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Health-care seeking of Slum Residents in Dhaka-City, Bangladesh: chronic illnesses, delivery cases, hospitalisation and surgical cases

Health-care seeking studies

Health Systems Research Team

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Contents

Foreword

This is the second publication in a series of Working Papers on health-care seeking from three studies, conducted by the Health Systems Research team of Health Economics Programme, Public Health Sciences Division, ICDDR,B between 1993 and 1998. The first study collected information from the slum population of Dhaka-City, the second one from its non-slum population, and the third one from a peri-urban area.

The overall objective of these studies was to get a better understanding of health-care use and spending in the different sub-populations, and to contribute with the findings to the development of more appropriate health policies in Bangladesh and in other countries with similar socio-economic and/or cultural characteristics.
The specific objectives were (1) to determine the components of health-care decision processes, i.e., the reasons and constraints operating in health-care choice making, the perceived illness patterns, and the health-care options that the study populations perceive to be available; (2) to determine and investigate variables that contribute to health-care choice making and utilization; (3) to describe the pattern of direct user expenditure on health-care; (4) to study indirect user expenditure, namely loss of income due to illness; and finally, (5) to examine aspects of user satisfaction with health-care received.

For each study, a similar research strategy was used, consisting of three phases and combining qualitative and quantitative research methods. The first phase, a cognitive study generated data on the components of health-care decision making. It was followed by a 6-month longitudinal survey, in which data were collected on all new illness episodes and existing chronic ones through fortnightly visits. Simultaneously, selected socio-economic and demographic variables were monthly followed up. Each survey was preceded by a more extensive baseline survey on a group socio-cultural and economic variables. Finally, a series of case studies were conducted on specific health-care seeking experiences, reported during the longitudinal survey.

A number of working papers will be published on several parts of the findings of each study. This Working Paper presents the illness profile and health-care utilization pattern of the 905 households in the sample of the slum study's baseline survey and socio-economic and demographic follow-up. They are complemented and annotated, where appropriate, with findings from the literature. The interested reader may also consult the following Working Papers on the other aspects of the same slum study :
-Demographic, socio-cultural and economic profile of Slum Residents in Dhaka-City, HEP Working Paper No.3-98;
-Illness profile and health-care use pattern of Slum Residents in Dhaka-City, HEP Working Paper No.4-98;
-Direct and indirect health-care expenditure by Slum Residents in Dhaka-City, HEP Working Paper No.5-98;
-Main findings and policy implications of a study on health-care seeking among the Slum Residents of Dhaka-City, HEP Working Paper No.7-98.

INTRODUCTION

In HEP Working Papers Nos.4-98 and 5-98, health-care option utilisation and direct and indirect expenditure in non-chronic illnesses were discussed in detail.
The present Working Paper groups a number of specific health-care seeking experiences. In the first chapter, the findings for chronic illnesses are discussed. In the next chapter, the findings on delivery cases are presented, and in chapter three, those on hospitalisation and minor and major surgical and traumatic cases.

In this Working Paper data from three different sources are used:
- for chapter one (chronic illnesses), from the illness and socio-economic surveillance systems;
- for chapter two (delivery cases), the data sources are the socio-economic and demographic surveillance systems, and case studies conducted during the third phase of the study (immediately after the longitudinal survey);
- for chapter three (hospitalisation and surgical/traumatic cases), the data sources are the illness surveillance system and the case studies.

Where appropriate, data from the verbal autopsies on the 34 reported death cases are also included in chapters two and three.

CHAPTER 1
HEALTH-CARE SEEKING IN CHRONIC ILLNESS CASES

Period prevalence rates of chronic illnesses by demographic and socio-economic variables were discussed in HEP Working Paper No.4-98. This chapter will concentrate on the utilisation of health-care options and the direct user expenditure during the 918 chronic illnesses reported during the longitudinal survey.

The correlate of an illness 'episode' in non-chronic illnesses is a 'phase' in chronic illnesses. These phases may be acute incidents in between which the patient may be symptom and treatment free (e.g. in asthma), or periods from one check-up to another (e.g. hypertension), or a continuous episode of illness (e.g. cases of chronic diarrhoea). A 'contact' with a health-care option during chronic illness phases is defined in the same way as during non-chronic illness episodes (see HEP Working Paper No.4-98).

A. FREQUENCIES OF HEALTH-CARE OPTION CONTACTS

Table 1 compares absolute and relative frequencies of health-care option contacts during illness between chronic and severe non-chronic illness. It indicates that in chronic illness, wait-and-see is clearly less used (χ^2=29.83; p=.0000). In contrast, pharmacies (χ^2=6.91; p=.009), public (χ^2=18.63; p=.0000) and non-government care (χ^2=6.41; p=.011) are more used.

Table 1: Comparison of absolute and relative frequencies of contacts by health-care option in chronic and severe non-chronic illness

Type of health-care option		Chronic illness		Severe non-chronic ill	
		Contacts No.	%	Contacts No.	%
	1. Wait & see	317	18.4	1893	24.6
	2. Home-care	397	23.0	1846	23.9
Modern health-care options	3. Pharmacy	352	20.4	1366	17.7
	4. Private for-profit	190	11.0	936	12.1
	5. Public	93	5.4	250	3.2
	6. Non-government	109	6.3	373	4.8
	7. Unqualified	50	2.9	170	2.2
	8. Homeopath	74	4.3	262	3.4
Traditional health-care options	10. Kobiraj 11. Spiritual healer 12. Ojha	142	8.2	615	8.0
Total No. of contacts		1724	100	7711	100

The relative frequencies for home-care, modern qualified for-profit providers, and modern unqualified practitioners and traditional healers are similar for chronic and severe non-

chronic illness. The average number of contacts per chronic illness phase is 1.87 (1724/918), which is similar to the average number for all non-chronic illnesses combined, but clearly lower than the average for severe non-chronic illnesses, i.e., 2.11 (see HEP Working Paper No.4-98).

The larger use of pharmacies, public and non-government care facilities in chronic illness phases compared to severe non-chronic illness episodes may indicate that (1) patients know their treatment and thus not always need to consult a provider (resulting in a larger use of pharmacies and a smaller number of contacts); and (2) patients select providers delivering health-care for specific chronic illnesses, such as the non-governmental BIRDEM hospital known for its treatment of diabetes, and specialised public hospitals (see HEP Working Paper No.4-98).

B. HEALTH-CARE OPTION UTILISATION BY DEMOGRAPHIC AND SOCIO-ECONOMIC VARIABLES

As for health-care option use in non-chronic illness episodes, there may be positive, negative or no associations with explanatory variables. The parameter for health-care option use (namely percentage use/need ratio) and the levels of statistical significance are the same as those presented in the Introduction to Part B of HEP Working Paper No.4-98. Figures on percentage use/need ratios are given in Annex 1 to this Working Paper.

1. AGE AND GENDER

In order to avoid gender bias, 10 main chronic illnesses not related to gender were selected for the analysis (i.e. gastric pain, skin ailment, joint ailment, difficult breathing, headache, diarrhoea, blood pressure, respiratory, dental, and eye ailments). Fig. 1 on p.5 gives graphical representations of percentage use-need ratios by age-group, and Table 2 on p.6 the respective statistical associations, with positive associations meaning more use by males.

1.1. <u>Younger childhood (Under 6 year age-group)</u>

Fig. 1a and Table 2 indicate that:

- There is a moderate *positive* association for wait-and-see, and a weak *negative* association for modern private-for-profit care and homeopathy;
- For all the other health-care options, there are no statistically significant associations.

1.2. **Older childhood (6-12 year age-group)**

Fig. 1.b and Table 2 show that:

- There is a weak *negative* association for public care;
- For all other health-care options, there are no statistically significant associations, due amongst others to the limited numbers of observations (30 for boys and 39 for girls). However, utilisation of wait-and-see and home-care appear to be higher for boys.

1.3. **Adolescents (13-18 year age-group)**

Fig. 1.c and Table 2 indicate that:

- There is a weak *positive* association for pharmacies and a weak *negative* association for modern private-for-profit care;
- For all other health-care options, there are no associations.

Here as well, the total numbers of observations are low: 14 for males, and 38 for females. The findings must thus be treated with caution.

1.4. **Younger adults (19-45 year age-group)**

Fig.1.d and Table 2 show that:

- There are *positive* associations for modern private-for-profit and modern unqualified care (both moderate);
- There is a moderate *negative* association for home-care;
- Although statically not significant, wait-and-see appears to be more used for female adults, and pharmacies and public care for male adults.

1.5. **Older adults (more than 45 year age-group)**

Fig.1.e and Table 2 illustrate that:

- There is a strong *positive* association for pharmacies;
- There is a moderate *negative* association for non-government care;
- For all other health-care options, there are no associations, although home-care and modern private-for-profit appear to be more used by females.

Conclusion

Although statistical associations are scant, the health-care option utilisation pattern by age and gender in chronic illness phases, shown above, generally confirms the trends found for non-chronic illness, presented in Part B of HEP Working Paper No.4-98. However, larger use of wait-and-see in illness of boys is particular for chronic illness phases. No specific elements are available to explain this phenomenon.

Fig. 1: Percentage use/need ratios
in chronic illnesses by age and gender

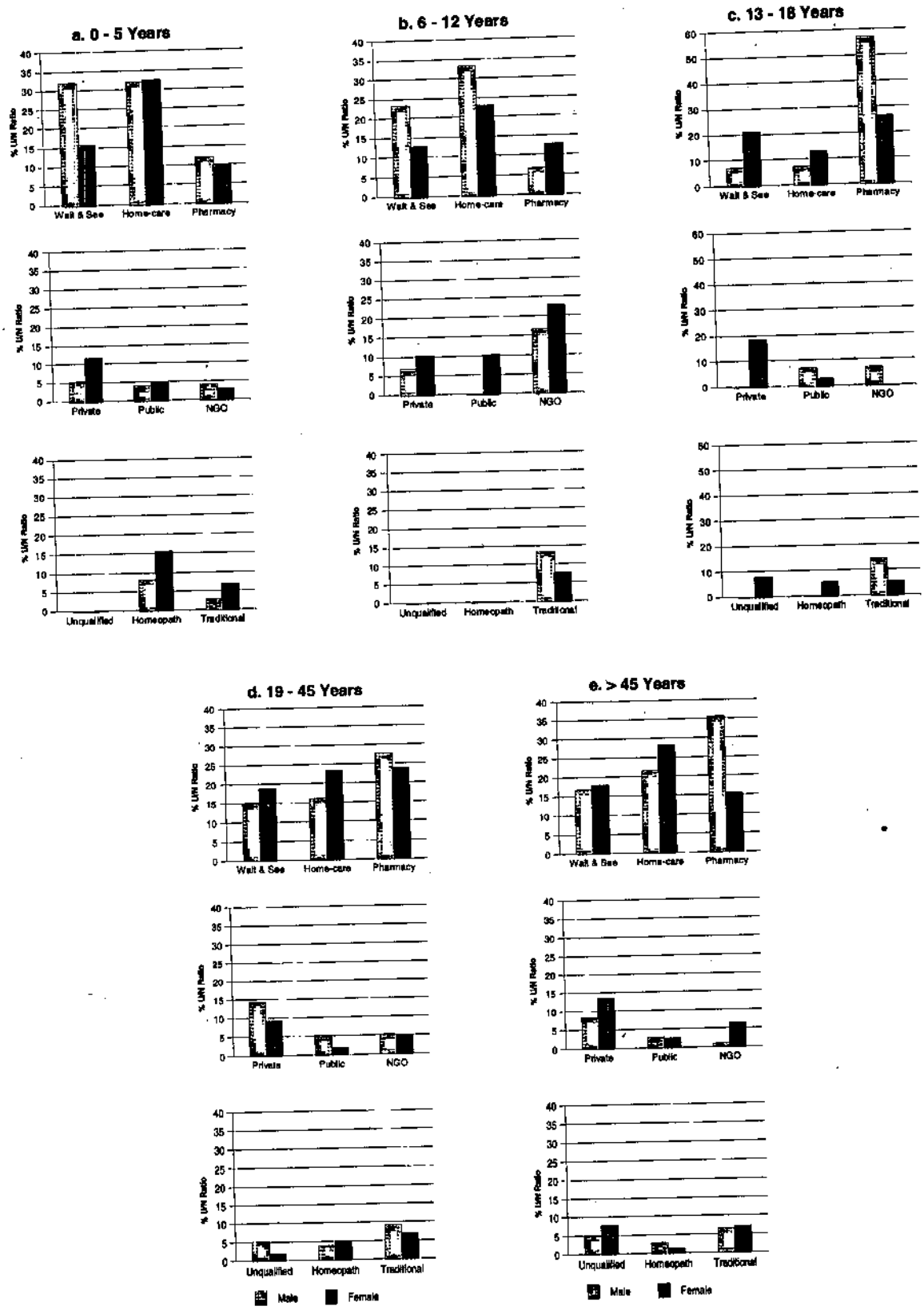


Table 2: Statistical trends in utilisation of health-care options by age and gender

Health-care option	0-5 years			6-12 years			13-18 years		
	χ^2	P value	Dir **	χ^2	P value	Dir **	χ^2	P value	Dir **
Wait & see	6.58	.010	+	1.30	.25		1.38	.41*	
Home-care	.00	.96		.89	.34		.36	1.0*	
Pharmacy	.22	.64		.70	.69*		4.30	.052*	(+)
Mod priv	2.17	.14	(-)	.28	.69*		2.98	.17*	(-)
Public	.08	1.0*		3.27	.13*	(-)	.56	.52*	
Non-govt	.15	.70*		.43	.51		2.77	.27*	
Unqualif	0	0		0	0		1.17	.55*	
Homeopath	2.35	.13	(-)	0	0		.77	1.0*	
Traditional	1.58	.31*		.59	.69*		1.17	.29*	

* = Fisher's 2-tailed exact test p-value (cells with < 5 observations)
**Dir = direction of association: +=more used by males.

