treatment cost are higher and therefore which is out of the reach of the middle and lower middle income groups. Moreover absence of ambulance facility in most of the clinics is also a reason for poor health care delivery system.

Thesis Title : HEALTH CARE DELIVERY SYSTEM IN DHAKA CITY: A SPATIAL ANALYSIS OF PRIVATE CLINICS AND HOSPITALS

Thesis Supervisor: Dr. Sarwar Jahan
Professor
Department of Urban and Regional Planning,
Bangladesh University of Engineering
and Technology, Dhaka

CONTENTS

LIST OF TABLES

LIST OF FIGURE

CHAPTER - 1

INTRODUCTION

1.0 INTRODUCTION

The history of health services of Bangladesh, as part of the sub-continent, can be traced back to the early 17th century when the East India Company came here. The administrative machinery was then meant to govern as a police state from England and public health was a transferred subject. The early efforts of health administration were directed to the alleviation of suffering due to sickness mostly catering to the needs of urban elites. Subsequently some facilities were extended to small towns in the form of hospitals with few beds.

Dhaka has been in continuous existence as a city for more than 400 years (The Telegraph, 16 Jan' 1972). After the emergence of Bangladesh in 1971 Dhaka became the national capital and its economic and administration importance increased significantly as the opportunities for employment grew, the city experienced a sharp rise in the rate of migration from other places, especially rural areas. Within two decades (1971-1991) population of the city increased tremendously and reached 6.5 millions in 1991 (Population census of Bangladesh 1991).

It is universally accepted that strengthening of health care facilities is the primary responsibility of all countries. In this endeavour it is necessary to design and

implement such changes that enhance the performance of the total health service delivery system in a balanced and integrated manner. It is also recognised that administration and planning of medical care services require research on the utilisation of those services by the population.

Since health should be regarded as right of every one and not the privilege of a few, health care facilities should be available to all, irrespective of their ability to pay and it should look after especially the vulnerable and weaker section of the population to create and maintain a healthy environment both at home as well as in place of work. Therefore the quantity of services in relation to the local requirements should not follow the general law of supply and demand. While planning the availability of health care services geographical distribution, cost and the demographic composition and socio-economic characteristics of the population should be considered. It should be kept in mind that total health care system couldn't be successfully implemented without the gradual development of mutual understanding, co-operation and confidence of all the segments of population.

Health facility is an important aspect for the development of a country. Dhaka City has quite a concentration of government and non-government health care facilities. With the development and change of the socio-culture environment health care facilities also develop and change. In our country also efforts are made to develop health care facility and service with the help of developed technology and developed treatment procedure and for this reason we can see that in Dhaka and also outside Dhaka many private clinics have developed.

Private clinics are rather recent addition to the age-old health infrastructure in the country. But this became very popular in a short period of time and Dhaka City experienced rapid growth of private clinics and health centres and along with ancillary service centres.

The concept of health care delivery through private clinic is rather a recent introduction in Bangladesh. Though modern methods of treatment are already present in our country but it has not been equally distributed all over the country. It is more or less concentrated in the Dhaka City. That is why the present study focused on the private clinics of Dhaka City with emphasis on their location and distribution, type and size as well as accessibility of varions income group to these facilities.

1.1 STATEMENT OF THE PROBLEM

The rate of growth of Dhaka's population during the last few decades has been quite spectacnlar. The effeet of the rapid increase in population over socio-economic facilities of the city can hardly be over emphasized. As the population grows, the demand for different types of urban services and facilities increases. Although some efforts have been made to increase the provision of different types of socio-economic facilities, the increase in population has far exceeded the rate of expansion of such facilities. The situation is particularly alarming in case of health care service in the city. The city has some 230 private hospitals and clinics with nearly 5,000 beds, only a

few having necessary modern facilities. Only 139 of them are registered. The city has nearly 10,000 qualified private practitioners only.

The city has one physician for every 900 person (Khan, 1992). In 1982 the population bed ratio in the city area was about 727 (Rahman and Jahan 1989). This ratio widened to about 950 in 1994 indicating a marked deterioration in the availability of health care facility and service in the city. This aggregate figure, however, doesn't necessarily reveal the actual condition of health care service in the city. Besides there may be significant spatial variation in terms of accessibility, cost and quality of service. An understanding of these variation is important for planning of health care facilities in the city.

1.2 RATIONALE OF THE STUDY

In Dhaka city the distribution of private health care services provided to the city dwellers are disproportionately concentrated at some particular area/ areas instead of being distributed and equitable manner. It is necessary to examine the present situation of the spatial distribution of the health care facilities available in different zones of Dhaka City so that the limitations and shortcomings in the context of balanced growth can be identified. Findings of the study would be useful in formulating policies and setting a guideline for proper location and distribution of clinics and hospitals in the city area.

1.3 OBJECTIVES OF THE RESEARCH

The main purpose of the present research is to acquire knowledge about the private health care delivery system in Dhaka City and its spatial variations. More specifically, the objectives of the study are to :

a) Identify private clinics and hospitals in Dhaka City and analyse their locational and distributional patterns.

b) Study the typology, size and facilities of the private clinics and hospital and their spatial variations.

c) Study the cost and quality of private health care service and accessibility of all types of income groups to such services and,

d) Offer some planning recommendations relating to proper location and distribution of private clinics and hospitals within the city area.

1.4 RESEARCH METHODOLOGY

1.4.1 Previous Studies

There is a dearth of literature on spatial aspects of health care services in urban areas. Most of the urban health related research has so far been pursued by medical practitioners with stress on medical or curative aspect of the disease rather than on spatial or sociological aspects. Available spatial studies dealt marginally with health care services in the city. Thus, Rahman and Jahan (1989) tried to identify gaps in health care service in terms of population-physician ratio and population bed-ratio at the city level while Pasha (1991) in a project report calculated indices of concentration and disparity at the ward level. Khan in her

thesis (1982) carried out a more elaborate study on the character and use of health care services but her study was concentrated on some poor urban communities. Directorate General of health services published a report (1989) which focus on number and type of government health facilities and policy to improve specialised services and other facilities in present health care institutions by developing services for combating non-communicable health problems like cardiovascular diseases, malignancies, mental disorders, diabetes etc. to provide nation-wide coverage. A report prepared for UNICEF Bangladesh by Khan (1992) analysed the organisational structure, the service delivery mechanism resources and services offered by the Dhaka city Corporation and Mymensingh Municipal Committee and identified the linkages with other organisations providing some of the basic services in the two cities. Thus, none of these studies dealt with the spatial variation in cost, accessibility and quality of health care services in the city.

1.4.2 Data collection

Data for the study has been collected from primary as well as secondary sources. Primary data has been collected from selected clinics and hospitals as well as households from selected communities.

1.4.2.1 *Primary Data*

Selection of Hospitals and Clinics

Private hospitals and clinics of various types have been selected from different areas of the city. Such selection has been done in two stages. The number of

clinics and hospitals surveyed for each type has been determined first. These clinics and hospitals have been selected from various Dhaka City Corporation zones in proportion to the number of clinics and hospitals available in those zones. For this purpose five zones have been selected out of ten Dhaka City Corporation zones. These zones and the ward under these zones with number of surveyed clinics are presented below :

Table no. 01

Distribution of surveyed clinics by zone basis

zone no.	Ward no.	No. of clinic
2	66,67,68,69,70,71,72,73,74	2
5	31,32,33,34,35,36,53,54,55,56	9
6	37,38,39,40,42,43,44,45,46,47,49,55,51,52	21
7	9,10,11,12,13,14,16,41	2
9	17,18,19,20,21	8

Source . Field Survey

A questionnaire survey has been carried out pertaining to the various aspects of the clinics and hospitals. The respondents of this survey were the administrative officials, doctors, and other staff in key positions of the clinics and hospitals.

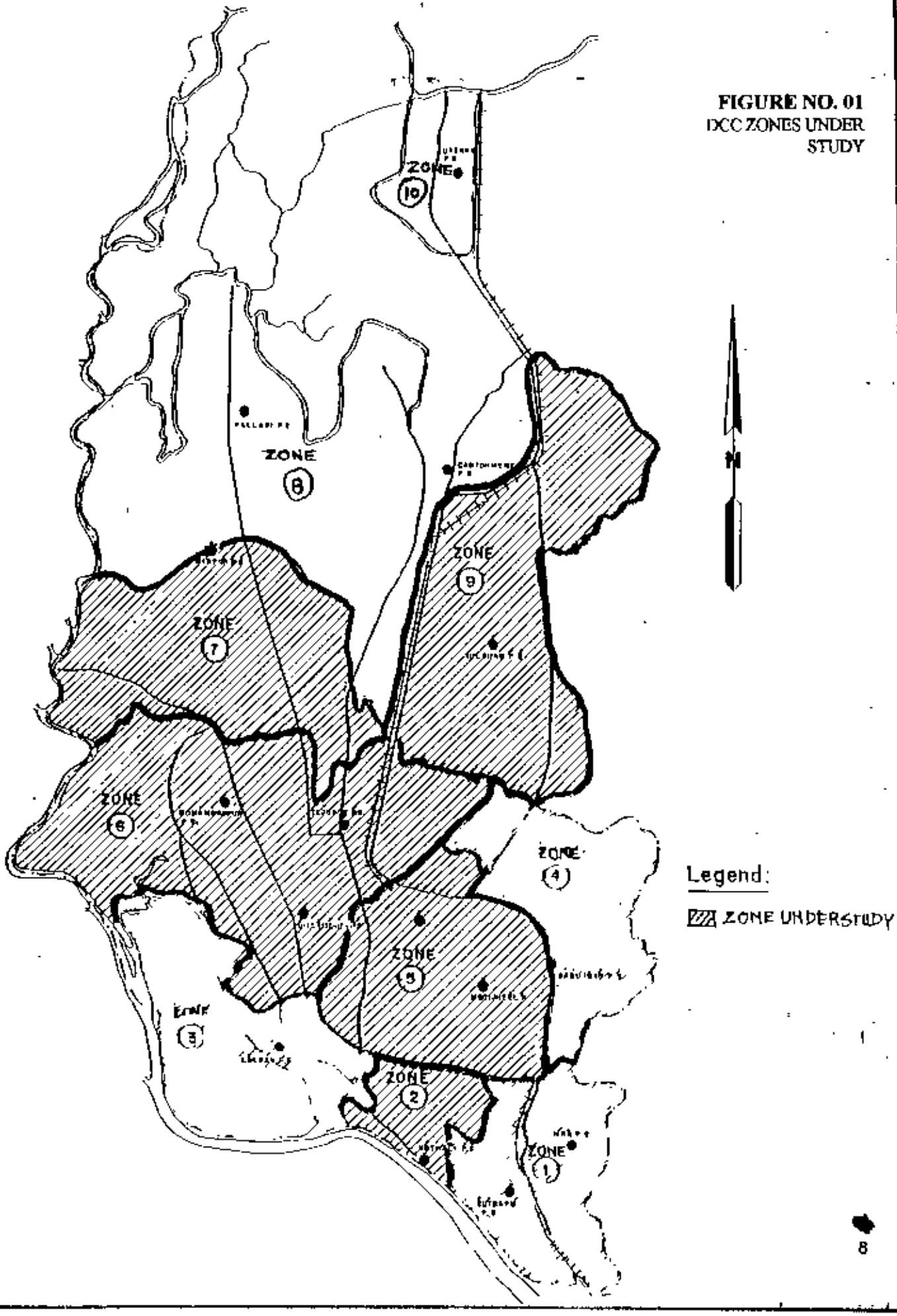
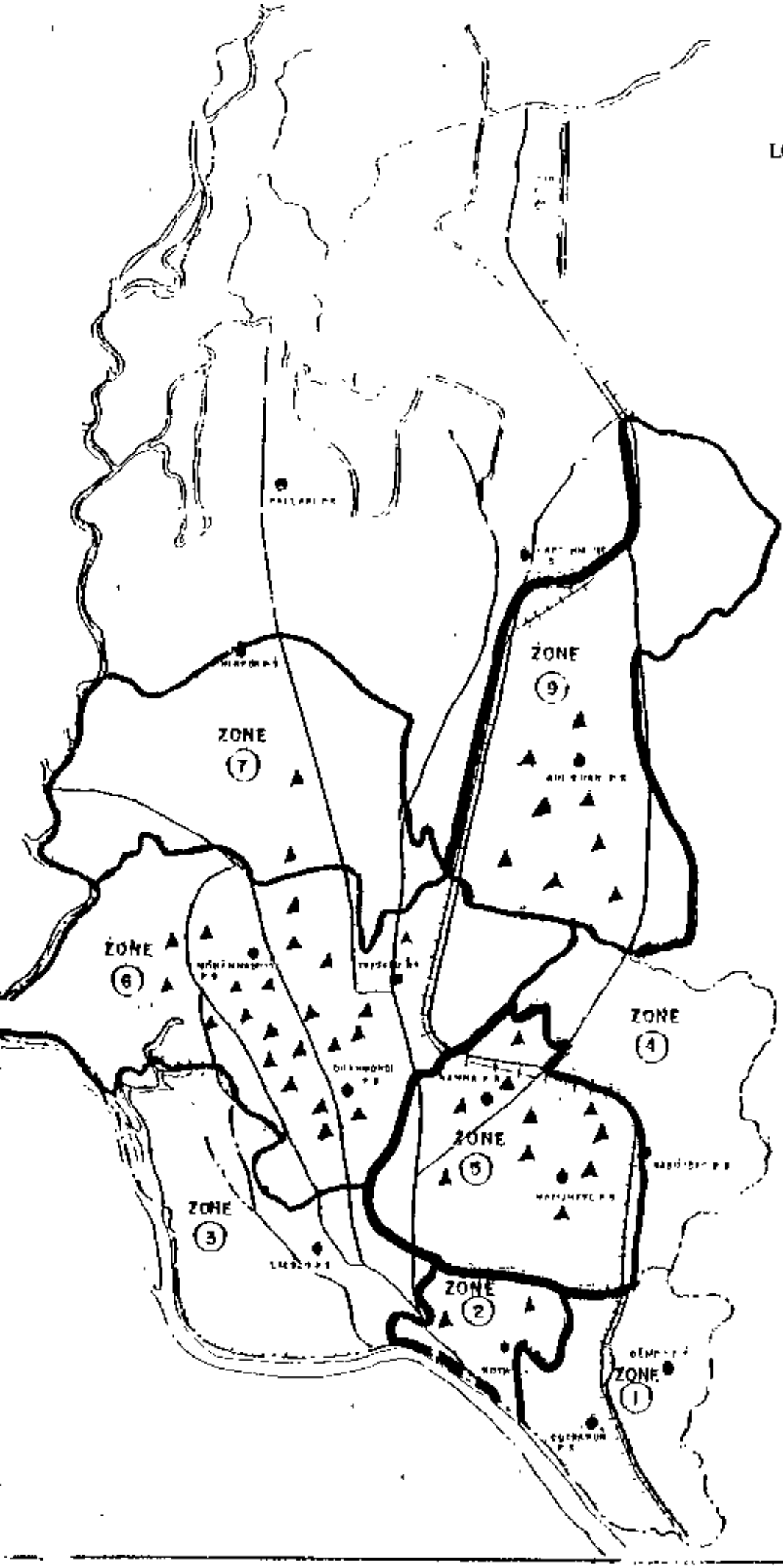