Health-care option	19-45 years			> 45 years		
	χ^2	P value	Dir **	χ^2	P value	Dir **
Wait & see	1.51	.22		.06	.81	
Home-care	5.22	.02	-	1.51	.22	
Pharmacy	1.19	.27		14.27	.0002	+
Mod priv	3.88	.049	+	1.60	.21	
Public	1.35	.24		.01	1.0*	
Non-govt	.00	.95		4.75	.030*	-
Unqualif	5.75	.016	+	.96	.33	
Homeopath	.32	.57		.79	.40*	
Traditional	.98	.32		.03	.87	

* = Fisher's 2-tailed exact test p-value (cells with < 5 observations)
** Dir = direction of association: +=more used by males.

2. MOTHER'S AND FATHER'S EDUCATION

Fig. 2 shows the percentage use/need ratios in childhood chronic illness cases (0-12 year age-group) for mother's and father's education, and, Table 3 gives their statistical associations (more the use higher the level of education means a positive association). Figures in the corresponding tables in Annex 1 are small for several subcategories: findings should thus be taken with caution.

2.1. Mother's education

Because of the small number of observations in the category 'more than 5 years of education' (N=16), analysis was done by combining this number with those of the category '1 to 5 years of education'.

- Table 3 shows that there is a moderate *negative* association for non-government care;
- Fig. 2.a. further shows that home-care, modern private care and homeopathy are less used when no education was received. In comparison, pharmacies and public care are more used. All these associations are, however, statistically not significant.

2.2. Father's education

- Table 3 indicates that there is a weak *positive* trend for modern private care, and a moderate *negative* trend for non-government care;
- Fig. 2.b. further shows a number of statistically no-significant trends: a positive one for homeopathy, and negative trends for public care and traditional care.

The associations and trends found for chronic illness are similar to those found for non-chronic illness presented in Part B of HEP Working Paper No.4-98, except in the case of public care for both mother's and father's education.

Fig. 2: Percentage use/need ratios in childhood chronic illnesses by mother's and father's education

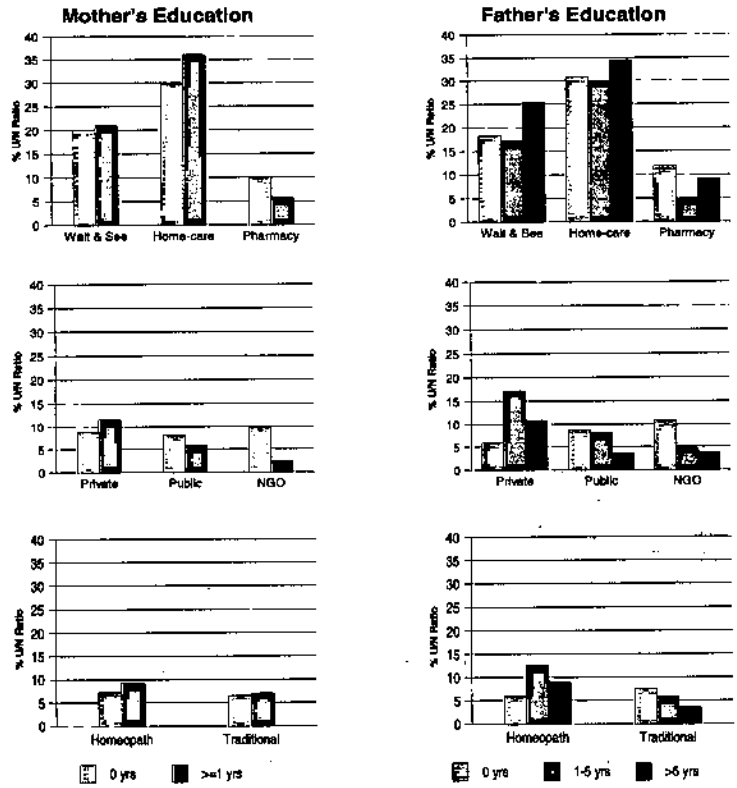


Table 3: Statistical trends in utilisation of health-care options by mother's and father's education and by household income

Health-care option	Mother's edu			Father's edu			Household income		
	χ^2	P value	Dir *	χ^2	P value	Dir *	χ^2	P value	Dir **
Wait & see	.03	.85		.87	.35		1.28	.26	
Home-care	1.24	.26		.16	.69		.25	.62	
Pharmacy	1.39	.24		1.35	.25		.003	.96	
Mod priv	.58	.45		3.58	.06	(+)	9.51	.002	+
Public	.48	.49		1.24	.27		1.25	.26	
Non-govt	4.77	.03	-	4.25	.04	-	15.58	.0000	-
Unqualified	0	0		0	0		.87	.35	
Homeopath	.36	.55		1.57	.21		3.05	.08	(+)
Traditional	.26	.61		1.17	.28		.39	.53	

* Dir = direction of trend: +=more used, when (more educated)
** Dir = direction of trend: +=more used, when higher household income.

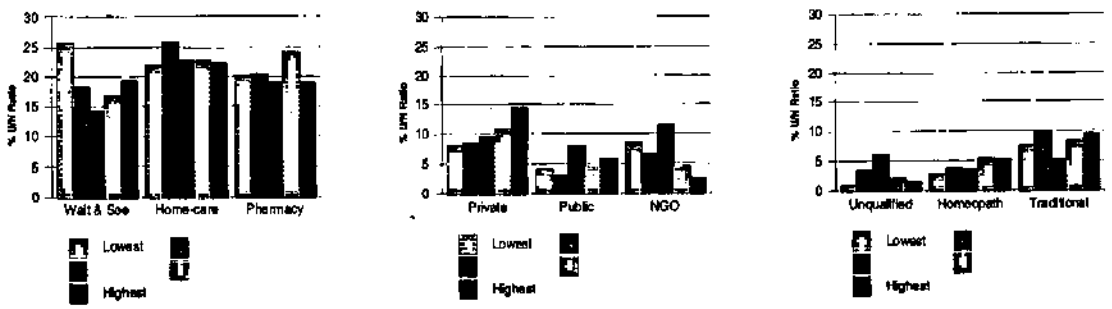
3. HOUSEHOLD INCOME

Fig. 3 gives details on percentage use/need ratios by quintiles of household income. Table 3 shows their statistical trends (a positive trend means more use when the household income is higher). The following observations are made:

- There are *positive* trends for modern private care (strong) and homeopathy (weak);
- There is a strong *negative* trend for non-government care;
- For all other health-care options there are no particular trends.

Where there are trends, the picture for chronic illnesses confirms the one for non-chronic illnesses presented in Part B of HEP Working Paper No.4-98.

Fig. 3: Percentage use/need ratios in chronic illnesses by household income



C. DIRECT USER HEALTH-CARE EXPENDITURE

In this section, a number of aspects of direct user health-care expenditure in the case of chronic illnesses are discussed:

- The contribution of chronic illnesses in total user expenditure on health-care compared to its contribution in the total number of health-care option contacts;
- Comparing total spending by health-care option in chronic and non-chronic illness cases;
- Direct expenditure per health-care option contact;
- Direct expenditure per chronic illness 'phase'.

1. CONTRIBUTION OF CHRONIC ILLNESSES IN TOTAL USER HEALTH-CARE SPENDING AND IN TOTAL NUMBER OF HEALTH-CARE OPTION CONTACTS

In Part A of HEP Working Paper No.5-98, it was shown that chronic illnesses represent 19.4% of total health-care spending (i.e. taka 80,047 out of taka 405,416), while their contribution in the number of health-care contacts was only about half this percentage, namely 9.4% (i.e. 1,724 out of 18,262). Chronic illnesses contribute thus relatively more in total spending than in the total number of contacts.

2. COMPARING TOTAL USER HEALTH-CARE SPENDING BY HEALTH-CARE OPTION IN CHRONIC AND NON-CHRONIC ILLNESS CASES

In terms of health-care spending, Fig. 2 and Table 4 in Part A of HEP Working Paper No.5-98 indicate that modern private for-profit care accounts for 35% of total spending in chronic illnesses compared to 49% in all non-chronic illnesses combined, followed by non-government care (19%, compared to only 7% in non-chronic illnesses), traditional care (17%, compared to 10%), pharmacies (12%, compared to 17%). Public care, homeopathy, modern unqualified care and home-care make similar contributions to total health-care spending in chronic and non-chronic illnesses (9% for public care, and from 2% to 5% for the other three options). The health-care options with clear differences in relative contributions to total user health-care spending between chronic and non-chronic illnesses are thus:

(1) non-government and traditional care (clearly greater relative contributions in chronic illnesses), and

(2) modern private-for-profit care (clearly a smaller relative contribution).

However, in relative as well as absolute terms, modern private-for-profit care is in both chronic and non-chronic illnesses the greatest contributor to overall user health-care spending.

3. DIRECT EXPENDITURE PER HEALTH-CARE CONTACT

3.1. Average expenditure per health-care contact by health-care option

Table 4 (see next page) gives the means (with standard errors) and medians per health-care option contact by health-care option. The data for chronic illnesses are compared with those for severe non-chronic illnesses. It shows that:

- *Overall*, the mean direct expenditure per contact is about 50% higher and the median 5 times higher in chronic illnesses than in severe non-chronic ones. This is due to a 6% lower use rate for wait-and-see in chronic illness cases (of which the mean and median are by definition zero), and the higher per contact expenditure for some health-care options;

- The mean per health-care option contact for *non-government care* is about 5.5 times *higher* in chronic illness cases. The median, however, does not show much difference with the one for severe non-chronic illnesses. These data suggest a substantial skewedness to the right and an important spread (further substantiated by the big standard error) in the distribution of observations;

- The mean and median per health-care option contact for *homeopathy* and *traditional healers* are about 2 to 2.5 times higher in chronic illness cases;

- The means and medians for the remaining health-care options are similar to those in non-chronic severe illness cases.

Table 4: Average expenditure per contact by health-care option for chronic illness cases

	Chronic illness			Severe non-chronic		
Illness	Mean	SE	Median	Mean	SE	Median
Wait & see	0	0	0	0	0	0
Home-care	7.0	1.3	0	3.1	0.3	0
Pharmacy	26.6	3.7	15	25.1	1.3	14
Modern priv	145.3	13.6	80	139.9	29.5	65
Public	74.6	17.4	16	95.9	14.8	15
Mod non-govt	135.7	106.6	10	25.3	3.5	8
Mod unqualif	46.4	6.9	30	43.9	4.2	25
Homeopath	37.1	5.6	20	19.2	1.1	10
Traditional	95.2	23.7	26.5	36.0	3.4	11
All	46.4	7.4	5	31.0	3.7	1

3.2. Cost structure per health-care contact

Table 5 gives the cost structure per health-care option contact for each health-care option. Data are again compared to those of severe non-chronic illness:

- **Travel costs, admission** and **consultation fees** are similar for contacts with any

health-care option during chronic and severe non-chronic illness cases:

- **Drug costs** are fairly similar for pharmacies, modern private and unqualified care. They are lower for public care, but are twice as high or more for home-care, non-government care, homeopathy, and traditional care. Drug costs remain, as is the case for non-chronic illnesses, the main cost item for all health-care options;

- There are small costs for **surgical intervention** in public care. For **hospitalisation,** there is one contact with a non-government facility (in a diabetes case): the cost is taka 6,800. Given the 109 contacts with a non-government facility, the mean cost for hospitalisation becomes thus taka 62 for contacts with non-government facilities.