FIGURE NO. 01
DCC ZONES UNDER STUDY

FIGURE NO. 02
LOCATION OF CLINIC
UNDER STUDY



Selection of Communities :

Several communities reflecting different income level were selected for collecting data at the house hold level. The purpose of this survey was to collect data for the evaluation of the health facilities from the perspective of the users. 238 household were selected from different areas out of which 81 from Dhanmondi, Gulshan and Mohammedpur areas 83 from Moghbazar, Santinagar and Shiddheswari areas and 74 from Mirbagh, Malibagh and Rampura areas. A systematic random sampling procedure was used based on roads selected from these areas.

1.4.2.2 *Secondary Sources of Data*

Secondary data have been collected from such sources as the offices of the Director General, Health directorate, Dhaka City Corporation, Private clinics and hospitals, Medical Institutes and Colleges and other relevant agencies. Secondary data included list of hospitals and clinics, their locations, available facilities etc.

1.4.3 Preparation of Map

Mapping has been done to identity the location and distribution of clinics and hospitals.

1.4.4 Processing of Data :

Collected data has been processed in computer. For analyses and interpretation appropriate statistical technique has been applied.

CHAPTER - 2

EXISTING HEALTH CARE DELIVERY SYSTEM OF DHAKA CITY

2.0 INTRODUCTION

It is necessary to know the standard, structure and process of existing health care delivery system of Dhaka city in order to provide future guidance to health services. Dhaka being the capital city of Bangladesh, maximum government and non-government health facilities are concentrated within the city limit. It is also the focal point of qualified allopathic doctors in both private and public sectors of National Health Service.

2.1 HEALTH SITUATION OF DHAKA CITY

In Bangladesh the health care delivery system is urban based specially Dhaka based. Since Dhaka is the capital city of Bangladesh so it is the focal point of qualified allopathic doctors and the major public and private hospitals are located here, so it can be expected that health care facilities are better in Dhaka city. There is, however, a serious maldistribution of existing health care facilities, which cater to the need of the well-to-do-section of the society The low-income groups of the city are mostly left out of these services. This is quite evident from the health situation in the slums of Dhaka City. The infant mortality rate (IMR) among the Dhaka slum dwellers is over 150/1000 live births against the overall IMR of 88 for urban and 107

for rural areas (BBS, 1990) in the whole country.

The most common health problem among the urban poor in Dhaka are the water borne diseases, upto 40% children suffer diarrhea mortality (Kamal, 1987). Measles were found among 29% in a study of two wards in Dhaka City by Mannan (1990). Patients from the crowded parts of the city attending Dhaka City Corporation health services were found to suffer from typhoid, respiratory ailments, tuberculosis, and gynecological dysfunction's etc. beside others (CUS, 1979). In Dhaka 22% of the children die before reaching the age of 5. Malnutrition among slum children is the most common phenomenon, 60-80% of the survivors suffer various degrees of malnutrition (Ali, 1991). In the 12 slums, where Save The Children Fund, UK (SCF) works 56% children suffer mild, 36% moderate and 10% severe malnutrition. SCF also found 2% night blindness which is higher than 1%, found by Helen Keller Foundation (Khan, 1992)

2.2 EXISTING HEALTH CARE FACILITIES IN DHAKA CITY

Dhaka City has quite a concentration of government and non-government facilities. These include teaching hospitals and specialized medical institutions beside the sectoral/departmental hospitals run by army, police, railway and others. Altogether, the city has 5,323 hospital beds (Table no.2.1) which is 16.11% of the national total of 33,038 beds (BBS, 1989). There are also various types of dispensaries and some 65 NGO's operating MCH, (Mother & Child care) child nutrition facilities, immunization, Vitamin A capsule (VAC) distribution, education for management of

diarrhea, and family planning service (Khan, 1992). Most of the hospitals have Out Patient Department (OPD), Extended Program of Immunization (EPI), and Family Planning (FP) service beside the tertiary care provided.

The city has some 230 private hospitals and clinics, with nearly 5000 beds, some having modern facilities. Only 139 of them are registered (Directorate of health). The city has nearly 10000 private practitioners. Many of the private practitioners also work in government and other institutional hospitals during office hours. The city has as many as 5500 pharmacies and drug stores, of which only 2500 are registered. The health service in the private sector are out of reach of the urban poor, because of their high cost. They also face difficnlty in having access to the government and other institutional hospitals as they have to compete with socially and economically better off patient, 30-40% urban dwellers remain sick at any given point of time and children are obviously more vulnerable than others (Khan, 1992, pg.no.20).

2.2.1 Existing government health facilities

In Bangladesh good treatment facilities are available in government hospitals but these types of facilities are not equally available in all government hospitals. Most of the government hospitals with modern treatment facilities are situated in Dhaka City. Compared to private hospitals and clinics, treatment cost are less in government hospitals. As a result these hospitals are always overcrowded with patient and hardly an acceptable

Table 2 1 List of Hospitals in Dhaka City (with location and city ward number)

Name of Hospitals	Location	Beds	Ward no
01. Bangabandhu Shiekh Mujib Medical University Hospital	Shahbagh	700	64
02. Dhaka Medical College Hospital	Polashi	1050	63
03. BIRDEM	Shahbagh	540	64
04. Institute of Cardiovascular Diseases	S . B Nagar	100	69
05 Rehabilitation Institute and Hospital for the Disabled	"	450	"
06 National Institute of Opthalmology	"	100	"
07. Shaheed Suhrawardy Hospital	"	75	"
08. Shishu Hospital	"	200	"
09. Combined Military Hospital (CMH)	Cantonment	-	-
10. Islamia Eye Hospital	Farmgate	350	69
11 Red Crescent Holy Family Hospital	Eskaton Garden	303	65
12. Institute of Diseases of Chest and Hospital	Mahakhali	500	17
13 Infectious Diseases Hospital	"	180	"
14. Leprosy hospital	"	30	"
15. ICDDR,B Hospital	"	250	"
16. Nationsl Medical Institute Hospital	Victoria Park	50	36
17. Railway Hospital	Kamalapur	75	54
18 Police Hospital	Rajarbagh	70	61
19. Salimullah Medical College Hospital	Midford	600	80
20. Government Employees Hospital	Lalbagh	50	63
21. Shramajeebi Hospital	Nayabazar	50	34
22. Azimpur Maternity Hospital	Azimpur	100	25
23. Dental College Hospital	Polashi	20	63
24. Institute of Cancer and Hospital	Mahakhali	50	73
25. Tejgaon Thana Health Complex	Tejgaon	50	71
26. Madakasakti Hospital	"	50	"
27. Madakasakti Hospital	Gulshan	20	72

Source: Nurul Islam Khan , 1992,Pg 52
BIRDEM, Bangabandhu Shiekh Mujib Medical University Hospital,1998

standard of treatment can be ensured due to the rush of patients from different parts of the country to these hospitals. In Dhaka city there are 17 government hospitals. These hospitals are used for teaching and special purpose as well as for common curative treatment, but there is no generalized hospital in the city like the ones in district and thana headquarters meant only for treatment purposes. In generalized hospitals the doctors are free from teaching loads and therefore can devote more time for the treatment of the patients. This aspects needs consideration while developing goverument hospitals in future.

There is one Medical University and Post – graduate Institute and Hospital for tertiary level care, several specialized hospitals (e.g. TB- Leprosy, Infectious Diseases hospital, RHD, Child Hospital etc.). Some general hospitals (e.g. Govt. employees hospital etc.) and a total of 14 urban dispensaries and a Health Complex (Tejgaon) .

2.2.2 Existing private clinics and hospitals

The private sector initiatives in health development has been flourishing iu the country in the recent years and there has beeu an encouraging trend towards a public – private mix in providing quality health care in the country. In recent years many private clinics have developed in Dhaka City. These clinics are situated mainly on the main thoroughfare and places where there is possibility of having more patients, that is, near residential areas. There are 139 registered private clinics in Dhaka City situated in different areas. In scienec laboratory area there is a concentratiou of some private

clinics. In Dhanmondi, there is also a concentration of private clinics. Beside these areas, in Moghbazar and in Motijheel area there are many private clinics. Many private clinics are also situated scatteredly in areas such as Mohammadpur, Gulshan and Mirpur. Generally, in most areas of Dhaka City private clinics and hospitals have been found to develop. Compared to this development of government health care facilities have been found to be insignificant.

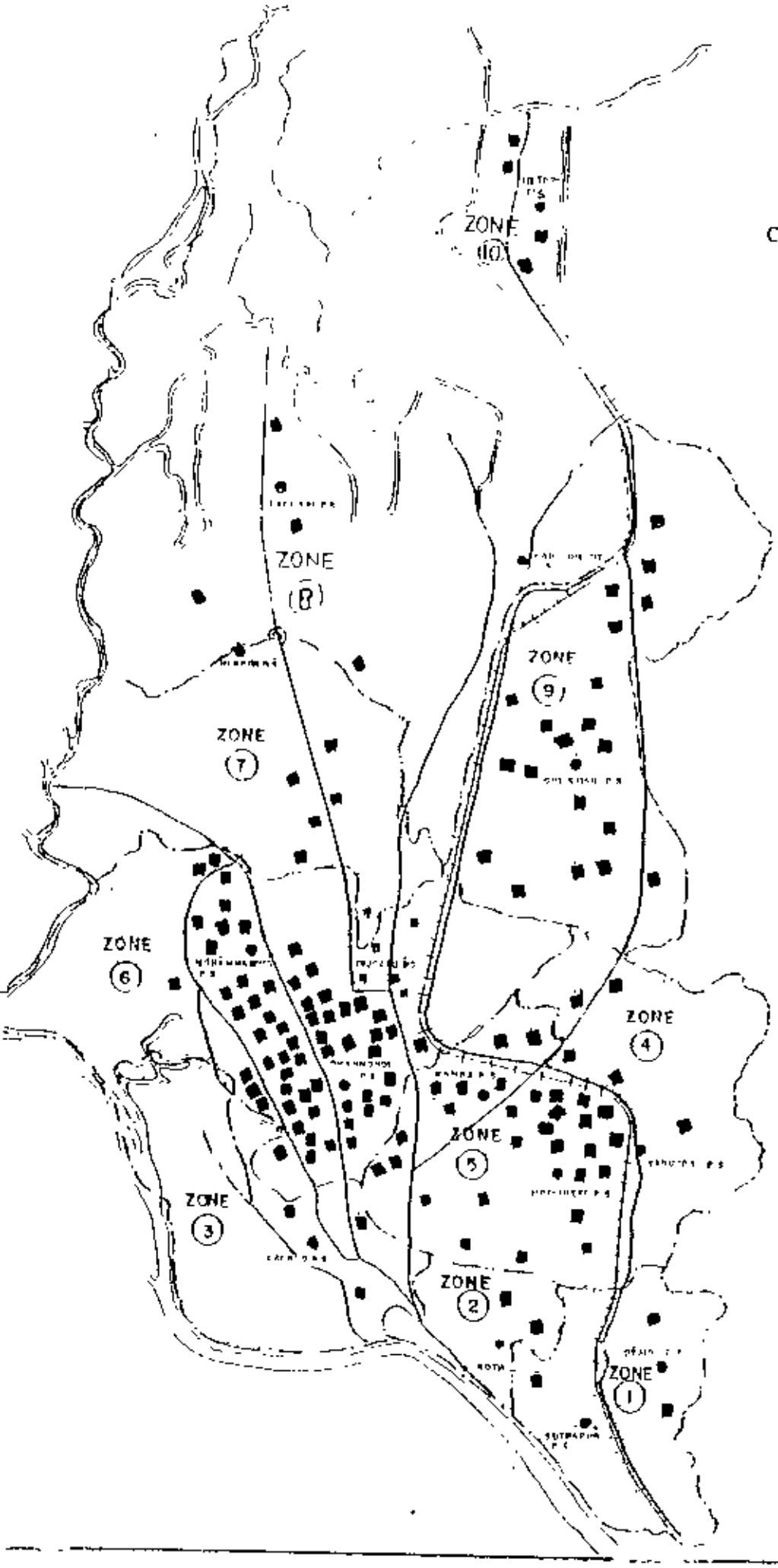
There are several renowned private hospitals both general and specialized and their services are quite satisfactory. The private Medical colleges also have started making a good partnership in producing medical graduates as well as providing curative care to the patients. On the other hand, private clinics don't have a remarkable share of care provision especially for those who can afford to buy the medical services. These clinics have positive impact on introduction of cost sharing for those who can afford to pay and at the same time, the private sector clinics are patronizing the partnership with the government from the industrialized concept of Medicare particularly in the urban setting.

2.2.3 DCC Health services

At the primary health care level, the Dhaka City Corporation (DCC) has its health infrastructure like urban dispensaries in the different wards of the city. The corporation also runs a few general hospitals and maternity clinics. The ministry of home affairs has the jail hospitals and police hospitals in the city to cater the need for generalized care to the beneficiaries of their own.

FIGURE NO. 03

LOCATION OF PRIVATE CLINICS AND HOSPITALS



2.2.4 International agencies

In the city there are a few joint venture clinics and hospitals run by international agencies and NGOs . The ICDDR, B tops the list for its name and fame for treatment of diarrhea diseases. Some joint venture hospitals are coming up in order to help technology transfer in the specialized field of medicine, surgery, cardiology etc.

2.2.5 Indigenous, Ayurvedic and Homeopathic systems of medicine

As a policy of the government the indigenous, ayurvedic and homeopathic systems of medicine also get appropriate priority in the health care delivery system. There are one homeopathic degree college, one unani and ayurvedic college in Dhaka. These institutions run a good number of hospitals and outpatient clinics in the city.

2.3 SUMMERY

Health care delivery system in Dhaka City follows the overall strategies and directives of the government for providing optimum Medicare to its population in the form of curative, preventive and rehabilitative care. Dhaka being a metropolitan city with its rapid urbanization process faces health problems similar to those in other developing countries. Although Dhaka City possesses a good number of well-equipped tertiary care institutions and sophisticated hospitals but the low-income population of the city still do not

have adequate provisions for general treatment. As most of the government hospitals and tertiary care institutions are over burdened with patients so hardly an acceptable standard of treatment can be ensured due to the rush of patients from different parts of the country to these hospitals. There is lack of adequate collaboration between many authorities and agencies responsible for health care delivery in the city and hence there is inefficiency of management. Precise policy should be developed to organize the urban health care delivery system in the city.

CHAPTER - 3

STUDY OF CLINICS AND HOSPITALS

3.0 INTRODUCTION

To make health care facilities accessible to most of the city dwellers proper distribution of the facilities is essential. Table 3.1 presents the pattern of spatial distribution of existing health facilities among different wards in Dhaka city and gives some idea about the current status of the health facilities within the city area. It is observed that private clinics and hospitals are not equally distributed rather they are concentrated in some areas specially in Dhanmondi, Eskaton, Outer circular road of Moghbazar and in Motijheel. From location map of clinics and hospitals of different wards the same situation is also observed. Other than these, one or two private clinics were found to be scattered all over the city. But compared to private hospitals, government hospitals did not increase. So to fulfil the demand of increasing population private clinics have been established in more accessible and better developed areas.

Table 3.1 Distribution of private clinics and hospitals

Zone No.	1	2	3	4	5	6	7	8	9	10	Total
Number of clinics	2	2	4	5	29	63	6	4	20	4	139

Source: Directorate general of health services,1995

3.1 DISTRIBUTION OF CLINIC BY YEAR OF ESTABLISHMENT

A chronological picture of the establishment of clinics may be useful for the study. From Table 3.2 we find a gradual iricrease in the establishment of private clinics in the city area. In the year 1975, where the concept of institutionalized medical care was still limited to Government run hospitals only, one clinic was established in zone-9. But the demand for such privately run clinics started rising from 1981, the growth of this in all the zones under study is quite fast, and it is found that 52.4% of the total number of presently existing private clinics have been established after the year 1990. It is also found from the table that 50% of these clinics have been established in zone-6. This zone comprises of the Dhanmondi Police Station, the Mohammadpur Police Station and Tejgaon Police Station, three most thickly populated Police station of the city. Next in the list of areas or zones having high growth of private clinics comes the zone-5 with 21.4% and zone-9 with 19% of the clinics .

3.2 REASONS FOR ESTABLISHING CLINIC

Among the factors explaining the establishment of an organization whether service, trade or commerce, location is always of prime importance and consideration . Naturally such organizations are always established at a place where maximum number of prospective users or maximum number of prospective customers will be available. In case of distribution of the private clinics in the city also there has been no exception. From table 3.3 it is found that locational consideration has been the major factor explaining the

establishment of majority of the clinics followed by number of indoor patients and rent . Nearly 54% of the clinics in zone-6 were established there because of good location.

Table 3.2 Distribution of clinics by year of Establishment

Year of Establishment	Zone number					Total	
	2	5	6	7	9	No.	%
Up-to 1975					1	1	2.4
1976-1980		1			1	2	4.8
1981-1985	1	1	5	1		8	19
1986-1990		3	7			10	23.8
After 1990	1	4	9	1	6	21	50
Total	2	9	21	2	8	42	
Percentage	4.8	21.4	50	4.8	19		100

Source : Field Survey,1995

Table 3.3 Distribution of clinics by reasons for establishment

Reasons for establishment	Zone number					Total	
	2	5	6	7	9	No.	%
For the location	2	4	14	1	5	26	61.9
For maximum number of Indoor patient		2	5	1	1	9	21.4
For low rent of the building		1			1	2	2.4
For other reasons		2	2		1	5	16.7
Total	2	9	21	2	8	42	
Percentage	4.8	21.4	50	4.8	19		100

Source : Field Survey,1995

In case of clinics and hospitals locational consideration is also important from the viewpoint of environmental consideration. Besides being easily accessible, neat and clean planned area , zone-6 has plenty of bounded plots which are also important factors from the investors point of view. From these consideration also zone-6, zone-9 and zone-5 are leading. Zone-6 has the Dhanmondi residential area, zone-9 comprises mainly of Gulshan, Banani residential area and zone-5 comprising of two Major Police Stations of the City, Ramna Police Station and Motijheel Police Station. Zone-6 and zone-9 have been developed for residential purposes and as such they are well planned and neat and clean. So we can understand that neat and clean environment is essential for establishing a clinic. These residential plots have boundary walls and measuring no less than 5 (five) katha area. From table 3.4 we find 57. 1% of the clinics in city are established on 5(five) katha plots and that is also in zone-6 and in terms of number surveyed it is the highest being 14 numbers. Percentage of clinics and hospitals having 6-10 Katha land is 21.4% and the height number being 4(four) in zone-6. Clinics and hospitals having land area from 10-20 katha and above are situated in zone no. 9 which has the Gulshan, Banani areas in it. Compared to zone-6 and 9, zone-5 has amongst all the other 5 zones under study an unique feature, besides being important residential and commercial area, this zone contain main administrative area and the seat of the Government, the secretariat Therefore along with the advantage of well populated residential area there is an added advantage of being close to the main administrative area. On the other hand this zone being an important commercial area, (the Motijheel commercial area situated in it), the availability of sufficient space for establishing private clinics and hospitals is much less compared to zone-6

and zone-9. As such there has been a concentrated growth of private clinics and hospitals in the closely situated Eskaton, Moghbazar, Santinagar, Malibag and Khilgaon area of the zone.

3.3 PATTERN OF OWNERSHIP

For establishing a non-Government or private clinic or hospital of any size a fairly large sum of fund is required with readily available financial back-up. It is, however interesting to note that 57.1% of the non-Government clinics/hospitals in Dhaka city are of single ownership, where as 38.1% of joint ownership clinics. Besides, 4.8% of the clinics are established with the help of local organizations and 2.4% established with the help of Foreign organisations.