Table 5: Cost structure per health-care contact by health-care option in chronic illness cases and non-chronic severe illness episodes(Absolute mean figures)

CHRONIC illness cases	Cost Items*								Mean Expend per contact
	Travel	Admission	Consultation	Drugs	Surgic interv	Hospitalis	Diagn test	Others	
Wait & see	-	-	-	-	-	-	-	-	0
Home-care	-	-	-	6.9	-	-	-	.05	7.0
Pharmacy	.1	-	.1	26.4	-	-	-	-	26.6
Modern private	5.0	-	21.8	92.1	-	-	26.5	-	145.3
Public	11.7	2.0	.1	34.2	3.8	4.8	10.2	7.8	74.6
Non-gov't	10.6	1.6	.5	29.6	.1	62.4	30.9	-	135.7
Mod unqualif	1.6	-	1.0	43.8	-	-	-	-	46.4
Homeopathy	2.2	.1	.8	33.3	-	-	-	.7	37.1
Traditional	7.0	-	5.5	81.9	.3	-	-	.5	95.2
All	2.6	.2	3.0	30.3	.2	4.2	5.4	.5	46.4

SEVERE non-chronic illness cases	Cost Items*								Mean Expend per contact
	Travel	Admission	Consultation	Drugs	Surgical int	Hospitalis	Diagn test	Others	
Wait & see	-	-	-	-	-	-	-	-	0
Home-care	.02	-	-	3.0	-	-	-	.02	3.1
Pharmacy	.2	.01	.3	24.5	-	-	.07	-	25.1
Modern private	4.4	.04	19.5	78.6	21.4	8.6	6.8	.7	139.9
Public	15.7	2.2	1.4	60.9	1.0	8.1	4.6	2.0	95.9
Non-gov't	10.7	2.4	.3	9.6	-	-	1.4	.9	25.3
Mod unqualif	.2	-	1.5	42.2	-	-	-	-	43.9
Homeopath	.9	.05	1.2	17.1	-	-	-	-	19.2
Traditional	4.3	-	3.2	26.5	.03	-	-	2.0	36.0
All	2.0	.2	2.8	20.7	2.6	1.3	1.1	.4	31.0

* All figures are taka amounts.

- Expenditures for **diagnostic tests** are only reported for the three modern qualified health-care options in both chronic and severe non-chronic illness cases. However, for all three the options, the means are substantially higher for chronic illnesses, suggesting a heavier reliance on tests for diagnostic purposes in the case of chronic illnesses. (For non-government facilities, this is, however, almost exclusively due to the one hospitalisation contact earlier mentioned);

- Only for public care, there is some **other expenditure** in chronic illness cases. As mentioned for non-chronic illnesses in HEP Working Paper No.5-98, this includes payment of tips and bribes to middlemen.

4. DIRECT EXPENDITURE PER CHRONIC ILLNESS PHASE

4.1. Average direct expenditure per chronic illness phase by illness category

Overall, the averages of direct expenditure per illness phase (Table 6) are taka 87.2 (the mean, with a standard error of taka 16.1) and taka 10 (the median), indicating that the distribution of observations is skewed to the right. They are about 33% and 50% higher than the mean and the median expenditure per severe non-chronic illness episode respectively. However, the difference between the means for chronic and severe non-chronic illnesses is statistically not significant at the 5% level as the 95% confidence intervals overlap.

By *illness category*, one observes that:

- Out of the 12 main chronic illness categories, 4 have mean direct expenditure **around the overall mean, i.e., taka 87**: gastric pain, difficult breathing, blood pressure and non-specific gastro-abdominal ailments;

- Another 4 categories have mean direct expenditure per chronic illness phase **between taka 50 and 70**: skin ailments, respiratory ailments, joint ailments, and non-specific pain;

- Three categories have **low** mean direct expenditures: diarrhoea, headache, and dental ailments;

- Two categories have a mean direct expenditure **far exceeding** the average: eye ailments and the category of other chronic illness. However, standard errors for these categories are much bigger than for the other categories. In addition, the medians for these categories are near to the overall median, indicating that the high means are due to a few chronic illness phases with substantial direct expenditure.

The *comparison with severe non-chronic illness categories* gives a mixed picture: for some categories, such as skin ailments, the mean and median direct expenditure per chronic illness phase appear to be bigger. For other categories, such as headache, gastric pain and joint ailments, they tend to be similar. Finally, for some categories like diarrhoea, they are smaller.

Table 6: Average expenditure per chronic illness phase by illness category

Illness category	CHRONIC illness			SEVERE non-chronic		
	Mean	SE	Median	Mean	SE	Median
Cold fever	-	-	-	37.15	4.6	12
Fever	-	-	-	49.6	5.0	14
Diarrhoea	8.6	2.1	0	44.8	4.4	15
Skin ailment	63.5	14.4	20	31.5	3.6	11
Injury	-	-	-	80.2	8.9	32
Respiratory ailment	56.2	31.4	15	75.5	21.8	12
Eye ailment	133.0	69.4	12	24.4	6.4	10
Gastric pain	89.6	20.2	10	200.7	117.5	17
Dysentery	-	-	-	41.5	6.5	20
Headache	21.9	7.9	1	17.9	6.7	2
Joint ailment	53.5	13.7	5	49.8	9.2	9
Jaundice	-	-	-	96.3	13.5	40
Difficult breathing	84.3	24.0	21	-		-
Blood pressure	84.5	37.4	7	-		-
Non-specific pain	69.9	32.9	13.5	-		-
NSGAA*	84.8	22.7	30	-		-
Dental ailment	27.6	16.7	3	-		-
Other illness	169.0	71.2	10	105.0	29.0	16
All	87.2	16.1	10	65.3	8.0	15

* Non-specific gastro-abdominal ailment.

4.2. **Cost structure per chronic illness phase**

Table 7 compares the cost structure of chronic illness phases and severe non-chronic illness episodes:

- In *absolute* figures, most expenditure items tend to be similar. The exceptions are surgical interventions (higher in non-chronic illness episodes), and hospitalisation and diagnostic tests (higher in chronic illness phases). The latter reflects the higher reliance on diagnostic tests in chronic illnesses already stated above. The higher hospitalisation cost for chronic illness cases is mainly due to two cases: the diabetes case mentioned above, and a case of chronic eye ailment;

- In *relative* terms, the contribution of drugs is comparable for chronic illness phases

and non-chronic severe illness episodes. Likewise for the expenditure items travel, admission fees, other expenditure, and to a lesser extent consultation fees. Expenditures on hospitalisation and diagnostic tests are higher in chronic illness phases, reflecting again the larger use of tests mentioned above. In severe non-chronic illness episodes the relative contribution of surgical interventions is greater.

Table 7: Cost structure by chronic illness phase

Cost item	Chronic illness			Severe non-chronic		
	Mean	SE	%	Mean	SE	%
Travel	4.9	0.9	5.6	4.2	0.4	6.4
Admission fee	.4	0.06	0.5	.4	0.03	0.6
Consultation	5.6	0.9	6.4	5.9	0.6	9.1
Drugs	56.9	6.6	65.3	43.6	2.6	66.7
Surgical interv	.4	0.4	0.5	5.6	3.7	8.5
Hospitalisation	7.9	7.4	9.1	2.7	2.2	4.2
Diagnostic test	10.2	4.4	11.7	2.2	0.4	3.4
Others	.9	0.6	1.0	.8	0.2	1.2
All	87.2	16.1	100	65.3	8.0	100

4.3. Cost structure per chronic illness phase by illness category

The cost structures per chronic illness phase by illness category are presented in Table 8. They are, again to the extent possible, compared with data for severe non-chronic illness. Table 8 gives the cost structure as percentage contributions of cost items into the total cost per illness phase. Annex 2 details the absolute figures.

The data in Table 8 indicate that:

- Although **drugs** are by far the most important cost item in both illness types (and their overall relative contribution similar), their percentage contribution is *higher* in chronic illness phases than in severe illness episodes for several illness categories. This may be attributed to the fact that patients 'know' their chronic illness and the treatment to be purchased, and thus do not need to always consult a provider, thereby reducing travel and consultation costs. This finding correlates with the larger use of pharmacies in chronic illness cases, mentioned on pp.3-4;

- The relative contribution of drugs is lower than the average, when other cost items are involved.
  Diagnostic tests significantly contribute in the total direct expenditure for gastric pain, joint ailments, non-specific pain, and the category 'other chronic illnesses'.
  Consultation fees and expenditure on **surgical intervention** do so for eye ailments, and consultation fees for the category 'other chronic illnesses'.

Table 8: Cost structure per chronic illness phase and per severe non-chronic illness episode by iliness category

CHRONIC illness categories	Cost items*								Mean expend per phase
	Travel	Admission	Consultation	Drugs	Surgical int	Hospitalis	Diagn test	Others	
Gastric pain	6.2	.2	8.0	68.6	-	-	17.1	-	89.6
Skin ailment	3.1	.6	11.8	84.3	-	-	.2	-	63.5
Joint ailment	5.3	.9	4.1	68.6	1.0	-	19.9	.2	53.5
Difficult breath	5.2	.1	8.3	80.6	-	-	5.9	-	84.3
Headache	4.0	.7	2.7	92.3	-	-	-	-	21.9
Diarrhoea	4.4	1.3	-	94.3	-	-	-	-	8.6
Blood pressure	2.7	.7	5.9	90.7	-	-	-	-	84.5
Non-spec pain	3.8	.5	9.5	53.4	-	-	32.8	-	69.9
Respiratory ail	5.4	2.4	-	91.5	-	-	.7	-	56.2
NSGAA*	8.0	-	5.9	86.1	-	-	-	-	84.8
Dental ailment	5.3	1.8	9.1	81.6	2.3	-	-	-	27.6
Eye ailment	8.7	1.2	2.3	62.2	11.4	11.4	2.6	.2	133.0
Other	6.1	.4	5.3	50.3	-	20.9	14.4	2.6	169.0
All	5.6	.5	6.4	65.2	.5	9.1	11.7	1.1	87.2

* Non-specific gastro-abdominal ailment.

SEVERE illness categories	Cost items*								Mean expend per episode
	Travel	Admission	Consultation	Drugs	Surgical int	Hospitalis	Diagn test	Others	
Cold fever	5.6	1.6	9.4	75.1	-	6.1	2.1	.1	37.2
Fever	3.5	.6	11.4	80.2	.01	.01	4.0	.3	49.6
Diarrhoea	15.8	.5	7.6	73.9	-	-	.2	1.9	44.8
Skin ailment	3.8	2.4	7.8	80.0	-	-	5.5	.7	31.5
Injury	6.0	.7	5.6	83.9	2.2	-	1.3	.3	80.2
Resp ailment	4.4	.9	7.9	74.9	-	5.0	3.0	4.0	75.5
Eye ailment	8.4	1.9	6.4	68.8	.9	-	13.7	-	24.4
Gastric pain	4.9	.1	6.2	34.9	25.6	22.8	4.0	1.5	200.7
Dysentery	4.0	.8	14.1	80.9	-	-	-	.2	41.5
Headache	3.7	.2	8.6	87.4	-	-	-	-	17.9
Joint ailment	5.3	.5	16.1	76.8	-	-	-	1.4	49.8
Jaundice	8.0	.1	6.3	75.4	-	-	10.1	.2	96.3
Other	6.3	.5	10.5	61.6	15.3	0.6	3.7	1.7	105.0
All	6.4	.6	9.1	66.7	8.5	4.2	3.4	1.2	65.3

* All figures are row percentages.

4.4. Direct expenditure per chronic illness phase by demographic and socio-economic variables

The variables that will be considered here are the same as for health-care option utilisation in chronic illness presented in the previous section: age and gender, mother's and father's education, and household income. Tables with the figures of means, standard errors and medians are given in Annex 3. Data are again compared with those from severe non-chronic illness episodes.

1) Age and gender

Fig. 4 details the median, and Fig. 5 the mean direct expenditure by age and gender. The data presented here are based on the same 10 selected chronic illness categories as the data on health-care option utilisation in the previous section. Figs. 4 and 5 indicate that:

- The *median* direct expenditure per chronic illness phase is higher for males in all age-groups, except during early childhood. This confirms the trends found in severe non-chronic illnesses;
- In contrast, the *mean* direct expenditure is only higher in chronic illnesses of adult males. In severe non-chronic illness episodes, the means are only higher for male children.