Table 3.4 Distribution of clinics by total boundary area of the clinic

Total area in khata	**Zone number**					Total	
	2	**5**	**6**	**7**	**9**	**No.**	**%**
Upto 5	1	5	14	2	2	24	57.1
6-10	1	4	4		2	11	21.4
11-15			1		2	3	7.1
16-20			1		1	2	4.8
More than 20			1		1	2	4.8
Total	2	9	21	2	8	42	
Percentage	4.8	21.4	50	4.8	19		100

Source : Field Survey,1995

Table 3.5 Distribution of clinics by type of ownership

Type of ownership	No. of clinic	Percentage
Single ownership	23	54.8
Joint ownership	16	38.1
Local aided	2	4.8
Foreign aided	1	2.4
Total no. of clinic	42	100

Source : Field Survey,1995

3.4 PHYSICAL FEATUERS

Health care service plays an important role in the development of a nation. There is no doubt that a healthy work force alone can carry forward the development activities of a nation to the desired goal. Now a days tremendous development has been made in the field of medical science, technology and practices. Our country is also trying to modernize the medical services using those modern techuology and modern niethod of treatment procedures such as lithotropsy , laser therapy , dialysis , computer diagnosis etc. Many private clinics with modern facilities have developed both in Dhaka and out side . In the 1980's the number of private clinics in Dhaka started rising. It is found (Table 3.2)that only one of the surveyed clinics existed in 1975. It is also found that 19% of the surveyed clinics were established between 1981 and 1985 while about 24% of the clinics under study were established during 1986 – 90 period. Majority (52.4%) of the

clinics were established after 1990. This shows that the demand for private clinics as well as personalized Medicare is increasing. The reason for increasing demand for private clinics is that, the health care facility and services provided by the Government can not fulfill the need for a growing population in the city. Moreover , the health care services and facilities provided by the Government are not only inadequate but also poor in quality in many respects. Majority (64.3% ,Table 3.6) of the private clinics and hospitals which have been established during the last one decade and a half are housed in residential buildings which were originally built for residential purpose. Only 19% of the clinics had actually been designed for clinics and hospital.

Table 3.6 Distribution of clinics by past usage of the building

Past usage	Zone number					Total	
	2	5	6	7	9	No.	%
Residential	2	6	12	2	5	27	64.3
Commercial		1	2			3	7.2
Other			3		1	4	9.5
Total	2	7	17	2	6	34	
Percentage	4.8	16.7	40.5	4.8	14.3		81

Source : Field Survey,1995

As most of the clinics are converted from residential buildings, required standard room specification is naturally absent . In many cases the operation theaters are found to be much bigger than required as because in most of

these cases the living room is converted to an operation theater. On the other hand the size of the post-operative room is smaller than required . In case of many clinics there are no post-operative rooms at all. Also the size of the wards are small and there is congestion of beds than it should be. From table 3.4 it is observed that nearly 57% of the clinics are low-rise and are within 5(five) khata land area. This is due to the fact that nearly 64.3% (Table 3.6) of the existing clinics are converted from residential buildings.

3.5 COST OF ESTABLISHMENT AND MAINTENANCE

It is very expensive to establish a clinic . Establishment of a clinic requires first of all a building with enough space for reception, patient's waiting room, rooms for doctors and nurses and above all space for sufficient number of bed, whether the clinic is established in a rented house or in an owned building. From the study it is observed that 73.8% of the clinics have been established in rented buildings and the rest 26.2% have its own building. From Table 3.7 it is found that 21% of the clinics pays building rent varying from Tk. 5000 to Tk. 15000 per month. From the same table it is found that 30.8% of the clinics pay rent in the range of Tk. 25001- Tk. 45000.

Whereas only 4.8% (Table 3.7) of the city clinics pay rent varying from TK. 55001-TK. 65000, 7.1 % of the clinics pay rent over TK. 65000. From the comparison of the five zones under study it is found that zone-6 has been considered to be the most ideal for establishing a clinic, whether from the consideration of location, environment, patient availability and accessibility,

among all the other zones. The rent of a building, of course is greatly influenced by the location of the clinic.

Table 3.7 Distribution of clinics by monthly rent of the building

Rent/month	Zone number					Total	
	2	5	6	7	9	No.	%
Up-to 5000	1	2		1	1	5	11.9
5001-15000	1	3	3	1	1	9	21.4
15001-25000		2	4		1	7	16.7
25001-35000		1	5		1	7	16.7
35001-45000		1	3		2	6	14.3
45001-55000			3			3	7.1
55001-65000			1		1	2	4.8
More than 65000			2		1	3	7.1
Total	2	9	21	2	8	42	
Percentage	4.8	21.4	50	4.8	19		100

Source : Field Survey,1995

Besides the rent of the building, cost of equipment that are necessary to equip a clinic also adds to the cost of establishing a clinic. From the study of the clinics in the various zones, it is observed that 38.1% of the clinics required a minimum of TK. 10,00,000 to equip a clinic, (Table 3.8). The quality of service provided by the clinic obviously depends on the extent of expenditure on buildings, equipment and other facilities in addition to the quality of doctors and staff.

Table 3.8 Distribution of clinics by establishment cost including cost of instrument

Establishment cost in taka	zone number					Total	
	2	5	6	7	9	No.	%
Up-to 1 million	1	4	7	2	2	16	38.1
1 - 2 million		1	2		1	4	9.5
2 - 3 million		1				1	2.4
3 - 4 million			1			1	2.4
4 - 5 million		1	1		1	3	7.1
5 - 6 million		1	1			2	4.8
6 - 7 million			2			2	4.8
7 - 8 million	1		1			2	4.8
Above 8 million		1	6		4	11	26.2
Total	2	9	21	2	8	42	
Percentage	4.8	21.4	50	4.8	19		100

Source : Field Survey,1995

Table 3.9 Distribution of clinics by monthly expenditure

Expenditure	Zone number					Total	
	2	5	6	7	9	No.	%
Upto 50,000	1	3	8	1		13	31
50,001-100,000	1	2	4		1	8	19
100,001-150,000			4		2	6	14.3
150,000 – 200,000		4	5	1	2	12	28.6
Above 200,000					3	3	7.1
Total	2	9	21	2	8	42	
Percentage	4.8	21.4	50	4.8	19		100

Source : Field Survey,1995

From Table 3.9 the monthly recurring expenditure such as maintenance cost, staff salary, medicine and food, visiting doctor's payment, pathological cost etc. of a private clinic is found. From the study of the private clinics in all the zone it is observed that 31% of the clinics incur expenditure up-to TK. 50 thousand per month. Clinics having lower establishment costs and monthly expenditures are able to extend their services at a tolerable and affordable rate for the lower middle and middle income groups that forms the bulk customer group taking their services. Clinics which have better diagnostic facilities offer better than average services, are found to have higher monthly cost than the average clinics.

3.6 TYPOLOGY AND FACILITY

Before going into any detail regarding this aspect of a private clinic, it would be worthwhile to note the conditions that led to the growth of private clinics in the city. After the liberation war, when Dhaka city became the national capital from a provincial capital of pre-liberation days there has been a huge population inflow in the capital, and the city population grew very rapidly. The area of the city also expanded like wise to house the increasing population, and as a result, many new areas and settlement grew fast around the city, the trend of which is still continuing. The existing institutional health and Medicare facility like the hospitals and the medical centers was neither enough to meet the increasing demand of the increasing population nor up-to their changing demand of the quality of services. It is in the back- drop of such inadequacy of the existing medical facilities that the idea of private

clinics came into being and started growing to cater to the increasing demand for health and medical services of a growing populace.

Thus basically being more or less complimentary to the Medicare facilities provided by the Government, the private clinics have limitations, because it is not possible for these clinics to provide all the services and facilities at one place like a Government hospital. But the quality of services provided by the private clinics are more personalized and naturally better. An analysis of the private clinics regarding the type of service facility available shows that a private clinic generally provide Medicare services to specific field and also some clinics have general Medicare service facility. To asses the quality of services rendered by private clinics we need to take account of the numbers of whole time and part time doctors, the number of supporting staff , the facility of emergency services, surgical and pathological services, the outdoor facility and the ambulance facility available in a clinic.

Table 3.10 Distribution of clinics by number of full time doctors

Number of doctor	No. of clinic	Percentage
1-3	10	23.8
4-6	18	42.9
7-9	8	19
Above 9	6	14.3
Total no. of clinic	42	100

Source : Field Survey,1995

The quality of service of a clinic depends directly on the availability of doctors, their professional efficiency and sincerity. It is observed from the study of the clinics in the five zones that 42.9% (Table 3.10) of the existing clinics have 4-6 full time doctors. Whereas about 23.8% clinics have only 1-3 full time doctors. The clinics having smaller number of full-time doctors extend Medicare service to a limited or rather specific field only, where as the clinics having more full-time doctors extends Medicare services to more than one specific field. It is observed from the study that 39 2% clinics have 5-6 part time doctors.

Khan (1992) indicate that there is one physician for every 900 persons in the city. In a private clinic besides doctor, there are many other types of supporting staff. Service quality of a clinic also depends upon them. From the table 3.11 the nnmber of different types of employees is observed. It is observed from the table that 40.5% clinics have less than 10 number of employees and nearly 50% of these clinics are situated in zone-6. 33% clinics of zone-6 have more then 10 employees which indicates that majority of the better clinics are located in this zone. Zone-9 which includes Gulshan area also have some of better clinics as indicated by the number of employees.

Emergency or out door treatment facility is very important for a clinic. From the study it is observed that 59.5% clinics have outdoor treatment facility. Surgery or facility for surgery is an important aspect of medical treatment. If a clinic does not have any type of facility for surgery then the clinic will not be secured for the patient. From the study it is observed that 31% clinics have all sorts of surgical facility. It is observed that nearly 50% clinics (Table 3.12)

deal with specific type of surgery among them 31% have gynaecological surgical facility.

Table 3.11 Distribution of clinics by number of employees

Number of employees	Zone number					Total	
	2	5	6	7	9	No.	%
Up-to –10	1	5	7	2	2	17	40.5
11-20		2	2		1	5	11.9
21-30			4		3	7	16.7
31-40	1		2		2	5	11.9
41-50		1	2			3	7.1
51-60		1	2			3	7.1
60			2			2	4.8
Total	2	9	21	2	8	42	
Percentage	4.8	21.4	50	4.8	19		100

Source : Field Survey,1995

From Table 3.12 the percentage of different types of surgical facility is observed. It is also observed from the study that 57% clinics deal with specific types of diseases and 42.9% clinics deal with all sorts of diseases. From Table no.3.13 it is observed the percentage of different types of treatment facility. By analyzing Table no. 3.12 and Table no. 3.13 it can be can say that maximum clinics have gynecological surgery and as well as gynecological treatment facility .

Table 3.12 Distribution of clinics by type of surgery

Type of surgery	No. of clinic	Percentage
Liver	1	2.4
Heart	2	4.8
Gynaecology	13	31.0
ENT	1	2.4
Orthopaedic	1	2.4
Eye	1	2.4
Stone	1	2 4
Kidney	1	2.4
Total no. of clinic	21	50

Source : Field Survey,1995

Table 3.13 Distribution of clinics by type of treatment facility

Treatment facility	No. of clinic	Percentage
Heart disease	10	23.8
Eye disease	6	14.3
Gynaecology	28	66 7
Paediatric	15	35 7
e. n. t.	2	4 8
Kidney disease	6	14 3
Nuorosurgery	7	16.7
Surgery	6	14.3
Chest diseases	5	11 9
Nuromedicine	7	16.7
Orthopaedic	11	26 2
Other	3	2 4

Source : Field Survey,1995

Pathology laboratory is also an important part of medical treatment facility. A clinic's treatment facility will be improved if the clinic have its own pathological laboratory. From the study it is observed that 50% clinics have their own pathology laboratories. The rest are connected with some pathology laboratory in the city . It is observed from the study that many clinics have their own pharmacy. To give patient relief from the trouble of collecting medicine from outside of the clinic 52.17% clinics have their own pharmacy.