Fig. 4: Median direct expenditure per phase/episode
by age and gender (selected illness categories)

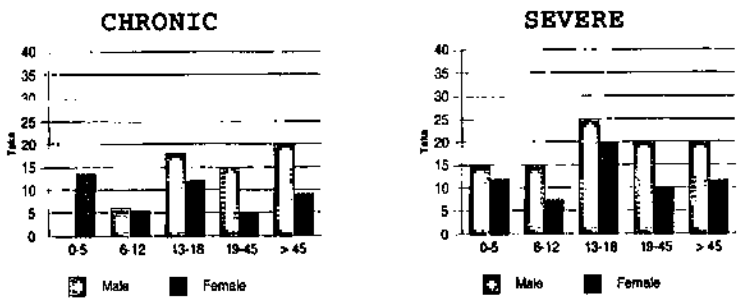
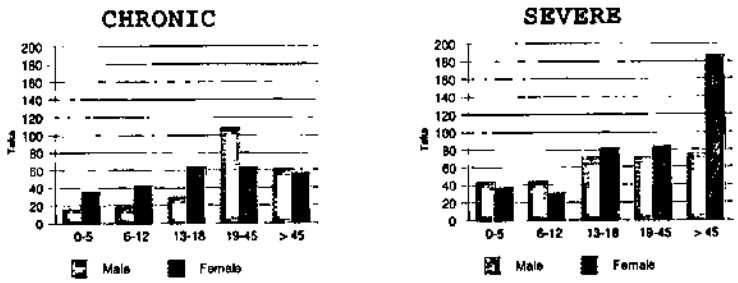


Fig. 5: Mean direct expenditure per phase/episode
by age and gender (selected illness categories)

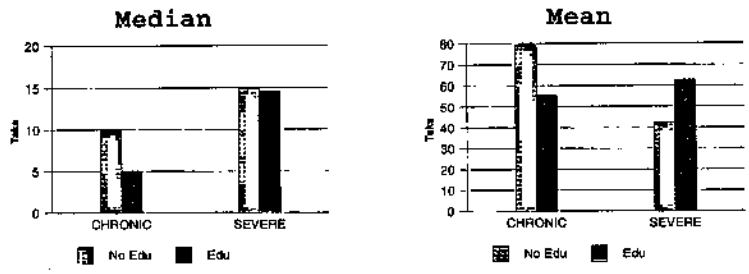


2) Mother's and father's education

As for health-care option utilisation, data are presented here for childhood chronic illnesses (0-12 year age-group) and the same education categories are used.

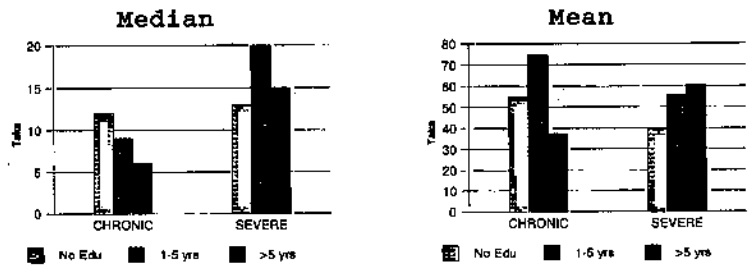
Considering *mother's education* (Fig. 6), the median and mean direct expenditures per chronic illness phase are greater in the category 'no education'. In contrast, in non-chronic severe illness episodes, the means show an opposite trend, while the medians are similar in the two education categories.

Fig. 6: Median and Mean direct expenditure per phase/episode by mother's education level



Similarly, in the case of *father's education* (Fig. 7), the median and the mean direct expenditures per chronic illness phase tend to decrease with increasing educational level. In contrast, in non-chronic severe illness episodes, the trend is opposite for both the median and the mean direct expenditures.

Fig. 7: Median and Mean direct expenditure per phase/episode by father's education level



3) Household income

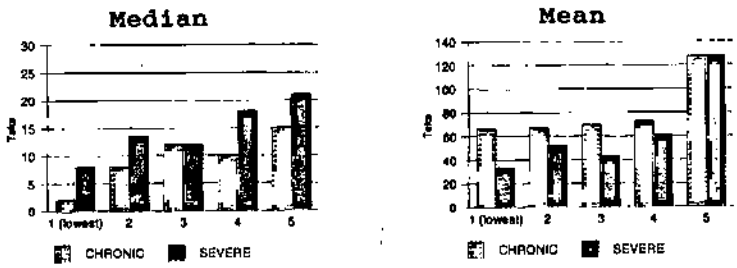
Fig. 8 shows median and mean direct expenditure per illness phase for chronic illnesses, and per illness episode for severe non-chronic illnesses by household income:

- Except for income quintiles 4 and 3 respectively, direct *median* expenditures for both chronic and severe non-chronic illness gradually increase with increasing household

income

- The direct *mean* expenditures show the same trend as for the medians. However, the direct mean expenditures per chronic illness phase only slightly increase from the lowest to the second highest income quintile. In the highest quintile, the means for both chronic illness phases and severe non-chronic illness episodes, are double the means of the fourth quintile. However, their standard errors (see Annex 3) are also twice as high as those in the fourth quintile.

Fig. 8: Median and Mean direct expenditure per phase/episode by household income quintile



ANALYSIS OF THE FINDINGS ON DIRECT USER EXPENDITURE DURING CHRONIC ILLNESS PHASES

- As in non-chronic illness cases, **modern private care** in chronic illness cases is the main contributor to total health-care spending in relative as well as absolute terms. However, its relative contribution is clearly smaller in chronic than in non-chronic illness cases, while **traditional** and **non-government care** make greater relative contributions;

- The **overall mean expenditure** per chronic illness phase is statistically similar to the mean per severe non-chronic illness episode; the medians show the same trend. As for non-chronic illnesses, **drugs** are the main cost item. However, in several chronic illness categories, there is heavy reliance on **diagnostic tests**;

- By **age** and **gender**, the median direct expenditure per chronic illness phase follows the trends for non-chronic severe illness episodes, namely higher expenditure for males in nearly all age-groups. However, the mean expenditure shows a mixed picture for both chronic and non-chronic illness. As indicated in the case of non-chronic illnesses, lower expenditure for illnesses in females may be attributed to the lower social status of women;

- By **education level**, expenditure in chronic illness phases is higher when there is no education. This at first sight surprising finding may indicate that educated fathers and mothers better understand the overall care and hygiene required for the chronically

sick child. This in turn may lead to better and more effective overall care, resulting in more efficient spending on health-care;

- By **household income**, median expenditures rise with increasing income in both chronic and non-chronic illnesses. The mean expenditures do the same, but in chronic illnesses only slightly from the lowest to the second highest quintile. The means further double in the highest quintile, but have big standard errors indicating considerable spread of observations around the means.

The trends in expenditure in chronic illness show thus similarities and differences compared to non-chronic illness cases.

The differences may be due to the specific nature of chronic illnesses:

- As mentioned above, in many instances, chronic illnesses are 'known' to the patients, and consequently their treatment regimens, frequencies of check-ups and their associated costs. As a result, patients may be able to 'prepare' themselves for such an event, for instance financially (which then may lead to fairly similar direct expenditures per phase in several income quintiles, despite the relatively high direct expenditure per illness phase). This is the picture for a large number of chronic illnesses, such as asthma, diabetes, gastric pain, joint ailments, 'chronic' headache and blood pressure;

- Other chronic illness conditions, such as chronic diarrhoea and chronic respiratory non-asthma ailments in children are usually consequences of acute illness episodes of infectious origin. A better understanding and care by educated mothers and fathers may be expected in those cases, and may ultimately lead - as mentioned above - to a lower per phase direct expenditure, when mothers and/or fathers are educated.

CHAPTER 2
HEALTH-CARE SEEKING IN DELIVERY CASES

The total number of deliveries that were reported during the longitudinal survey through the socio-economic and demographic surveillance system, was 324. In HEP Working Paper No.3-98, it was mentioned that 14.5% or 47 expectant mothers went to the country-home to deliver. A purposive sample of 52 case studies on deliveries were conducted, out of which 17 took place in the country-home of the pregnant women.

In this chapter the following six issues on delivery cases will be discussed:

- Delivery outcome;
- Place of delivery;
- Types of health-care provider who attended the delivery by delivery outcome and by place of delivery;
- Pregnancy, delivery and post-natal period: their history of health-care provider use;
- Reasons for preference of health-care providers; and
- Costs of delivery, during the antenatal and the postnatal period.

Data on the second and third issue are taken from the socio-economic and demographic surveillance. Data on the other issues are taken from the purposive sample of 52 case studies on deliveries and from the verbal autopsies.

A. DELIVERY OUTCOME

1. MOTHER

Out of all the 324 deliveries, two mothers died. The narratives of these two cases are summarised hereunder:

The first mother died of eclampsia at a non-government health centre, about 12 hours after delivery which took place at home at 1:00 a.m.
A few hours before giving birth, the mother became 'restless and froth was coming out of her mouth', so a *fakir* was called at home. He tried to exorcise the mother without success. Then she was taken to another *fakir*'s home and was again exorcised for *alga batash* (i.e. bad air). Afterwards, the mother was brought back home, was given oil and water on the head and massage of hands and feet, and soon thereafter she delivered without any assistance a still-born child. At that time the mother became unconscious. The placenta was not delivered, so the abdomen was pressed by a *peer-sister*[1]. Finally, the placenta was delivered.
The mother remained unconscious for 6 to 7 hours, and as there was no improvement she was taken by a *peer-brother* to the above mentioned non-government clinic, where she expired after a few hours, after having received intravenous treatment.
The mother's husband was reported to be very young, a gambler and visitor of prostitutes, and

[1] The expectant mother and her peer-sister and brother are followers of a religious sect headed by a peer, a folkterm for somebody who is believed to be a 'saint'; the relationship among followers is usually very strong.

already at his second marriage. He was not present during the process of delivery. Although no cost amounts were reported, it was stated that all costs involved were borne by the *peer-relatives*.

The second mother died at home most probably due to exhaustion from delivery. The labour started around midnight at home, a *dai* was called who waited at the mother's side for the rest of the night. However, there was no progress in labour. So, a nurse was called, an 'experienced' nurse, according to the statement of the grand-mother. With the assistance of the nurse, she delivered a dead baby in the morning. Just after birth, the mother became restless. An MBBS doctor was called in and referred her to a nearby public hospital, where she was immediately taken. At arrival at the hospital, the doctors declared her dead.

Out of the 52 case studies, there were 8 reported cases of complications for the mother after delivery: two cases of uterine prolapse, one case of anaemia, one case of prolonged bleeding, two cases of generalised body weakness and two cases of body pain and discomfort.

2. CHILD

Table 9 shows that out of the 324 deliveries recorded, 90% were single live-births. Another 8% were single stillbirths, which is high, even compared to standards of delivery outcome in neighbouring India[2].

Table 9: Delivery outcomes

Delivery outcome	N	%
1. Single live-birth	292	90.1
2. Single stillbirth	27	8.3
3. Twin live-birth	5	1.5
Total	324	100

One and a half percent of the deliveries ended with twin live-births, which is comparable to the existing literature. Although all five the twins were borne alive, only two twins survived, one died after 4 hours (both girls), one after one day (both boys), and one after three days (both girls).

B. PLACE OF DELIVERY

Here the *final* place of delivery is discussed. In section D, details will be given on the sequences of places where deliveries occurred. Table 10 indicates that the vast majority (77%) of the deliveries took place at home, 16% at hospitals and clinics, 6% in the dwelling of a relative, and 2% in other places.
Furthermore, when associating the place of delivery with delivery outcome, one observes that

[2] Dawn C.S. Textbook of Obstetrics. Sreemoti Arati Dawn Publications, Calcutta, 1982.

the same percentages of single live-births and of single stillbirths occurred in homes and hospitals/clinics.

Table 10: Place of delivery by delivery outcome

Place of delivery	Delivery outcome							
	Single live-birth		Single still birth		Twin live-birth		Total	
	N	%	N	%	N	%	N	%
1. Home	224	76.7	20	74.1	4	80.0	248	76.5
2. Hospital/clinic	46	15.8	4	14.8	1	20.0	51	15.7
3. Home of relatives	18	6.2	1	3.7	-	-	19	5.9
4. Other	4	1.4	2	7.4	-	-	6	1.9
Total	292	100	27	100	5	100	324	100

C. TYPES OF HEALTH-CARE PROVIDER WHO ATTENDED THE DELIVERY

1. BY DELIVERY OUTCOME

Table 11 shows that, overall, about 40% of the deliveries had as *endpoint provider* an untrained Traditional Birth Attendant (TBA) and 25% a relative or a neighbour. In addition, a same proportion of about 13% of deliveries took place with a trained TBA or with a midwife. Finally, only 6% of the deliveries took place with an MBBS doctor.