Table 3.14 Distribution of clinics by number of general beds and single-beded cabins

No. of beds/ single beded cabin	General bed		Single beded cabin	
	No. of clinic	%	No. of clinic	%
Up-to 10	18	42.9	22	52.4
11-20	9	21.4	3	7.1
21-30	2	4.8	2	4.8
More than 30	1	2.4	1	2.4
Total	30	71.4	28	67

Source : Field Survey,1995

Patients have to reside in the clinic to get proper treatment services. So each and every clinic have bed facility to provide proper treatment. These bed facility are generally three types :

1) General bed (ward)
2) Single beded cabin
3) Double beded cabin

Table 3.15 Distribution of clinics by number of double beded cabin

Number of cabins	No. of clinic	Percentage
1-2	6	14.3
3-4	4	10
5-6	1	2.4
More than 6	2	4.8
Total	13	31

Source : Field Survey,1995

Most of the clinics have general bed. From table 3.14 and 3.15 the number of different types of beds in different clinics is observed.

Table 3.16 Distribution of clinics by facility for modern treatment

Facility for modern treatment	Zone number					Total	
	2	5	6	7	9	No.	%
Yes		1	5		1	7	16.7
No	2	8	16	2	7	35	83.3
Total	2	9	21	2	8	42	
Percentage	4.8	21.4	50	4.8	19		100

Source : Field Survey,1995

Modern treatment facility is an important aspect to improve the quality of the private health care delivery system. But maximum private clinics are not using modern treatment technology such as lithotropsy, lasertherapy, Dialysis, computer diagnosis, incubator, ventilator etc From Table 3.16 it is observed that only 16 7% of existing private clinics are using modern technology. Out of

16.7% clinics 12% are in zone-6 and remaining 4.3% clinics are in zone-5 and 9. This shows that private Medicare clinics with better treatment facilities are concentrated in the high-income areas of the city.

Emergency electricity supply system is very important aspect for a private clinic. Beside other things if the electricity fails at the time of an operation the difficulty that will arise is easily understood. From the study it is observed that 51.1% clinics have emergency electricity supply system.

Ambulance facility is one of the most desired service for patient and this improves the quality of services of a private clinic. From the study it is observed that 21.4% clinics have ambulance facility. In many private clinic there are facility for the treatment of poor people. In our country maximum people can not go to the private clinic for treatment due to economical reason. For this reason many private clinics provide special treatment facility to the poor people. It is observed that 80.5% (Table 3.17) clinics have treatment facility for poor people and maximum in zone-6.

Table 3.17 Distribution of clinics by treatment facility for poor people

Treatment facility for poor people	Zone number					Total	
	2	5	6	7	9	No.	%
Yes	1	9	14	2	7	33	80.5
No	1		7		1	9	19.5
Total	2	9	21	2	8	42	
Percentage	4.8	21.4	50	4 8	19		100

Source : Field Survey,1995

3.7 COST AND USE

In a clinic there can be three type of bed facility such as general bed, single beded cabin, and double beded cabin. Each type of bed has different rate. The rate of different types of bed varies in different clinics of the zones. These variations depend on the quality of services, size, facility etc. given by the clinic. From table 3.18 we find the variation of rates among general bed, single beded cabin and double beded cabins .

Table 3.18 Distribution of clinics by rent of general bed, single and double beded cabin

Rent per day (in Taka)	General bed		Single beded cabin		Double beded cabin	
	no.of clinic	%	no. of clinic	%	No. of clinic	%
Upto 100	6	14.3				
101-200	21	50				
201-300	3	7.1				
301-400	3	7.1			3	7.1
401-500	1	2.3	3	7.1	3	7.1
501-600			4	9.5	1	2.3
601-700			13	30.9		
701-800			2	4.8		
801-1000			2	4.8		
1001-1200			3	7.1		
Above 1200			3	7.1		

Source : Field Survey,1995

For the same reason, minimum daily treatment cost also varies among different clinics of different zones. Table 3.19 presents daily treatment cost of clinics. It is observed that only 2.4% clinics provide treatment free of cost and these are located in zone-6. For 2.4% clinics minimum daily cost of treatment is more than Tk. 1000 and these are located in zone-9 which includes high-income residential area like Gulshan .For majority of the clinics (40.5%), however, the daily minimum treatment cost per day is between Tk. 200 and Tk. 400 .

Table 3.19 Distribution of clinics by minimum treatment cost per day

Treatment cost in tk. Perday	zone number					Percentage	
	2	5	6	7	9	No.	%
Free			1			1	2.4
Upto 200	2	5	4	1	3	15	35.7
201-400		2	12	1	2	17	40.5
401-600		1	2		1	4	9.5
601-800			2			2	4.8
801-1000					2	2	4.8
Above 1000					1	1	2.4
Total	2	9	21	2	8	42	
Percentage	4.8	21.4	50	4.8	19		100

Source : Field Survey,1995

The financial condition of a clinic deperid upon the number of monthly incoming patient to the clinic. Table 3.20 shows the number of patient taking admission in different clinics per year. The service quality and financial condition of a clinic can be judged by the number of indoor and outdoor patients per day.

Table 3.20 Distribution of clinics by number of incoming patient per year

No. of patient/year	No. of clinic	Percentage
upto 300	8	19
301 - 600	8	19
601 - 900	9	21.4
901 – 1200	7	16.7
1201 – 1500	1	2.4
1501 – 1800	2	4.8
1801 – 2100	1	2.4
More than 2100	6	14.3
Total	42	100

Source : Field Survey,1995

Table 3.21 Distribution of clinics by number of indoor and outdoor patient per day

Type of patient	No. of patient/day	No. of clinic	Percentage
Indoor patient	1-3	23	54.8
	4-6	11	26.2
	Above 6	1	2.4
Out door Patient	1-10	12	28.6
	11-20	3	7.1
	21-30	3	7.1
	Above 31	2	4.8

Source : Field Survey,1995

From Table 3.21 we get some idea about the number of indoor and outdoor patients per day in different clinics. For example if the number of patient is less than the number of bed in a clinic, the income of that clinic will not be good. Largest number of clinics have yearly incoming patients numbering between 600 and 900 . It is interesting to note that the clinics, located mostly in zone-6, have more than 2100 incoming patients per year.

Table 3.22 Distribution of clinics by income group of patients

Income group of patient (using the clinic)	No. of clinic	Percentage
High class	10	23.8
Middle class	27	64.3
Low class	6	14.3

Source : Field Survey,1995

The treatment cost in private clinics is much higher compared to government hospital. So it is very important to identify which income group is using private clinics. The service quality also depend upon the patient's income level. From Table 3.22 it is observed that maximum number of people using the private clinics are of middle income group. That is why the cost of treatment should be within the affordable range of middle income group.

CHAPTER - 4

ANALYSIS OF HOUSEHOLD DATA

4.0 INTRODUCTION

In the study of the Health care delivery system in Dhaka, the study of the families residing in different localities form an important and integral part of the study. Three-income level was selected from several neighborhoods such as Dhanmondi, Gulshan, Mohammedpur, Moghbazar, Santinagar, Siddheswari, Mirbagh, Santibagh, Malibagh and Rampura areas. The basic data or information that were taken into consideration about the families under study were period/duration of residence in the particular locality, age, education, income of household head as well as their opinion about various aspects of the clinics that included treatment cost availability of facilities quality of service etc. These basic information will help to understand the health and health related aspects of these families.

4.1 DURATION OF STAY IN THE COMMUNITY

The study of the duration of stay in the community is important, because it helps to find out the integration and interrelationship of families and their attachment with the locality they live in. People generally prefer to live or settle in localities

of similar socio-economic condition and environment as of their own and they can adjust with the environment and society easily. Table-4.1 regarding "Duration of stay in the community" shows that 26.5% of the families under study live in a locality only for a period upto 5 (five) years. This indicates these families are rather temporary residents living in an area and are much less attached to the community.

Only 14.7% of the families in the community are living here for 11-15 years, 28.2% of the families residing in the community for 6-10 years, whereas 29.8% are residing in the community for more than 15 years. Many of the families have been residing in the locality for more than one generation and as such community feeling, coherence and so on are well developed.

4.2 DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS

4.2.1 Age, Sex and Marital Status

Distribution of family head by age is presented in Table 4.2. The table indicates that majority of family heads belong to the age group 41 to 50 years. Thus, nearly 37% of the heads belong to this group followed by those (30.3%) belonging to the age group 31 to 40 years. About 26% of the family heads are 50 years or older while only 6.3% belong to the age group 30 years or less.

Table 4.1 Duration of stay in the community

Year of residing	Number of family	Percentage
Upto 5 years	63	26.5
6-10 years	67	28.2
11-15 years	35	14.7
16-20 years	42	17.6
More than 20 years	29	12.2
No reply	2	0.8
Total	238	100

Source : Field Survey,1995

Distribution of family heads by sex as presented in table 4.3 indicates that nearly 93% of the heads are male while only 7% are female. Marital status of the respondents is presented in table 4.4 which shows that nearly 97% are married while the rest are unmarried.

Table 4.2 Family Head by Age Group

Age of the head of the family	Number	Percentage
Upto 30 Years	15	6.3
31 to 40 years	72	30.3
41-50 years	87	36.6
50-60 years	50	21.0
More than 60 years	14	5.8
Total	238	100

Source : Field Survey,1995

4.2.2 Education and Income

Distribution of respondents by levels of education is presented in Table 4.5. The rate of literacy among the respondents is found to be 82.8%, which means that 17.2% are uneducated. It is interesting to note that more than half (53.3%) of the respondents have Bachelor's Degree or above while only about 10 percent have passed secondary and higher secondary certificate examinations.

The level of income reflects the economic condition of the people and in most cases determines the level of facilities available in a community. The level of income also determines the health condition of the people. Table 4.6 presents the distribution of respondents by levels of income. Largest percentage of the respondents (39.5%) has income upto 5,999 Taka while 3.4% have income between 6000 and 8999 Taka. About 57.2 percent of the respondents have income over 9000 Taka and nearly half of them earn more than 12500 Taka per month.

Table 4.3 Sex of the Family Head

Sex of the family head	Number of family	Percentage
Male	221	92.9
Female	17	7.1
Total	238	100

Source : Field Survey,1995

Table 4.4 Marital Status of the Family Head

Marital Status	Number of family	Percentage
Married	230	96.6
Unmarried	8	3 4
Total	238	100

Source : Field Survey,1995

Table 4.5 Education of the Family Head

Level of Education	Number	Percentage
Uneducated	41	17.2
Below S.S.C.	47	19.7
S.S.C.	10	4.2
H.S.C.	14	5.9
BA and above	126	53
Total	238	100

Source : Field Survey,1995

Table 4.6 Family Income per month

Family Income	Number of family	Percentage
Upto 2999 Taka	65	27.3
3000 to 5999 Taka	29	12.2
6000 to 8999 Taka	8	3.4
9000 to 12499 Taka	91	38.2
More than 12500 Taka	45	19.0
Total	238	100

Source : Field Survey,1995

Table 4.7 Number of clinics/health-care facility available in the community

Number of clinics	Number of respondent	Percentage
0	5	2.10
1-5	147	61.98
6-10	20	8.40
11-15	37	15.54
16-20	22	9-24
Above 20	7	2.94
Total	238	100

Source : Field Survey,1995

4.3 TYPES AND LOCATIONS OF CLINICS AND THEIR USE

From this study it is observed that at least one member of each family of all the communities has gone at least once to a clinic for treatment purpose. Out of 238 surveyed families respondent of 53 families say that at least one of their family member has gone to a clinic for outdoor treatment only while 185 respondents (i.e. 75.6%) says that at least one of their family members has been admitted to a clinic for treatment purpose. So it can be said that majority of all income group need indoors health care services.