Table 11: Provider at endpoint by delivery outcome

Endpoint provider	Delivery outcome							
	Single live-birth		Single still birth		Twin live-birth		Total	
	N	%	N	%	N	%	N	%
1. Untrained TBA	122	41.1	9	33.3	1	20.0	132	40.7
2. Relative/neighbour	74	25.6	5	18.5	2	40.0	81	25.0
3. Trained TBA	42	14.7	3	11.1	1	20.0	46	14.2
4. Midwife	36	12.6	4	14.8	1	20.0	41	12.7
5. MBBS	15	4.9	3	11.1	-	-	18	5.6
6. Unknown/Self	3	1.1	3	11.1	-	-	6	1.9
Total	292	100	27	100	5	100	324	100

During the past two decades training was organised for TBAs by the government and by a number of non-government organisations, aiming at improving maternal health. However, findings from the case studies suggest that, in the opinion of the respondents, there is little distinction between TBAs and relatives. In addition, the respondents found it

sometimes hard to correctly distinguish 'trained' from 'untrained' TBAs, resulting in misclassification for some cases. Relatives may assist deliveries - of whom only some may be trained, because they are recognised in the community to have the required skills. These skills of TBAs and relatives transcend the purely technical skills into features, such as interpersonal communication, and the ability to give trust and confidence to the mother and the other family members.

If the cases delivered with untrained TBAs and relatives are taken together, they represent about two-thirds of all deliveries, and the same proportion of all single live-births. Furthermore, the following particularities are found when delivery outcome is considered:

- The percentage of single stillbirths compared to the sum of single live and stillbirths, is the lowest for TBAs and relatives/neighbours (6-7%), and 10% and 17% for midwives and doctors respectively. This is not surprising, because of the tendency to refer complicated cases to midwives and doctors, such as those reported in the two maternal death cases;

- However, the percentage of stillbirths with TBAs is also high. In addition, almost two-thirds of all single stillbirths occurred with TBAs and relatives as attendants. This indicates that many cases requiring referral care, whether referred or not, did not get to the hospital.

2. BY PLACE OF DELIVERY

Table 12 shows that TBAs or relatives are attending in more than 95% of the deliveries taking place in the home of the expectant mother and in 100% of the deliveries occurring in a relative's home. A few cases are attended at home by health professionals, like midwives and MBBS doctors. The findings of the case studies show that these are mostly complicated cases where the delivery process started with a TBA.
Two-thirds of the delivery cases in hospitals and clinics are attended by midwives, and the rest by MBBS doctors.

Table 12: Provider at endpoint by place of delivery

Endpoint provider	Place of delivery									
	Home		Hosp/cli		Rel. home		Other		Total	
	N	%	N	%	N	%	N	%	N	%
1. Untrained TBA	120	48.4	-	-	11	57.9	1	16.7	132	40.7
2. Relative	76	30.7	-	-	5	26.3	-	-	81	25.0
3. Trained TBA	41	16.5	-	-	3	15.8	2	33.3	46	14.2
4. Midwife	6	2.4	34	66.6	-	-	1	16.7	41	12.7
5. MBBS	1	.4	17	33.3	-	-	-	-	18	5.6
6. Unknown/Self	4	1.6	-	-	-	-	2	33.3	6	1.9
.Total	248	100	51	100	19	100	6	100	324	100

D. PREGNANCY, DELIVERY AND POST-NATAL PERIOD: THEIR HISTORY OF HEALTH-CARE PROVIDER USE

As mentioned above, 52 case studies were conducted on deliveries, wherein the respondents addressed a variety of issues. The data reveal that there is a wide variety of providers intervening at time of delivery (confirming the quantitative data presented above). In addition, the case studies provide data on the sequences in provider use during delivery (such as the ones presented above in the two maternal death cases), and on provider use during ante- and postnatal and even preconception periods.
Therefore, in this section (on health-care provider use) and the following ones (on reasons for use of different types of health-care providers, and on health-care costs), the findings will be presented according to these periods.

1. PRECONCEPTION AND PRENATAL CARE STAGE

1.1. **Preconception**: in 4 cases, there were visits either to a *fakir* or a kobiraj to receive advice and spiritual healing in order to conceive.

1.2. During the **prenatal stage**, a variety of providers were consulted once or several times, such as non-government facilities, hospitals, *dais*, Local Government Health Centres, doctors and pharmacies, and several types of traditional and spiritual healers. On an average, there were 1.4 contacts per pregnancy. Choice of provider was mainly problem-related:

- Non-government and public facilities for instance, were primarily visited for tetanus immunization, while pharmacies and modern private practitioners are used in the case of illness, e.g., stomach aches and perceived decrease in general resistance against illnesses usually treated with vitamines;
- *Dais* (local term for TBA) were contacted mainly in the last month of pregnancy for receiving 'belly massage', which is believed to make the delivery process smoother;
- Finally, spiritual and other traditional healers were consulted particularly for superstitious beliefs, such as protection of mother and child from ill-health, curing *kharap batash* (bad air), and driving away evil spirits.

2. AT THE TIME OF DELIVERY

The dominant providers - as also illustrated by the quantitative data above - were *dais*, and relatives. Other health-care providers included hospitals, MBBS doctors, and nurses.

The providers in the case of deliveries, reported as **normal** (the total number of deliveries is 34) were:

- *Dais* in 31 out of the 34 cases, i.e., 91%;
- Maternities and hospitals in 3 cases out of the 34 cases, i.e., 9%.

Only one health-care provider - usually a *dai* - was thus used. Four normal deliveries, or 12% ended with a stillbirth.

The respondents reported 18 **complicated** deliveries out of the 52 deliveries. At least two health-care providers were used in each complicated delivery case. The provider

utilisation sequences for these 18 cases were:

- A *dai*, followed by a maternity/hospital in 6 out of the 18 cases, i.e., 33%;
- A *dai*, followed by an MBBS doctor in 2 cases (11%);
- A *dai* in 2 cases called an MBBS doctor because prolonged labour, but by the time the doctor arrived, the delivery was already completed (with a stillbirth; 11%);
- A *dai*, followed by a nurse in 2 cases (11%);
- A nurse, followed by an MBBS doctor in 1 case (6%);
- A nurse, followed by a hospital in 1 case (6%);
- A non-government health centre, followed by a hospital in 2 cases (11%);
- A trained *dai*, followed by 3 contacts with untrained *dai* in 1 case (6%);
- A fakir, followed by another fakir, followed by a non-government hospital in 1 case (6%).

In case of complicated deliveries, there were thus other health providers than *dais* involved. However, in two-thirds of the cases, the delivery started with a *dai*. In addition, only about 55% of the complicated cases ended up in a hospital setting.
Regarding the outcome of the complicated delivery cases, 13 or 72% ended with a stillbirth.

3. POSTNATAL PERIOD

Providers involved after delivery included MBBS doctors (8 contacts), dais (5 contacts), fakirs and hospitals (4 contacts each). As in the antenatal period, the choice of the provider was problem-related: doctors/hospitals were used when there was a medical problem; *dais* had follow-up visits at home to see how the mother and child were doing. Fakirs were consulted for seeking protection for the newborn (against illness, evil and danger/fear) and explanation why there was an 'abnormal' delivery, such as a stillbirth.

Besides, parents and relatives play an important role by caring for the mother while she stays with her parents at their house for 40 days after delivery, a common practice in Bangladesh.

E. REASONS FOR PREFERENCE OF HEALTH-CARE PROVIDERS

1. PRECONCEPTION

Help of mainly traditional providers is sought to get pregnant and because of the popular belief that any "*dosh*" (faults) must be cured to get pregnant. The main reported 'fault' to be treated is "*kaldristi*" or problems with menstruation.

2. PRENATAL CARE STAGE

Reasons for use of particular health-care options during the prenatal period were related to specific activities that respondents believe should be carried out during this period. The main reason why non-government and public facilities were used was that they provide

vaccination, i.e., tetanus immunization. The popular belief that massage of the pregnant mother's belly will facilitate delivery was the main reason for the use of *dais* in the last month of pregnancy. In contrast, spiritual and other traditional healers were used because of their power to drive away *"batash"* and bring good health to the expectant mother and the foetus. For instance, one of the cases was about a pregnant mother who went to the kobiraj and got an amulet, because the two previous pregnancies ended with premature stillbirths.

3. AT THE TIME OF DELIVERY

As pointed out above, *dais* were overwhelmingly used during deliveries. There were several reasons why *dais* were preferred (Table 13):

Table 13: Reasons why respondents prefer *dais* as birth attendants

Reasons	N*	%
Perceived quality of 'hospitals':		
-Fear of operation/caeserian section	10	22.2
-Ashamed of going to hospitals, because of male doctors	5	11.1
-Hospital is crowded; there is no privacy	4	8.9
-Little communication between patient and doctor in hospitals	3	6.7
-The doctor is impatient	3	6.7
General:		
-It is a common thing to deliver at home/Delivery is a natural process	9	20.0
-Only if there is a medical problem, then a modern health-care option is considered.	13	28.9
Economic reasons:		
-Financially not feasible to go to a hospital	13	28.9
Social:		
-Nobody available to take the mother to the hospital	3	6.7
-Relatives refuse to let the mother go to the hospital	3	6.7
Perceived quality of dais:		
-Good technical reputation of the *dai*	4	8.9

* Multiple responses possible. Total number of deliveries with *dais*: 45.

- The *perceived low quality of care* in *hospitals*: besides the absence of privacy and the shame for male doctors, mainly the fear for surgical intervention, although the latter may also hide the fear for the economic consequences of hospital deliveries in general, and of caesarian sections in particular (56%);
- The perception that the *delivery* is a *natural event*, and that 'medical care' is only required, if there are complications (49%);
- *Economic*, i.e., the non-availability of cash to go to the hospital (29%). May be more important, as is stated above;
- *Social*, i.e., non-availability of relatives to take the mother to the hospital, or relatives refusing that the mother be taken to the hospital (14%); and
- The *perceived good technical reputation of dais*.

4. POSTNATAL PERIOD

As for the antenatal period, the preferences expressed for one provider compared to another, were related to the type of problems they are believed to be able to solve. These problems have been described in the section above on the use of providers during the postnatal period.

5. REASONS FOR GOING TO THE COUNTRY-HOME TO DELIVER

As mentioned above, 14.5% of the deliveries took place in the expectant mother's country-home, and case studies were conducted on 17 of them. The respondents reported a number of reasons why delivering in the country-home is preferred:

- Parents are there and provide care: 9 respondents, or 52.9%;
- Greater water availability: 8 respondents, or 47.1%;
- Delivery is cheaper: 4 respondents, or 22.5%;
- Mother has less work to do: 3 respondents, or 17.7%;
- It is customary to go to the parents' house for the first delivery: 2 respondents, or 11.8%.

The main reasons for going to the country-home were thus the assistance and care parents can provide, and water availability. The lower costs of a delivery in the country-home are also mentioned as a reason. However, transport costs to and from the country-home that may be substantial, may not have been considered by the respondents as a cost related to the delivery.

F. EXPENDITURE ON DELIVERY CASES

The available evidence in the case studies shows that households not only spend on the delivery itself, but also on assistance during the preconception period, and the antenatal and postnatal stages.

1. PRECONCEPTION

In only one case study, costs for consulting a fakir to conceive were reported. They amounted to taka 101 (US$ 2.53)[3].

2. ANTENATAL CARE STAGE

There was a variety of costs involved in antenatal care activities. Although immunization is free, several respondents reported fees paid for 'check-ups' and antenatal

[3] 1US$ = Taka 40, in 1993.

visits. These fees range from taka 10 (USCent 25) to taka 300 (US$ 7.50). The highest fees were for a series of visits. In one other case, taka 10 (USCent 25) was reported as the costs for a visit by a *dai* to massage the mother's belly.

3. AT THE TIME OF DELIVERY

Typically, at time of a **normal** delivery attended by a *dai,* two types of expenses were to be met:

- Firstly, a gift (in most cases a saree) and/or delivery charges (rarely) and/or food or transport expenses for the *dai.* Expenses ranged from taka 40 (US$ 1.00) to taka 500 (US$ 12.50) and exceptionally more than taka 1000 (US$ 25);
- Secondly, a set of accessories to conduct the delivery, such as a razor blade, soap, antiseptic, thread, and sometimes some drugs like pain killers. Expenses ranged from taka 7 (USCent 18) to taka 50 (US$ 1.25).