Table 4.7 gives an idea about the availability of hospitals and clinics in the areas under study. It presents the distribution of respondents by their opinion about the availability of clinics/hospitals within the community (residential neighborhood) they live in. It is observed that only 5

respondents or 2.10% mentioned that they did not have any clinic/hospital within their community. On the other hand 147 respondents or nearly 62% mentioned that they have 1 to 5 clinics within the community they live in. About 36% of the respondents mentioned number of clinics ranging from 6 to 25 that are available within their communities.

From table 4.8 it is observed that 43.3% of the families are using only the health care centre for treatment that is available within their own locality while 54.7% of the families beside using their local health care facilities are using health care centre available outside their own locality.

Table 4.9 presents the distribution of respondents by the type of hospitals (government or private) being used for treatment. It is observed that majority of the respondents (66.4%) go to private clinics or hospitals for treatment. There is, however, close relationship between income level and the type of hospital being used. About 69% of the people having income upto 5,999 Taka go to government hospitals. Only about 31% of this group go to private hospitals for treatment. The percentage of people going to private clinics increases quite significantly as the income level rises. Thus, 75% of the people having income between 6,000 to 8,999 Taka use private hospital compared to only 25% of this group visiting government hospitals. The percentage of people using government hospitals come down to almost zero beyond income level of 12,500 Taka.

Table 4.8 Using Local or outside health care centres

Local/Outside centre	Number of family	Percentage
Local	108	43.3
Outside	130	54.7
Total	238	100

Source : Field Survey,1995

Thus the private health care centres are becoming more popular day by day than the government health care institutions for treatment purposes. This is due to the fact that the private health care centers being privately owned commercial institutions extend personalized service and attention that is valued by the patient and their families.

Table 4.9 Type of health care centre generally used for treatment

Family Income	Type of Health Centre used			
	Government		Private	
	Number	Percent	Number	Percent
Upto 2999 Taka	47	72.3	18	27.7
3000 to 5999 Taka	20	69.0	9	31.0
6000 to 8999 Taka	2	25.0	6	75.0
9000 to 12,499 Taka	11	12.1	80	87.9
More than 12,500 Taka			45	19.0
Total	80	33.6	158	66.4

Source:FieldSurvey,1995

4.3.1 Distance of Clinics

Table 4.10 presents the distribution of patients by the distance of clinics from their residence. Nearly 54% of the patients went to a clinic less than 1 mile from

their residence. For nearly 12% of the patients the clinics were within 2 miles while for 16% the clinics were 2 to less than 3 miles away form their residences. Only about 18% of the respondents went to clinics beyond 3 miles. This shows that people prefer clinics, which are close to their residences.

Table 4.10 Distance of source of health care centre used last time

Distance in Mile	Number of respondent	Percentage
Less than 1 mile	79	53.7
1 Miles to less than 2 miles	18	12.3
2 miles to less than 3 miles	23	15.6
3 miles to less than 4 miles	16	10.9
4 miles to less than 5 miles	5	3.4
5 miles and above	6	4.1
Total	147	100

Source : Field Survey,1995

4.3.2 Means of Transportation

Spatial mobility has a positive relation with accessibility and as it is a fact that means of transportation involves money and time, there is a positive correlation between income and the type of mode being used. Table 4.11 shows that about 25.9% of the respondents made use of rickshaws to reach the medical centre. From this table it is also found that majority of the respondents (51.7%) used private cars to reach the clinics. While 12.2% used baby taxis, 9.5% of the respondent went on foot to reach the health centre. Only one person was found to use ambulance.

Table 4.11 Means of transportation

Means of transport	Number of Respondent	Percentage
On foot	14	9.5
Rickshaw	38	25.9
Babytaxi	18	12.2
Private car	76	51.7
Ambulance	1	0.7
Total	147	100

Source : Field Survey,1995

4.3.3 Reasons for not going to Government Hospitals

We have already observed that majority of the respondents (55.9%) go to private clinics for treatment purpose. They have mentioned eight reasons for not going to the government hospitals for treatment. Maximum number of the respondents stated that the dirty and untidy environment is the real cause for avoiding Government hospitals. According to their opinion (81.6%) most of the government hospitals are nasty, dirty and not at all clean. Duty doctors are not usually available timely. Poor service quality continued scarcity of beds /cabins are also major causes that deter people from going to a government hospitals (Table-4 12).

Table 4.12 Reasons for not going to Government Hospitals

Reasons	No. of Responses	Percent of Respondent
Doctors do not refer	14	9.5
Environment dirty and untidy premises	120	81.6
Very expensive	10	6.8
Required facilities not available	55	37 4
Scarcity of beds/cabin	111	75.5
Poor service	119	81.0
Doctors are too busy to give service in Time	121	82.3
Absence of govt. hospitals in the Locality	37	25.2

Source : Field Survey,1995

4.3.4 Reason for Going to Private Clinics

Table 4.13 presents the distribution of respondents by reasons for going to a private clinic. It is observed that good environment, facilities for all types of treatment and availability of cabins are major considerations for preferring treatment in private health care centres. It is interesting to note that cost is not an important factor if judged by the number of respondents preferring private clinics for this factor. Only 5.1% respondents mentioned `less cost' as the reason for their choice of private clinics. Other important factors considered by the people for choosing private clinics are timely availability of doctors (80.8%), availability of cabin/bed (78.2%) and the availability of required treatment facility (69.2%).

Table 4.13 Reasons for Going to Private Clinics

Reasons	No. of Responses	Percent of Respondent
Less distance	43	27.6
Doctor's advice	56	35.9
Friend/relatives advice	64	41.0
Less cost	8	5.1
Good environment	122	78.2
Facilities for all type of treatment available	108	69.2
Cabin/bed available all the time	122	78.2
Timely availability of doctors	126	80.8

Source : Field Survey,1995

The analysis above indicates that poor quality of service, bad environment, unavailability of doctors and cabins are the major reasons why a significant proportion of people go to private clinics for treatment despite the fact that these are quite expensive. It is mainly the economic reason why people still go to government hospitals for treatment. Table 4.14 presents the distribution of respondents by reasons for going to government hospitals. Thus, all the respondents (100%) indicated that they go to government hospitals because of less cost. The other major reason indicated by the respondents is the availability of the type of treatment facility required by the patient.

Table 4.14 Reasons for going to government hospital

Reasons	No. of Responses	Percent of Respondent
Less distance	4	5 0
Doctor's advice	5	6.3
Friend/relatives advice	25	31.3
Less cost	80	100.0
Good environment	21	26.3
Treatment Facility available	49	61.3
Cabin/bed available all the time	20	25.0
Timely availability of doctors	36	45.0

Source : Field Survey,1995

4.4 EXPENSES FOR TREATMENT

It is obvious that private hospitals are more expensive than government hospitals. Expenses for treatment, however, depends on the types of patients, their ailments, duration of stay in the clinic as well as the quality of doctors and equipment's used.

4.4.1 Patient Type

As regards the patient type, the respondents were asked if the last patient was a child, adult or a pregnant women. The distribution of respondents by their answers is presented in table 4.15. It is observed that nearly 48% of the patients

were adult, 34% were children and 18% were pregnant women.

Table 4.15 Type of patients

Patient	Number	Percent
Child	50	34.0
Adult	71	48.3
Pregnant Women	26	17.7
Total	147	100

Source: Field Survey,1995

4.4.2 Duration of stay

Table 4.16 shows that 33.3% of the patient stayed in the clinic for 5 days only, while 32.7% for 6 to 10 days, 19.7% for 11 to 15 days, 8.2% for 16 to 20 days, and 6.1% for more than 20 days. It is observed that about two thirds of the patients stayed in the clinics for 10 days or less.

Table 4.16 Duration of stay in Clinics

Duration of Stay in Days	No. of Respondents	Percentage
Upto 5 days	49	33.3
6-10 days	48	32.7
11 to 15 days	29	19.7
16 to 20 days	12	8.2
More than 20 days	9	6.1
Total	147	100

Source: Field Survey,1995

4.4.3 Treatment Cost

Distribution of respondents by treatment costs of a single patient is presented in Table 4.17 largest number of respondents (about 18%) spent between 10 to 15 thousand Taka for a single patient. Nearly 48 percent of the respondents spent more than fifteen thousand Taka while about 34 percent of the respondents spent less than ten thousand Taka for treating a patient in a private clinic. Thus, it is quite expensive to treat a patient in a private clinic if we consider the income level of the people in Bangladesh.

Table 4.17 Cost Involved in the treatment

Cost involved in the treatment	No. of Respondents	Percentage
Upto Tk. 1,000	14	9.5
Tk. 1,001-Tk.5,000	14	9.5
Tk. 5,001-Tk.10,000	22	15.0
Tk. 10,001-Tk.15,000	27	18.4
Tk. 15,001-Tk.20,000	22	15.0
Tk. 20,001-Tk.25,000	15	10.2
Tk.25,001-Tk.30,000	7	4.8
Tk. 30,001-Tk.50,000	9	6.1
More than Tk.50,000	17	11.5
Total	147	100

Source : Field Survey,1995

Table 4.18 gives a picture of the average treatment costs in government and private hospitals. Average treatment cost in private hospitals is almost 5 times the average treatment cost in government hospitals. Treatment cost also varies

between first and second time. Treatment cost is found to be higher during the second time indicating perhaps the effect of inflation.

Table 4.18 Average treatment cost per patient (in Taka)

Time	Private Hospital	Government Hospital
First Time	17,749	3,653
Second Time	19,070	4,000

Source FieldSurvey,1995

4.5 MANAGEMENT AND QUALITY OF SERVICE IN PRIVATE CLINICS AND HOSPITALS

The way a hospital is managed largely influences the attractiveness of it. In recent years private hospitals have become more attractive than the government hospitals probably due to the deterioration in the quality of management of government hospitals. In this study we tried to know people's opinion about the quality of management of private hospitals as reflected in the quality of services of doctors and nurses, supply of food and medicine, availability of beds/cabins etc.

4.5.1 Quality of Doctor's Service of private clinics

In general, people are satisfied with the quality of service rendered by the doctors. It is clear from Table 4.19, which indicates that nearly 87% of the respondents termed doctor's service as good. According 11.6% of the

respondents, doctor's service was moderate compared to only 1.4% who thought that the service was of poor quality.

Table 4.19 Opinion about doctor's service of private clinics

Service quality	No. Respondent	Percentage
Good	128	87
Moderate	17	11.6
Poor	2	1.4
Total	147	100

Source : Field Survey,1995

4.5.2 Quality of Nurse's Service of private clinics

People are also found to be satisfied with the way nurses do their jobs as is evident from table4.20, 85% of the respondents thought that the quality of services of the nurses was good while about 14% found their service quality as moderate. Only 1.4% of the respondents maintained that their service quality was poor.

Table 4.20 Opinion about quality of services of nurses of private clinics

Service quality	No. respondent	Percentage
Good	125	85.0
Moderate	20	13.6
Poor	2	1.4
Total	147	100

Source : Field Survey,1995

4.5.3 Supply of Medicine and Food

Majority of the respondents mentioned that their patients received medicine and food from the clinics. 76.4% of the patients received medicine while about 71% of patients received food from the clinics. As regards the quality of food supplied, nearly 80% mentioned that the food was good. 11% of the patients thought that the quality of food was moderate while for the rest 9% the quality of food was poor.

Table 4.21 Supply of Medicine and Food

Item	If Supplied				Total	Percent
	Yes		No			
	Number	Percent	Number	Percent		
Medicine	112	76.4	35	23.6	147	100
Food	104	70.7	43	29.3	147	100

Source: Field Survey,1995

4.5.4 Availability of Beds/Cabins

One of the main reasons why people go to private clinics for treatment despite high cost is the availability of bed/cabin in times of need. This is clear from table 4.22 which indicates that in 90.5% of the respondents did not face any problem in getting bed/cabin when they went to a private clinic for treatment.