In the case of a **complicated** delivery, with admission to the hospital, the total of official and unofficial fees, costs of drugs and transport and other miscellaneous expenses coould easily rise to taka 2000 (US$ 50), and in some cases to double this amount and more:

- In one case, taka 4000 (US$ 100) was reported as total expenditure;
- In another case, a total amount of taka 4600 (US$ 115) was paid. The respondent reported that the admission fee to Dhaka Medical Hospital was taka 7.50 (USCent 19), while unofficial fees to medical staff were taka 250 (US$ 6.25), drugs costed taka 1900 (US$ 47.50), and other miscellaneous expenses were taka 2443 (US$ 61.1).

However, in none of these cases a caesarean section was involved.

4. POSTNATAL PERIOD

A number of events during the postnatal period were reported with their costs:

- Giving a party (taka 900 or US$ 22.5);
- Burial of a dead newborn (taka 700 or US$ 17.50);
- Visit of a fakir (taka 202 or US$ 5.05);
- Milad prayers, i.e., prayers for the well-being of mother and baby (taka 100 or US$ 2.50);
- Special care for the baby by the *dai* (taka 2000 or US$ 50); and
- Massage of baby and the mother (taka 50 or US$ 1.25).

CONCLUSIONS ON DELIVERY CASES

1) The rate of stillbirths is high and most of them occur at home during deliveries attended by TBAs. There are two reported cases of uterine prolapse.
Stillbirths and uterine prolapse usually are consequences of prolonged labour. In order to avoid these to happen, timely referral to a hospital is required. Therefore, the presence of cases of uterine prolapse and of a high rate of stillbirths occurring at home are indicators of the absence of a proper (use of a) referral system for complicated delivery cases. The data show that low perceived quality of referral services and fear for high costs are at the root of this non-appropriate use.
We already highlighted in HEP Working Paper No.4 that places where caesarean sections can be performed, except the excessively expensive private clinics, are concentrated in a limited number of (mainly) public hospitals. In addition, it was shown that, although the services provided in these facilities are officially at nominal low fee levels, the average direct expenditure per contact in non-chronic illness cases is considerable (the highest after modern private care). This was mainly due to purchase by the user of drugs not available at the public facility. This finding correlates with the evidence on costs for complicated deliveries available from the case studies.

2) The respondents are right when they state that normal deliveries should take place at home. However, they have to be attended by properly trained TBAs.
The findings show that *dais* enjoy the confidence and respect from the community. What is thus lacking is appropriate technical skills of (un)trained TBAs, who currently attend most of the home-deliveries. The reasons should be examined why the massive training schemes of the past did not result in more appropriate attendance of deliveries and timely referral of those requiring referral care.

3) The first maternal death case indicates that health education messages on delivery practices should include a warning against the use of practitioners other than trained personnel, such as *peers* and other traditional healers.

The second maternal death case draws our attention to the broader socio-economic context. Urban poor and pregnant women do not get the opportunity to properly prepare for delivery. Social support, particularly from the husband, appropriate diet, rest on time and other measures that put the pregnant women into the optimal condition for delivery are unfortunately a far cry for most urban poor women.

Three out of the five twins died only hours or a few days after delivery. This is related to the absence of proper neonatal care.

In summary, the findings indicate that there is a clear need to improve (1) the socio-economic conditions of the urban poor women and more generally of the slum households, and (2) the maternal, neo- and perinatal health-care services for the urban poor. A set of measures including providing credit to poor women to enhance household income and community support groups may help to meet the first objective. In order to meet the second

objective, the following issues need to be addressed:

- A thorough evaluation of the performance of the TBAs;
- The establishment of Health Centres with which properly trained TBAs should link up to ensure proper antenatal and postnatal care and attendance of deliveries with timely referral of complicated cases;
- In order to treat these complicated cases, proper referral services, geographically accessible and with as little as possible (socio-economic and cultural) barriers must be made available. They will have to be functionally linked with the Health Centres and the TBAs;
- Finally, health education of pregnant women about the risk signs during delivery should help the mothers to recognize them on time during delivery. This education activity can only be carried out if the health service is able to reach the pregnant women. The activity is ideally integrated in the antenatal care activities of the community-based Health Centres. The health education messages should also pay due attention to the influence of beliefs and practices of slum residents on the health of mother and foetus/newborn, and on their economic consequences.

Achieving these objectives in improving health-care delivery is thus only possible through an integrated health-care system that includes community-based Health Centres with curative, antenatal and educational activities; and a referral level to which the Health Centres are linked up and that has as little as possible economic and socio-cultural barriers to use. Furthermore, training and follow-up of the performance of the *dais* is best organised within the framework of such as health-care system.

CHAPTER 3
HOSPITALISATION AND SURGICAL/TRAUMATIC CASES

The in-patient cases and minor and major traumatic and surgical cases were included in the presentation of the data on health-care option use and expenditure of the non-chronic and chronic illness cases in the present HEP Working Paper and the HEP Working Papers Nos. 4-98 and 5-98. However, they are discussed here into detail, because of their specific nature.

A. DESCRIPTION OF THE CASES

Table 14 gives a summary description of the 26 in-patient and traumatic/surgical cases:

- *In-patient* cases (N=9): 3 acute respiratory infection cases, 3 gynaeco-obstetric cases, 1 measles case, 1 diabetes case, and 1 hypertension case;
- *Traumatic and surgical* cases (N=17):
  - Minor cases (n=14): 4 cases of tooth extraction, 2 cut injuries, 4 other traumatic cases, 1 case of circumcision, 1 case of otitis/ear cleansing, 1 gynaecological case, and 1 case of rheumatism.
  - Major surgical cases (n=3): 1 case of cataract, and 2 gastro-abdominal cases, i.e., one case of cholecystolithiasis, and one case of 'a stone in the abdomen'.

Assuming that the reported severe illness cases correspond to the cases to be presented to a community-based health-care infrastructure, all in-patient and surgical cases combined represent 0.71% of all reported severe illness cases (N=3659). This is 2 to 3 times lower than commonly accepted levels of hospital admissions as a percentage of new cases treated at community-based health facilities, which is in the range of 1.5 to 2 percent[4].

B. HOSPITALISATION AND SURGICAL/TRAUMATIC CASES BY DEMOGRAPHIC AND ECONOMIC VARIABLES

1. AGE AND GENDER DISTRIBUTION

Table 14 further gives details on the age and gender characteristics of these 26 cases. Apart from the three gynaeco-obstetric cases which are all found in females aged 17 to 20 years, no particular age or gender-specific patterns are observed.

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4 Rapports Annuels 1986-1987-1988, Zone de Santé Rurale, Kasongo, Democratic Republic of Congo (formerly Zaire).

Table 14: Age and gender characteristics of hospitalisation and minor and major surgical/traumatic cases

Description	Sex (M/F)/Age (years)
IN-PATIENT CASES (N=9)	
Acute respiratory cases (3 cases)	M/0* M/0 F/23
Gynaeco-obstetric cases (3 cases)	F/17 F/19 F/20
Others	
Measles	M/0
Diabetes	M/50
Hypertension	F/50
MINOR TRAUMATIC/SURGICAL CASES (N=14)	
Tooth extraction (4 cases)	M/21 M/30 F/14 F/61
Cut injuries (2 cases)	M/9 M/12
Other traumatic cases (4 cases)	F/2 F/23 M/9 M/0
Others	
Circumcision	M/6
Otalgia/ear cleansing	F/8
Medical abortion	F/25
Rheumatism	F/39
MAJOR SURGICAL CASES (N=3)	
Cataract	M/40
Gastro-abdominal cases (2 cases)	F/38 F/52

* Age 0 = less than 1 year old.

Table 15 presents the absolute and relative age-gender distribution. The denominators used for the relative frequencies are the age/gender-group specific numbers of severe illness episodes. Although overall absolute and relative frequencies are similar for females and males, the majority of female cases is found in the 'above 18 year' age-group, while the majority of male cases is found in the '0 - 12 year' age-group with the number of cases almost four times higher for male children than for female children. In the '13 - 18' and the 'above 18 year' age-groups, the relative frequencies are higher for females than for males (in the 'above 18 year' age-group, about 1.6 times).

Table 15: Absolute and relative frequencies of hospitalisation and minor and major surgical/traumatic cases for age/gender categories

	Female				Male			
	0-12	13-18	>18	*Total*	0-12	13-18	>18	*Total*
In-patient	-	1	4	*5*	3	-	1	*4*
Minor surg/traum	2	1	4	*7*	5	-	2	*7*
Major surg/traum	-	-	2	*2*	-	-	1	*1*
Total	*2*	*2*	*10*	*14*	*8*	*0*	*4*	*12*
N severe cases	807	155	1070	2032	867	79	681	1627
Relative frequency	.25	1.29	.93	.69	.92	0	.59	.74

2. HOUSEHOLD INCOME

Although absolute figures are small, Table 16 shows a positive association between the number of hospitalisation and surgical and traumatic cases and the household income (as for the calculations in Table 15, the cases are again taken as a proportion of the total number of severe illness cases):

- Overall, the rates gradually increase from the second to the highest income quintile. The rate for the lowest quintile is slightly higher than for the second quintile;
- The increase is considerable: the rate in the third quintile is 1.66 times higher than in the second quintile; in the fourth quintile twice as big; and in the highest quintile 4.6 times higher than in the second income quintile;
- More than half of the hospitalisation cases are in the highest income quintile.

Table 16: Absolute and relative frequencies of hospitalisation and minor and major surgical/traumatic cases for household income quintiles

Income quintile	N of severe Illness Episodes	In-patient		Minor surg/ traumatic		Major surg/ traumatic		Total	
		N	Relat freq	N	Relat freq	N	Relat freq	N	Relat freq
1	688	2	0.29	1	0.15	-	-	3	0.44
2	624	1	0.16	1	0.16	-	-	2	0.32
3	750	-*	-	3	0.40	1	0.13	4	0.53
4	783	1	0.13	4	0.51	-	-	5	0.64
5	814	5	0.61	5	0.61	2	0.27	12	1.47
Total	3659	9	0.25	14	0.38	3	0.08	26	0.71

* - = no cases.

C. HOSPITALISATION AND SURGICAL/TRAUMATIC CASES: HEALTH-CARE OPTION UTILISATION

In several cases more than one health-care option was used, and utilisation patterns are specific for hospitalisation cases, minor and major surgical/traumatic cases. Therefore, the three categories will be discussed separately.

1. MINOR SURGICAL AND TRAUMATIC CASES

Table 17 indicates that **MBBS doctors** and **dental surgeons** were the main health-care option used for this kind of cases. There were, however, a number of specific cases: a female *kobiraj* made a small incision over the eyelid in an eye trauma case due to an insect bite; a healer known in the community for performing circumcisions did so in the circumcision case; a compounder 'who cleaned the ear' in the otalgia case; and an *ojha* (a kind of traditional healer) 'who performed a bloodletting' in the rheumatism case.

Table 17 further indicates that *before* MBBS doctors were consulted, none (in 5 out of the 14 cases) to three other health-care options were used. Home-care and wait-and-see were by far the most used.

In only six cases, health-care options were used *subsequently* to the MBBS doctor:

- In the two cut injury cases, the same MBBS doctor was visited a second time to cut the stitches;
- In the case of general weakness due to pregnancy, the use of an MBBS doctor was followed by home-care and a pharmacy;
- The use of the compounder to cleanse the ear was followed by home-care and a

homeopath;

- The use of a female kobiraj (in the insect bite case) was followed by the consult of a compounder;
- In the rheumatism case, the use of an *ojha* was followed by consultation of another type of traditional healer, namely a *fakir*.

Table 17: Health-care option utilisation in minor surgical/traumatic cases

Case description	Sex Age	Health-care option	Previous health-care options	Subsequent health-care options
Tooth extraction	M,30	BDS**	-	-
Tooth extraction	F,61	BDS	Home-care;NGOcentre	-
Tooth extraction	M,21	NGO-hospital	Home-care;Compounder	-
Tooth extraction	F,14	BDS	Home-care	-
Cut injury	M,9	MBBS	-	MBBS
Cut injury	M,12	MBBS	-	MBBS;MBBS
Chest trauma	F,2	Children's hospital	Fakir;homeopath;NGO centre	-
Needle prick foot (weaving factory)	M,9	Private clinic	-	-
Abscess due to injection	M,0*	MBBS	Wait-and-see;home-care	-
Insect bite eyelid	F,23	Female kobiraj	Wait-and-see;home-care;pharmacy	compounder
Circumcision	M,6	Somebody doing circumcision	-	-
General weakness/ pregnancy	F,25	MBBS (curettage)	Wait-and-see	Home-care; pharmacy
Otalgia/ear cleansing	F,8	Compounder	Home-care	Home-care; homeopath
Rheumatism	F,39	Traditional healer *(ojha)*	Wait-and-see;home-care;pharmacy	Traditional healer *(fakir)*

* Age 0 = less than 1 year old. ** BDS = Bachelor of Dental Surgery.