Table 4.22 Availability of Beds/Cabins

Availability of Beds/Cabins	No. of Respondent	Percentage
Available	133	90.5
Not available	14	9.5
Total	147	100

Source: Field Survey,1995

4.5.5 Needed Improvements

Although people in general, were satisfied with the private clinics, particularly the quality of services of doctors and nurses, they expressed the view that further improvements are needed. Table 4.23 presents the distribution of respondents by the types of improvements suggested by them.

Table 4.23 Improvements Needed for Private Clinics.

Type of Improvements	Number of Responses	Percent of respondent
More bed/cabin	35	23.6
Modern Equipment	124	83.8
Full-time Doctors	69	46.6
Improvement of Service	94	63.5
More Skilled Nurse	92	62.2
Regular Supply of Medicine	106	71.6
Better Food	77	52.0
More clinics in each zone	37	25.0

Source: Field Survey,1995

About 84% of the respondents felt the need of modern equipment while about 72% felt that supply of medicine should be regular. Other important improvements suggested by significant number of respondents were quality of service (63.5%), more skilled nurse (62.2%) and better food (52%). More full time doctors were also suggested by about 47% of the respondents.

CHAPTER - 5

SUMMARY OF FINDINGS AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

Dhaka, the national capital of to day was only provincial capital just over two and a half-decade ago. Compared to today Dhaka was much small in size in those days housing a much smaller size of population of Dhaka. The development of Dhaka was very slow in all sector, and of those the health sector' as it happens in the case of an underdeveloped country, was very much neglected. The health care delivery of Dhaka was limited only to the Govt. hospitals and Heath centres.

With the emergence of Bangladesh in the year 1971 when Dhaka became capital of the country the importance and status of the city changed overnight. It became the seat of Government, centre of all national activities including national policy making with respect to economic, financial and industrial activities and the administration of the whole country. The city experienced a sharp rise in its population of all walks of life and profession migrating from all parts of the country, far and near. To accommodate the rising population the city started expanding and new settlements grew all around the city. With such rapid urbanization the demand for necessary health care facility grew

very rapidly. The delivery of health care facility through the few existing Govt. general Hospital, specialized teaching hospitals, departmental hospitals with their total bed of 5323 and also few medical centers of the Government just failed to cope up with rising demand.

It was more so, because these institutions of the Govt. besides serving the Dhaka City has to extend their services to patients from all over the country. And as a result these institutions always remain over crowded.

It is under such a situation of inadequate Medicare facility that private Medicare/ Health care establishments started growing in and around the city from the mid- seventies. In this study of the private Heath care delivery facility in Dhaka City five zones have been selected out of ten Dhaka City Corporation zones. The private Health care Delivery facilities in these zones has been studied from the following angles (I) Locational and distributional patterns; (ii) Typology, size and facilities available and their spatial variations; and (iii) Cost and quality of the private health care services and accessibility of the various income groups to such services.

Study of the health care delivery through Private clinics and hospitals in the five zones shows that the distribution of the Private health care clinics has been markedly influenced by the economic consideration of the prospective users of the establishments and as such most of these institutions are concentrated in zone -6 which comprises of the Dhanmondi Residential Area, Mohammadpur, a mixed society of upper and middle class people and

Tejgaon, an industrial area. It is important to note that zone 6 is the central area of the city having the largest population while zone-9 comprises of two high in-come areas, Gulshan and Banani. Zone-5 comprises of Motijheel and Ramna, the administrative and commercial centres of the city. It is thus observed from the study that distribution of private health care services provided to the city dwellers are disproportionately concentrated in some particular areas instead of being distributed in an equitable and balanced manner.

The study has revealed that though the Private Health care Delivery facility has of late grown considerably yet it lacks seriously to serve the need of the large number of least privileged section of the population living in the slums of Dhaka city where the health situation is dangerously bad. The infant mortality rate (IMR) in these slums is over 150 per 1000 live births against the overall IMR of 88 for urban and 107 for rural areas in the whole country. This is due to the fact the Private health care delivery facilities in Dhaka City essentially cater to the needs of the well to do section of the society and the low-income group is left behind.

Modern treatment facility is an important aspect to improve the quality of the private health care delivery system. Modern treatment facility means-leprous copy, laser therapy, incubator, ventilator, dialysis etc. which are very necessary for treatment. It is found from the study that 14.3% private clinics are using modern treatment facility. Due to the scarcity of modern treatment facility many well off patients go outside of the country for better treatment

purpose. Most of the clinics having modern treatment facilities are concentrated in zone-6 and 9 which indicates that these private clinics with better treatment facilities are concentrated in the comparatively high-income areas of the city where treatment cost is also high. As a result these facilities are out of reach of the lower-middle and low-income people.

Though ambulance facility is one of the most desired services for patients and which improve the quality of the health care delivery system, it is found from the study that only 21.4% clinics have ambulance facility. Absence of this facility is also a reason for poor health care delivery system of most of the clinics of Dhaka City.

One of the reasons why majority of clinics (62%) has monthly expenditure less than Tk. 100,000 is that there clinics employ a small number of full time doctor. About 24% of the clinics employ only 1 to 3 full time doctors. The number of employees is also very small for a large number of clinics only upto 10 for about 40% of the clinics.

Minimum Treatment cost also varies quite significantly among the clinics. For nearly half of the clinics, minimum treatment cost per day varies between 200 to 600 taka. Most of these clinics are located in the high-income areas such as Dhanmondi and Gulshan.

Number of patients getting admission into a clinic also varies quite significantly. For nearly 55% of the clinics, the number of patients getting

admission per day varies between 1 to 3. Most of these patients also come form the same locality where the clinics are located.

It is found from the study that the service of private clinics are taken largely by middle income group, although the treatment cost of these private clinics is quite high The reason why private health care centres are becoming more popular day by day is the fact that government hospitals are not maintained properly where duty doctors are not usually available in time. Poor service quality and continued scarcity of beds/cabins are other causes that deter people from going to a government hospital. On the other hand private health care centres being privately owned commercial institutions extend personalized services and attention that have great impact on the patient and their families.

It is also found from the study that maximum people received treatment from a health care centre, which is within their community and is accessible. Middle and higher middle income people are the major clients. For them good environment, facilities for all types of treatment and availability of beds and cabins are major considerations for preferring treatment in a particular private health care centre.

5.2 RECOMMENDATIONS

Based on the observations and findings from the study of the existing private health care delivery system in the Dhaka City, the following recommendations are made. These recommendations, if implemented would greatly improve the present private health care delivery system in the city and thereby would deliver/render the much needed health care and Medicare services more effectively to a greater number of city dwellers.

1. From the study it is found that the existing private health care establishments has so far been largely developed in only a few particular wards in the different zones. As a result of this, a large number of city dwellers are deprived from the benefit of the better and personalized Medicare service that are extended by these establishment. Obviously this is due to profit considerations of the owners. This practice should be changed and for this incentives may be given to the investors so that hospitals can be established at places where more people can avail the services of such hospitals. This will in the long run compensate the initial reduction in profit margin of these institutions.

2. For the middle income people who are the major users of the private Medicare establishments, the cost consideration is undoubtedly the most important. As such care should be taken to reduce the cost of

treatment and other facilities to an affordable level to these income group. This will also help people to become more health care minded.

3. In the existing private health care delivery system, most of the situations are run by consultant physicians and surgeons who attend to more than one clinic. This practice, therefore makes the clinics dependent on their services and limits the scope of services extended by these clinics. The private clinics by now have become quite popular to the city dwellers, therefore it is how time that these institutions build up a work force of their own instead of depending on consultant doctors belonging to govt. hospitals. In fact this will create a scope for younger physician to gain employment and experience, which no doubt will be another indirect service to the nation.

4. The private health care establishments should have a set minimum standard of the Medicare facilities. At present there in no such standard minimum for such clinics.

5. Though, it may not be possible for all private clinics, yet bigger clinics could make some scope for research facilities in various fields, like those in the developed countries. This attempt would greatly contribute to the present Medicare delivery system in the country.

6. Now-a-days we find that many people often go abroad for treatment of different diseases. The reason is that most of the existing private

Medicare clinics mainly provide generalized treatment. There are only a few private clinics giving specialized treatment. The private clinics could play a major role in arresting this trend of going abroad for treatment. Since the private clinics to not have official bottlenecks like those in the public sector, these could easily make a comprehensive study about the diseases mostly, for which people go abroad. These clinics then can arrange for treatment of such diseases by importing new technology, and enhancing their facilities.

7. We have already seen that the buildings used by most of the private clinics were originally constructed as residential buildings. Consequently many of the requirements of a modern hospital could not be met. Therefore restrictions should be put on the use of residential buildings for the purpose of clinics. Proper design criteria should be formulated and enforced.

8. In addition to treatment facilities and their qualities, supply of food and medicine is also very important for a clinic. Care should be taken to see that the supply of medicine is regular and quality of food is at the desired level.

9. Although majority of the respondents are satisfied with the quality of services of doctors and nurses, they have expressed the opinion that further improvement in the quality of service is needed

10. The private health care institutions in Dhaka city being mostly of single ownership suffer largely from limitation of funds and as such can not provide the necessary modern facilities This could be solved if these institutions are established jointly and sell their resources together and also in collaboration with NGO's providing health care facilities.

11. In Dhaka City hospitals are used for teaching and special purpose as well as for common curative treatment, but there is no generalized hospital in the city like the ones in district and thana headquarters meant only for treatment purposes. In generalized hospitals the doctors are free from teaching loads and therefore can devote more time for the treatment of the patients. This aspect needs consideration while developing government hospitals in future.

Appendix-A

DESIGN CRITERIA OF A HOSPITAL FROM ARCHITTECTURAL VIEW POINT

A hospital may be defined as a building in which patients are cared for, nursed and treated. This definition is in itself sufficient to give an idea of one of the difficulties with which the person who has to build a hospital is faced.

The problems, and possibilities, confronting architects responsible or designing a general hospital are prodigious. Apart from sheer size and technical complexity, terms of architecture, the factors involving human and social need are concentrated in their most profound form. Inevitably the general planning procedures are rather more intricate and longer to carry out than those of, for example, a housing or educational project. This is due in part to the greater number and variety of highly qualified specialists, who must be consulted and convinced at each state of development. Further difficulties are encountered as a result of the lack of basic routing research which should have been done years ago and which now has to be done concurrently with existing hospital facilities in the city.

A hospital should have the following facilities

1. Out patient facilities
2. Diagnostic and treatment facilities

3 The inpatient facilities

4. Emergency facilities

5. Hospital service departments

6 Prayer room

7. Space to keep deadbody

1. Out patient facilities

The out patient department (OPD) is the part of contact between hospital and community. It include-

1.1 Entrance

The entrance to the out patient department should be approached from the main flow of traffic into the hospital proper. It should be in close proximity to or incorporated within the main entrance of the hospital.

1.2 Movement of patients

The movement of pattern of the OPD is seen to be dominated by the movement of the patients while the medical personnel engaged in the OPD are relatively stationary.

1.3 Sequences of activities

It is usually seen that any patient needs to go through a sequence of activities with four major steps:

a) ***Arrival***

The droppings/parking places and forecourt area are the first points of contact of a patient with the hospital. The environment of these spaces should be as agreeable as possible.

b) ***Reception, registration and waiting***

This is the place were the patient's first come into contact with hospital personnel. So this place should be as welcoming as possible. A waiting area for patients should be provided and be easily accessible to the main reception.

c) ***Medical process***

The medical process involves a sequence of activities, which include,

- History taking

  Examination
- Investigation
- Treatment

Examination and treatment room should contain a lavatory and have sufficient room for patients changing area and examination table. A simple type of operation theatre is needed in the out patient department.

d) Dispensing and leaving

The dispensary should be so located that crowding in this area do not disturb other functions.