There was thus substantial 'option shopping' in the minor surgical/traumatic cases: on average there were 2.7 contacts per case.

2. MAJOR SURGICAL CASES

Table 18 shows that:

- The two gastro-abdominal cases were operated in a private clinic;
- The cataract case was operated in one of the well-known non-government eye hospitals, subsidised by the state;
- None of the three major surgical cases was thus operated in a public hospital.

Before the surgical intervention, home-care was used in the two gastro-intestinal cases, and in one of the two cases an MBBS doctor was consulted too. No subsequent health-care options were used. The cataract case, was first seen in another well-known non-government eye hospital; after intervention a check-up consultation was made in the hospital where the intervention was carried out. There was thus not much 'option shopping' in these

three major surgical cases.

Table 18: Health-care option utilisation in major surgical cases

Case description	Sex Age	Health-care option	Previous health-care options	Subsequent health-care options
Stone in abdomen	F,52	Private clinic	Home-care	-
Gallbladder stone	F,38	Private clinic	Home-care;MBBS	-
Cataract	M,40	Islamia Eye Hospital	Lion's Eye Hospital	Check-up Islamia Eye Hospital

3. HOSPITALISATION CASES

Contrary to the major surgical intervention cases, six out of the nine in-patient cases were admitted to public hospitals (Table 19). The three remaining patients were admitted to two NGO-hospitals, which are both substantially subsidised by the state.

Table 19: Health-care option utilisation in in-patient cases

Case description	Sex Age	Health-care option	Previous health-care options	Subsequent health-care options
Cough;running nose	F,23	Public hospital	Wait&See;MBBS	Pharmacy
Cough;fever;rapid breathing	M,0*	Public hospital	Home-care	Homeopath;fakir; public hospital; home-care
Cough;cold	M,0	Children's hospital	Home-care; compounder	Home-care
Restless; less breathing during pregnancy	F,17	Public hospital	-	Fakir
Tumor breast	F,19	Public hospital	-	-
Menorrhagia	F,20	Public hospital	Homeopath;MBBS; private clinic	-
Measles	M,0	Children's hospital	Home-care; homeopath; fakir;MBBS	MBBS
Diabetes	M,50	NGO-hospital	MBBS	NGO-hospital
Hypertension/ convulsion	F,50	Public hospital	Modern unqualif; public hospital	Modern unqualif; public hospital

* Age 0 = less than 1 year old.

Prior to hospital admission, a variety of health-care options were used, with majority of the cases more than one health-care option. In four cases, an MBBS doctor was consulted immediately before hospital admission.

After discharge from the hospital, several health-care options were used in the majority of the cases. In the second respiratory case, the diabetes case and the hypertension/convulsion case, the same hospitals were used for check-ups at the outdoor

departments. In hospitalisation cases, like in minor surgical/traumatic cases, substantial 'option shopping' may thus be observed with: on average 3.5 contacts per case.

The histories of health-care option use of three cases illustrate some particularities in the health-care delivery in Dhaka-City:

- The breast tumor case and the menorrhagia case are both from the lowest income quintile. In the breast tumor case, the patient was denied admission for two days (the patient waited during two days outside the public hospital). The patient and her family ultimately bribed the personnel to get admitted and treated. Despite treatment, the patient died in the hospital. In the menorrhagia case, the patient was refused admission to the private clinic, because taka 2000 was demanded, an amount the patient and her family could not afford. Therefore, they went to a public hospital to get admitted there. See section D for details on the out-of-pocket payments of these cases;
- The hypertension/convulsion case went first to the public Infectious Diseases Hospital, which is near to the place where the patient lives. Because the hospital lacks the technical equipment and staff to treat such as a case, the patient was referred to the public Dhaka Medical College Hospital.

D. DIRECT USER EXPENDITURE IN HOSPITALISATION AND SURGICAL/ TRAUMATIC CASES

Data on direct user expenditure or out-of-pocket expenditure are presented in Tables 20 and 21 (for minor and major surgical/traumatic cases respectively), and 22 (for hospitalisation cases). The expenditure data are presented according to:

(1) the health-care option where surgery or another intervention, or hospital admission took place;
(2) the health-care options used *prior to* the health-care option mentioned under (1); and
(3) the health-care options used *after* the health-care option mentioned under (1).

1. MINOR SURGICAL AND TRAUMATIC CASES

Table 20 gives the details of direct user expenditure in the 14 minor surgical and traumatic cases. The following is observed:

- Regarding *overall* expenditure. All but three cases had overall expenditures between taka 100 (US$ 2.5) and taka 510 (US$ 12.75). The **mean** was **taka 256 (US$ 6.40)**, and the **median, taka 173 (US$ 4.33)** The three exceptions were one of the cases of tooth extraction and the case of the insect bite in the eyelid with the lowest expenditures (taka 35 and 70 respectively), and another tooth extraction case with the highest overall expenditure (i.e. taka 916);
- The bulk of the expenditure was in most cases for the health-care option that was responsible for the intervention.

Table 20: Direct user expenditure in minor surgical/traumatic cases (All amounts in Taka)

Case description	Sex Age	Income quin-tile	Health-care option		Previous health-care options		Subsequent health-care options		Total
				Expend		Expend		Expend	
Tooth extraction	M,30	5	BDS**	916	-	0	-	0	916
Tooth extraction	F,61	4	BDS	150	Home-care;NGO centre	0	-	0	150
Tooth extraction	M,21	4	NGO-hospital	15	Home-care;Compounder	20	-	0	35
Tooth extraction	F,14	3	BDS	248	Home-care	0	-	0	248
Cut injury	M,9	5	MBBS	140	-	0	MBBS	20	160
Cut injury	M,12	5	MBBS	110	-	0	MBBS;MBBS	75	185
Chest trauma	F,2	4	Children's hospital	428	Fakir;homeopath;NGO centre	5	-	0	433
Needle prick foot (weaving factory)	M,9	5	Private clinic	510	-	0	-	0	510
Abscess due to injection	M,0*	2	MBBS	138	Wait-and-see;home-care	0	-	0	138
Insect bite eyelid	F,23	4	Female kobiraj	20	Wait-and-see;home-care;pharmacy	20	Compounder	30	70
Circumcision	M,6	3	Somebody doing circumcision	230	-	0	-	0	230
General weakness/ pregnancy	F,25	1	MBBS (curettage)	200	Wait-and-see	0	Home-care; pharmacy	97	297
Otalgia/ear cleansing	F,8	3	Compounder	85	Home-care	0	Home-care; homeopath	15	100
Rheumatism	F,39	5	Traditional healer *(ojha)*	35	Wait-and-see;home-care;pharmacy	64	Traditional healer *(fakir)*	10	109

* Age 0 = less than 1 year old. ** BDS = Bachelor of Dental Surgery.

2. MAJOR SURGICAL CASES

Table 21 presents the details of direct user expenditure in the 3 major surgical cases. The following is observed:

- The two gastro-intestinal surgical interventions, both performed in a private for-profit clinic, had an overall user expenditure **each** of about **taka 20,000 (US$ 500).** The fact that both the cases were from households in the highest income quintile may have contributed to the choice of this health-care option (private clinics are overall only exceptionally used by slum residents, see HEP Working Paper No.4);
- The intervention on cataract, performed in a non-government specialised hospital, had an overall user expenditure of about **taka 1,200 (US$ 30);**
- As for the minor cases, the virtual totality of the expenditure per case was incurred for the health-care option that was responsible for carrying out the surgical intervention.

3. HOSPITALISATION CASES

Table 22 gives the details of direct user expenditure for the 9 in-patient cases:

- The diabetes case had a very high total user expenditure of about taka 13,100. Next were three cases with expenditures between taka 1275 and taka 1450. Two cases had middle range expenditures: taka 755 and taka 950. The three lowest expenditures ranged between taka 440 and 652;
- Consequently, the **mean** user expenditure was **taka 913 (US$ 22.83)** excluding the diabetes case, and, **taka 2273 (US$ 56.83)** including the diabetes case. The **median** was **taka 853 (US$ 21.33)** excluding the diabetes case, and, **taka 950 (US$ 23.75)** including the diabetes case;
- Again, by far the greatest portion of the total user expenditure per case was spent on the health-care option, where the patient was admitted.

Table 21: Direct user expenditure in major surgical cases (All amounts in Taka)

Case description	Sex Age	Income quin-tile	Health-care option		Previous health-care options		Subsequent health-care options		Total
				Expend		Expend		Expend	
Stone in abdomen	F,52	5	Private clinic	19200	Home-care	40	-	0	19240
Gallbladder stone	F,38	5	Private clinic	19600	Home-care;MBBS	830	-	0	20430
Cataract	M,40	3	Islamia Eye Hospital	965	Lion's Eye Hospital	20	Check-up Islamia Eye Hospital	186	1171

Table 22: Direct user expenditure in in-patient cases (All amounts in Taka)

Case description	Sex Age	Income quin-tile	Health-care option		Previous health-care options		Subsequent health-care options		Total
				Expend		Expend		Expend	
Cough;running nose	F,23	5	Public hospital	380	Wait&See;MBBS	72	Pharmacy	200	652
Cough;fever;rapid breathing	M,0*	5	Public hospital	873	Home-care	0	Homeopath;fakir; Public hospital; home-care	416	1289
Cough;cold	M,0	5	Children's hospital	1378	Home-care;compounder	71	Home-care	0	1449
Restless; less breathing during pregnancy	F,17	5	Public hospital	392	-	0	Fakir	50	442
Tumor breast	F,19	1	Public hospital	755	-	0	-	-	755
Menorrhagia	F,20	1	Public hospital	850	Homeopath;MBBS; private clinic	100	-	-	950
Measles	M,0	4	Children's hospital	950	Home-care;homeopath; fakir;MBBS	219	MBBS	90	1259
Diabetes	M,50	5	NGO-hospital	11630	MBBS	660	NGO-hospital	863	13153
Hypertension/ convulsion	F,50	5	Public hospital	355	Modern unqualif; public hospital	30	Modern unqualif; public hospital	120	505

* Age 0 = less than 1 year old.

E. SOURCES OF FINANCING TO COVER DIRECT EXPENDITURE IN HOSPITALISATION AND SURGICAL/TRAUMATIC CASES

1. MINOR SURGICAL AND TRAUMATIC CASES

Table 23 shows that in 5 out of the 14 cases, the household resorted to other than cash/savings sources to finance the expenses of health-care: 4 loans were taken and one grant. The lowest loan was taka 50, the other loans were between taka 140 and 300. The grant was taka 138. They represent between 59% and 100% of total expenditure.

Whether to take loans or not did not seem to be related to household income level. This is most probably due to the relatively low levels of total case expenditure.

Table 23: Coverage of direct user expenditure in minor surgical and traumatic cases (All amounts in Taka)

Case description	Income quintile	User Expenditure				Coverage			
		HCO*	Previous HCO	Subseq HCO	Total	Cash/ Savings	Loan	Grant	Sale
Tooth extraction	5	916	0	0	916	916	-	-	-
Tooth extraction	4	150	0	0	150	150	-	-	-
Tooth extraction	4	15	20	0	35	35	-	-	-
Tooth extraction	3	248	0	0	248	248	-	-	-
Cut injury	5	140	0	20	160	20	140	-	-
Cut injury	5	110	0	75	185	185	-		
Chest trauma	4	428	5	0	433	155	278	-	-
Needle prick foot (weaving factory)	5	510	0	0	510	210	300	-	-
Abscess due to injection	2	138	0	0	138	-	-	138	-
Insect bite eyelid	4	20	20	30	70	20	50	-	-
Circumcision	3	230	0	0	230	230	-	-	-
General weakness/ pregnancy	1	200	0	97	297	297	-	-	-
Otalgia/ear cleansing	3	85	0	15	100	100	-	-	-
Rheumatism	5	35	64	10	109	109	-	-	-

*HCO = health-care option.

2. MAJOR SURGICAL CASES

In all three cases substantial loans were taken in comparison to the total case expenditure (Table 24). In one gastro-intestinal case the loan (taka 10,000) covered about half the total case expenditure, and in the other case about 75% (taka 15,000). In the cataract case, the loan virtually covered the total case expenditure.

Table 24: Coverage of direct user expenditure in major surgical cases (All amounts in Taka)

Case description	Income quin	User Expenditure				Coverage			
		HCO*	Previous HCO	Subseq HCO	Total	Cash/ Savings	Loan	Grant	Sale
Stone abdomen	5	19200	40	0	19240	9240	10000	-	-
Gallbladder stone	5	19600	830	0	20430	5430	15000	-	-
Cataract	3	965	20	186	1171	30	1141	-	-

*HCO = health-care option.