2. Diagnostic and treatment facilities

The facilities in this area equipped for the investigation and treatment of patients. The health care service centers should have the following departments,

1. Radiology department
2. Clinical and pathology department
3. Surgical department

Radiology department

The room must be shielded against escape of rays in order to protect the people in adjoining space. Doors should be shielded with lead to a height of feet. Floors should be shielded with lead. The exterior walls should be at least at a distanced of 20 feet from another building. This will reduce cost for radiation protection. X-ray department should be located on the ground floor and close to the elevators or ramps, which will be conveniently accessible, both from out patient and inpatient. The optimum size of x-ray a room is about 14' x 18', ceiling height requirement varies for different X-ray machine but a height of a 9'-6" is reasonable.

Pathology department

Guide plans developed by U.S. public Health service indicate that the technical areas will account for about one half of the space requirement of the laboratory. There are different recommended module sizes, for example the Public Health Serviee recommends a module of 10' X 20'

others recommend the use of an 11' X 20' module. Laboratories should be so oriented as to have adequate natural light from the north with excessive direct solar radiation.

Surgical department

Surgical department contains actual operating rooms, the scrub areas, the patient holding or incuction areas and postoperative room. The highest level of cleanliness should be maintained here. It can be located on the upper floor to get away from dust and to north light and no longer holds, with the general use of artificial light and sealed windows. Free floor space of operating rooms should be 18' x 20' or approximatcly 350sft. many surgeons and surgical supervisor recommend 20' x 20' free floor space. The size of

post- operative room vary from one and a half to two beds per operations room.

3. **The inpatient facilities**

Some paticnts need more than just ambulatory care, and in such instances it is found necessary to provide the patient with supervised care with a period of stay in the hospital. The requirement of inpatients faeilities include, ward unit which should consist of patient lounge, visitors lounge, prayer room, surgeons or physicians room, nurses room, pantry and other ancillary room, cabin's delivery room etc.

4. **The emergency department**

Emergency activity is intended to be a casualty center offering services 24 hours per day. Medical, surgical and nursing services as well as first aid are provided. Separate entry point should be provided for this department and easy access should be available from this department to all the major hospital departments particularly to the outpatient, orthopaedic and fracture clinics. Ready access to the X-ray diagnostic department.

5. **Service department**

They are responsible for the collection and delivery of the necessary items needed in various hospital departments.

Food service System

Hospital catering has to serve both patients and staff. For food service U.S. Public Health Service suggested 30 to 40 sft. per bed exclusive of floor pantries, bulk food storage and employee locker room. From economic point of view a centralised kitchen is considered best. In the service area where meals are portioned and assembled in a hospital may be located in the central or main kitchen or in a floor pantry.

Staff dining rooms usually are planned so that they are immediately adjoining the kitchen and thus facilities service.The kitchen and its annexes should be well lit and well ventilated. This will prevent kitchen

odour. Precaution must be taken to prevent odours from reaching other parts of the hospital. The kitchen requires a delivery entrance. The best site for the kitchen is probably at ground level.

Laundry

Laundry arrangements are very important from the point of view of control of infection. The dirty linen from the wards and operating theatres may be heavily infected, and even ordinary linen such as sheets and pillowcases from the ward may be a source of serious danger unless carefully handled. Dirty and clean should be kept entirely separate, both in the laundry or linen room.

The lauudry department, as a major heat user, should be sited near the boiler plant, but heat, dust and noise from the latter should not be transmitted to the laundry building. It should have easy access to the main service roads of the hospital.

The pharmacy

The location of pharmacy should be near the out patient department. Consideration should be given to locating this unit where storage may be shared, supervision concentrated, and distribution controlled.

The essential functions of this department are three :

- Dispensing
- Compounding
- Manufacturing

The dispensing pharmacy should be readily accessible to the public and if possible to a cashier. Waiting space is desirable for use while the prescription is being filled, dispensing window must be provided.

Central sterile supply

This department, is an extremely important part of the service group. In this unit all the items which have been returned from different departments are cleaned, assembled, sterilised, put up in packs and store for distribution.

The technique of sterilisation stem from the fact that an object held at the temperature of boiling water 212 F or higher for 15 minutes is assumed to be sterile, that is free from bacteria. An office room will be provided with the central sterile supply of the hospital for receiving and distributing of the instruments.

Central store

To ensure a regular and quick delivery of supply a central store for hospital is necessary. It must be of adequate size and must be conveniently accessible by trucks or push carts for loading and unloading.

House keeping

This department keeps the hospital clean relating mostly to prevention in infection. This department supplies towels, soaps, toilet, utensils and

papers. The housekeeping department needs a central workroom and storage place for supplies and equipment's.

Administration

The tenn administration, applies to each departmental operation and its relationship to the total care program.

Waiting and information

As a public service institution, each hospital should contain a waiting area.

TRAFFIC IN HOSPITAL

The main aim of a hospital designer in respect of traffic should be to help to reduce unnecessary movement of certain types of traffic, such as staff and patients This can be achieved by correct location of department, entrance and vertical transport and by arranging corridor systems so that journeys are as short as possible. A designer needs to understand hospital traffic. He needs approximate information on the quantity, type purpose and urgency of traffics between departments since initial decisions on bnilding layout influence both traffic behaviour and long term planning flexibility of the building.

Relationship of departments in a hospital layout may have some effect on efficiency and will certainly determine convenience. In addition the effectiveness of the hospital organisation and building will be influenced by having the correct type, size and number of mechanical systems to deal with traffic.

Appendix-B

STANDARD OF HEALTH CARE FACILITY

Bangladesh is one of the poorest country of the world. This poor living condition, ignorance and inadequate health care facilities create infection and diseases, which will take life of people year after year. To solving these problems we have to know the standard of health care facilities, which is absent in Bangladesh. Hospital will be more generally used for services to ambulatory patients who will utilise all facilities. Here people will be admitted for over night care. The size of a hospital will be measured by total volume of its professional services rather than by the number of patient days of care providing during a period of time. The need of a health center is to serve a large area.

A hospital has to have minimum technical and administrative facilities, consisting of an operating suite with sterilisation equipment, a laboratory for simple analysis, a x -ray unit, general services (kitchen & laundry) and a reception and accounts section (Bridgeman,1955). The accessibility for health center should be within a walking distance between 1/2 to 1 mile from every home (Sundaram,1977). Certain guideline has been given in India for the location of hospital in the industrial township. It should not be located too for from the main town where easy transport facilities may not be available. But easy transport is not the only consideration, psychological factor also has to be considered. If a hospital is located far from the main town the patient will feel segregated, lonely and neglected and such feeling will be a barrier for

early recovery. So the main hospital should be located in the center of the town with its entire noisy atmosphere not on the fringes of the town for reasons mentioned above, but midway between the two extremes. The hospital of local care should cover at least 60,000 people for general medicine, general surgery, maternity, communicable discuses etc.

TABLE NO. 01.

Standard for health facilities in India

Type of medical provision	Suggested population threshold	Space standards	Bed ratio
1. Small dispensary	4000-5000 (neighbourhood level)	0.20 acres	-
2. Health clinic	12,000-15,000 (Sector Level)	0.50 acres	4 bed per 1000 population
3. Health center	35,000-40,000 (District level)	1.50 acres	-do-
4. City hospital	100,000-150,000 (City or town level)	2.50 acres	-do-
5.Regional hospital	250,000-3000,000 (City and its region	3.50 acres	-do-

Source: Sundaram,1977

STANDARD OF EXISTING HEALTH CARE FACILITIES OF DHAKA CITY

Health care services plays an important role in development of a nation and there by country. For this reason it is necessary to design and implement such changes that enhances the performaoces of the total health services delivery system in a balanced and integrated manner but from the study it is observed that the health care facilities of Dhaka city are not equally distributed rather

they are concentrated in some areas especially in Dhanmondi, Eskaton, Outer circular road of Moghbazar and in Motijheel.

It is also found from the study that 80% of these clinic are housed in residential buildings so standard requirement of hospital facilities and required room standard is naturally absent, e.g. in many cases the operation theatre are found to be much bigger than required, as because in most of these cases the living room is converted to operation theatre. Where as the size of the post operative room is smaller than required of in case of many clinics there are no post operative room at all. Also the size of the wards are small and there is congestion of beds than it should be.

Out door treatment facility is very important for a clinic. From the study it is observed that 59.5% clinics have outdoor treatment facility. Facility for surgery is an important aspect of medical treatment. If a clinic does not have any facility for surgery then the clinic will be below standard from the viewpoint of space requirement. It is observed from the study that only 31% clinic have all sorts of surgical facility and remaining of 69% clinics some have duly equipped operation theatre where operations are done by consultant surgeons on payment basis and many of the clinics does not have any operation theatre at all. Pathology laboratory is also an important part of medical treatment facility. If a clinic have its own pathology the treatment quality of that clinic will obviously be improved. From the study it is found that 50% clinic have its own pathology laboratory. Rest 50% of the clinics, which does not have its own pathology laboratory 19% of that are connected with some pathology laboratory. Modern treatment facility also improve the

quality of the private health care delivery system, but only 14.3% private clinics using modern treatment facility. It is found from the study that only 21.4% clinics have ambulance facility. Abseuce of this facility is one of the reasons for poor health care delivery systeu of most of the clinics of Dhaka City.

BIBLIOGRAPHY

1. Bridgeman, R.F.(1955), The rural hospital, Its structure and organisation

2. Khan, Nurul Islam (Feb,1992), Social services for the urban poor (A case on Dhaka city corporation and Mymensing pourashava)

3. Ali, M.Azam, (Nov,1991), A study to assess the PHC services needs for the urban poor, and learning experience of some tried PHC interventions, prepared for the World bank, Bangladesh

4. BBS, (1987), Statistical pocket book of Bangladesh

5. BBS, (1989), Statistical pocket book of Bangladesh

6. BBS, (1990), Statistical pocket book of Bangladesh

7. Hellen Keller International (Feb,1991), National surveillance program data Collection, Technical, report

8. Mannan, M.A. (Feb,1987), Mothers and child health in Bangladesh, BIDS research report

9. Ministry of land, (1989), Government of Bangladesh, Dhaka, Mahanagar, Busta, Samasha niroshan committee report, Dhaka

10. Urban PHC workshop report (June, 1994), Word based urban primary health care (PHC) system development, GOB-DUCHP-City corporation initiative

11. Directorate general of health services, Government of Bangladesh, (1985), Bangladesh health services report

12. Directorate general of health services, Government of Bangladesh, (1989), Bangladesh health services report

13. Pasha, G.M.M.Kamal, An unpublished project report, Spatial distribution of socio-economic facilities in Dhaka city

.Sundaram, (1977), Urban and regional planning in India

dgeman R.F. and Roamer, M.I. (1973), Hospital legislation and ospital system

16.Allen, R.W. and Karolyl, I.V. (1996), Hospital planning handbook

17.Lewelyn Davis R. and Macaulay, H.M.C. (1966), Hospital planning and administration

18.Bryant,J. (1969) Health and developing world

19.Kamal, A.K.M. (1987), Study an health need of mothers and children under five living in a selected slum (Babupura) of Dhaka City, NIPSOM

20.Khan, M.S.H. M.(1987), a Study on health problems of refugees at Mirpur area of Dhaka City

21.Khan,Leena Ferdous (1982), Character use and availability of health facilities in Dhaka City, Unpublished MURP Thesis, Department of U.R.P, BUET, Dhaka

22.Rahman,Shaheda(1982), An alternative approach to MCH Care problems in Bangladesh, Unpublished thesis for the degree of master of Engineering in Architecture

23.Begum,Afroza(1987),250 Bed private hospital at Gulshan,Dhaka, Unpublished B.Arch Thesis, Department of architecture, BUET, Dhaka