3. IN-PATIENT CASES

Table 25 indicates that taking loans in in-patient cases is associated with household income:

- Loans were taken to cover the costs of the two in-patient cases from households in the lowest income quintile, of the only case from a household from income quintile 4, and of only one out of the 5 cases from households in the highest income quintile. The total cost of the latter case is taka 13153, about 10 times higher than the second highest cost figure;
- In contrast, in all the other cases, which are all from the highest income quintile, no loans at all were taken;
- The loan amount is taka 7000 for the case with the highest cost figure and represents 53% of total case expenditure, and for the other cases between taka 400 and 1034. They represent between 43% and 89% of the total expenditure per case.

Table 25: Coverage of direct user expenditure for in-patient cases (All amounts in Taka)

Case description	Income quintile	User Expenditure				Coverage			
		HCO	Previous HCO	Subseq HCO	Total	Cash/ Savings	Loan	Grant	Sale
Cough; running nose	5	380	72	200	652	652	-	-	-
Cough; fever; rapid breathing	5	873	0	416	1289	1289	-	-	-
Cough; cold	5	1378	71	0	1449	1449	-	-	-
Restless; less breathing during pregnancy	5	392	0	50	442	442	-	-	-
Tumor breast	1	755	0	0	755	355	400	-	-
Menorrhagia	1	850	100	0	950	100	850	-	-
Measles	4	950	219	90	1259	225	1034	-	-
Diabetes	5	11630	660	863	13153	6153	7000	-	-
Hypertension/ convulsion	5	355	30	120	505	505	-	-	-

*HCO = health-care option.

CONCLUSIONS ON HOSPITALISATION AND SURGICAL/TRAUMATIC CASES

1) The overall proportion of severe illness cases where in-patient or surgical care was used, is low compared to empirical data in the literature. It indicates the non-use of technically more sophisticated health-care in cases that would require such care. This finding is supported by the details hereunder on the limited use of modern qualified care (MBBS doctors or hospital care) in the 34 reported death cases:

- There were 15 *neonatal* death cases. Eleven deaths occurred within 7 days. Out of them, only one baby died at the hospital (this was one baby of a twin, the parents did not trust the hospital where this baby died and took the other home to show him to a traditional healer, but that baby also died before his arrival). Another case was attended prior to death by an unqualified modern healer. Four neonatal death cases were attended by traditional healers as last health-care provider. The remaining 8 died without any care (out of whom there were 2 twins);

- There were 10 *infant* deaths. Three were treated at a hospital prior to death. Another infant was taken away from the hospital by his parents, due to shortage of money and because they found the child's condition improved, but he died after seven days at home without further treatment. Two cases were treated by traditional healers before death, one by homeopath, and the other one with home-care. In two cases nothing was done (one case was a girl of 38 days of whom the mother became ill and unable to breast-feed the child, but the father refused to buy milk, because she was a girl). One case was accidental (i.e. drowning);

- There were 3 *child* deaths, one was treated prior to death by a traditional healer, the second one by homeopath, and the third one by an MBBS doctor;

- Two were *maternal* death cases at time of delivery, both primi-para. The cases were presented in detail in Chapter 2 of this Working Paper. One case died at a non-government health centre after being treated by a *peer*, the other one died on the way to a hospital, after being referred by an MBBS doctor;

- Finally, there were 4 *other adult* death cases. One was attended by an MBBS doctor, another died at a hospital, another one got treated with home-care, and the last one did not receive any care.

Table 26 gives a numerical overview of the last health-care option used prior to death. It shows that overall, more than one-third of the death cases did not receive any care (this is particularly influenced by the early neonatal death cases), and another one third received traditional care or modern unqualified care or homeopathy. About 18% received hospital care, and another 9% was treated by other modern qualified providers. *Only about 27% of the death cases received thus prior to death treatment from modern qualified practitioners.*

Table 26: Last health-care option used prior to death

Age-groups	Use (%) of				No care	Total
	Hospital	Other modern qualified	Traditional/ homeopathy/ mod unqualif	Home-care		
Neonatal						
0 - 7 days	1	-	2	-	8	11
8 - 30 days	-	-	4	-	-	4
Other infant	3	-	3	1	3*	10
Child	-	1	2	-	-	3
Maternal	1	1	-	-	-	2
Other adult	1	1	-	1	1	4
Total N(%)	6(18)	3(9)	11(32)	2(6)	12(35)	34(100)

* Including one accidental case (drowning).

2) Although disaggregated figures are low, the proportion of severe illness cases where in-patient care was used, or minor or major surgery was performed appears to be household income related.

3) In minor surgical/traumatic cases and particularly in hospitalisation cases, there is substantial *'health-care option shopping'*.
Health-care option shopping prior to hospitalisation may be due the gradual aggravation of the case. MBBS doctors who should be the first option in severe illness cases and who should take care of timely referral to hospitals have only seen 4 out of the 9 cases. In only one case, the patient was reported to have been actively referred to a hospital by the MBBS doctor.

4) Financial inability of the patient to comply with the demands of some hospitals for tips and of private clinics for advance payment, leads to *denial of admission*. In this study this happened with 2 patients from the lowest income quintile.

5) Regarding *household coping with out-of-pocket health-care expenditure*:

- In about one-third of the 14 *minor surgical/traumatic cases*, loans or grants were used to cover the expenditure. These represent between 60% and 100% of that expenditure. There appeared to be no relationship with household income, probably due to the relatively low case expenditures;
- The only 2 cases of *major surgical gastro-intestinal intervention* are both in households in the highest income quintile. Their costs amount to more than taka 20,000 per case and taka 10,000 and 15,000 respectively were taken as loans. They illustrate the ability of the highest income quintile to take substantial loans to cover (substantial) health-care costs;

- Out of the 9 *in-patient cases*, the only two cases from the lowest income quintile took loans to cover the health-care costs, while only 1 out of the 6 cases from the highest income quintile did so. This indicates the precarious socio-economic situation of the poorest households regarding illness cases that would need hospital care. Loans represented between 40% and 90% of health-care expenditure;

- Finally, *no sale of assets* was reported to cover the costs of hospitalisation or surgical intervention. This may be attributed to the fact that - as indicated in HEP Working Paper No.3-98 - most slum households possess only a limited number of assets, such as a few pots for cooking, one bed or one table. The few households who possess some more assets do not need to sell them because they have access to and are able to manage other means, such as cash and loans, to cover substantial health-care expenditure. Furthermore, we also highlighted in HEP Working Paper No.5-98 that it may not be easy to sell assets in a short period of time so as to mobilise resources to cover health-care costs.

ANNEXES

Annex 1: **Percentage use/need ratio in chronic illness phases by selected demographic and socio-economic variables**

A. AGE & GENDER

1. MALE

Age	Wait & see	Home-care	Pharmacy	Modern private	Public	Non-gov't	Modern unqualif.	Homeo-pathy	Tradi-tional	Total contacts
0-5 Yrs	32	32	12	5.3	4	4	-	8	2.7	75
6-12 Yrs	23.3	33.3	6.7	6.7	-	16.7	-	-	13.3	30
13-18 Yrs	7.1	7.1	57.1	-	7.1	7.1	-	-	14.3	14
19-45 Yrs	15.1	16	27.6	14.2	3.9	5.2	5.2	3.9	9.1	232
>45 Yrs	16.8	21.5	35.5	8.4	2.8	0.9	4.7	2.8	6.5	107

2. FEMALE

Age	Wait & see	Home care	Pharmacy	Modern private	Public	Non-oov't	Modern unqualif.	Homeo-pathy	Tradi-tional	Total contacts
0-5 Yrs	15.7	32.4	9.8	11.8	4.9	2.9	-	15.7	6.9	102
6-12 Yrs	12.8	23.1	12.8	10.3	10.3	23.1	-	-	7.7	39
13-18 Yrs	21.1	13.2	26.3	18.4	2.6	-	7.9	5.3	5.3	38
19-45 Yrs	18.9	23.5	23.7	9.2	6	5.1	1.8	4.8	6.9	434
>45 Yrs	18	28.2	15.4	13.5	2.6	6.4	7.7	1.3	7.1	156

B. EDUCATION

1. MOTHER'S EDUCATION

Education level	Wait & see	Home care	Pharmacy	Modern private	Public	Non-gov't	Modern unqual	Homeopath	Tradi tional	Total contacts
No Edu	20	29.7	10	8.9	8.1	9.6	0	7.3	6.5	260
1-5 Yrs	20.9	36	5.8	11.6	5.8	2.3	0	9.3	7	86

2. FATHER'S EDUCATION

Education level	Wait & see	Home care	Pharmacy	Modern private	Public	Non-gov't	Modern unqual	Homeopath	Tradi tional	Total contacts
No Edu	18.4	30.8	11.9	6	8.7	10.8	0	6	7.6	185
1-5 Yrs	17.2	29.9	4.6	17.2	8.1	4.6	0	12.6	5.8	87
> 5 Yrs	25.5	34.6	9.1	10.9	3.6	3.6	0	9.1	3.6	55

C. HOUSEHOLD INCOME

Income quintiles	Wait & see	Home care	Pharmacy	Modern private	Public	Non-gov't	Modern unqual	Homeopath	Tradi tional	Total contacts
1	25.6	21.9	20.1	8.2	4.1	8.7	0.9	2.7	7.8	219
2	18.3	25.7	20.3	8.6	3.1	6.6	3.5	3.8	10	290
3	14.2	22.7	19	9.6	8	11.5	6.2	3.5	5.4	374
4	16.8	22.8	24.3	11.1	4.5	4.5	2.1	5.4	8.4	333
5	19.5	22.2	19.1	14.6	5.9	2.6	1.6	5.1	9.5	508

Annex 2: **Cost structure per chronic illness phase for the main chronic illness categories**

CHRONIC illness cateogry	Cost items*								Mean expenditure per phase
	Travel	Admission	Consul-tation	Drugs	Surgical interv	Hospita-lisation	Diagnostic test	Others	
Gastric pain	5.5	.2	7.2	61.4	-	-	15.3	-	89.6
Skin ailment	2.0	.4	7.5	53.5	-	-	.1	-	63.5
Joint ailment	2.9	.5	2.2	36.7	.5	-	10.6	.1	53.5
Difficult breathing	4.3	-	7.0	67.9	-	-	5.0	-	84.3
Headache	.9	.1	.6	20.3	-	-	-	-	21.9
Diarrhoea	.4	.1	-	8.1	-	-	-	-	8.6
Blood pressure	2.2	.6	5.0	76.6	-	-	-	-	84.5
Non-specific pain	2.7	.3	6.7	37.3	-	-	22.9	-	69.9
Respiratory ailment	3.0	1.3	-	51.5	-	-	.4	-	56.2
NSGAA**	6.8	-	5.0	73.0	-	-	-	-	84.8
Dental ailemnt	1.5	.5	2.5	22.5	.6	-	-	-	27.6
Eye ailment	11.6	1.6	3.0	82.7	15.2	15.2	3.5	.2	133.0
Other	10.3	.7	9.0	84.9	-	35.4	24.4	4.6	169.0
All	4.9	0.4	5.6	56.9	0.4	7.9	10.2	0.9	87.2

* All figures are absolute figures.

** NSGAA - Non-specific gastro-abdominal ailment

Annex 3: **Direct user health-care expenditure per chronic illness phase by selected demographic & socio-economic variables**

1. AGE AND GENDER

Age in years	Male			Female		
	Mean	SE	Median	Mean	SE	Median
0-5	15.9	5.7	-	35.3	11.9	13.5
6-12	18.2	6.9	6	42.5	19	5.5
13-18	29.1	11.8	18	64.7	23.1	12
19-45	107.9	26.2	15	64	11.9	5
> 45	61.7	24.6	20	57	14.6	9
All	73.2	14.4	10	58	7.6	6

2. EDUCATION LEVEL

Age in years	Mother			Father		
	Mean	SE	Median	Mean	SE	Median
0	79.1	24.3	5	55.1	12.4	12
1-5*	55.3	15.9	10	74.7	23.5	9
> 5	-	-	-	37.3	12.1	6
All	73.8	19.2	-	55.5	9.3	-

*For Mother's education: includes all observations in the subcategories '1-5 years' and '> 5 years' of education.

3. HOUSEHOLD INCOME

Income quintile	Mean	SE	Median
1	66.4	22.6	2
2	67.4	28.1	8
3	69.8	13.6	12
4	72.4	13.7	10
5	127.7	47.6	15
All	87.2	16.1	1