

*OCCASIONAL PAPER*

**14**

**SOCIO ECONOMIC PROFILE OF PATIENTS  
IN KOLKATA**

**A CASE STUDY OF RG KAR AND AMRI**

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# **SOCIO ECONOMIC PROFILE OF PATIENTS IN KOLKATA A CASE STUDY OF RG KAR AND AMRI**

**Zakir Husain, Saswata Ghosh, Bijoya Roy**

## **Abstract**

*The present study examines the socio-economic profile of patients in the public health sector in Kolkata. It is based on a primary survey of 1734 patients from three departments in R.G. Kar Medical College and Hospital (a public sector institution) and Advanced Medicare Research Institute (representing a public-private partnership). The survey collected information on the educational levels, socio-religious identity, age, and other personal characteristics of the patient. In addition, data was collected on the nature of ailment and the referral pattern. The study does not find any support for the proposition that the poor are getting pushed out of the health care system in Kolkata – on the contrary, the public health care remains a vital life support system of the poor. However, there are indications that the three tiered referral system has broken down. As a result, R.G. Kar Medical College & Hospital, originally conceived as the referral health care institution in North 24 Parganas, is functioning as a diagnosis unit. AMRI, on the other hand, seems to have failed in attaining its objective of providing specialized treatment to all sections of the population. We find that only a minor proportion of the patients are from the low income households.*

## **1. Introduction**

Empirical studies have established that the burden of diseases - both communicable and non-communicable - is significantly higher in middle and low income countries compared to high income

countries. The World Health Report (WHO, 1999) estimates that this burden is only 7% in developed countries, but is as high as 44% in middle and low income countries. This imposes a significant negative effect on the economic growth rate (Duraisamy & Mahal, 2005). Provisioning of an efficient and accessible<sup>1</sup> health care system, therefore, becomes an important objective in developing countries like India. International consensus on this account has been duly reflected in important documents like the World Development Reports of 1993 and 1997, the 1999 World Health Report and in the Millennium Development Goals.

While the World Development Report of 1993 had defined the role of the State in the health sector (World Bank, 1993), it had not explicitly addressed the issue of equity. Rather, its focus was on the provisioning of public goods and services with significant externalities in a *cost-effective* manner. The emphasis on efficient provisioning of health care had sparked off a wide range of extensive reforms in the health sector since the mid-1990s. In India, such reforms were reinforced by the Structural Adjustment Programme (SAP), forming the backdrop against which health sector reforms occurred. Given the reduction in expenditure on social sector under SAP (Purohit, 2001),<sup>2</sup> the traditional role of the State as a major provider of health care services had to be redefined. As an increasingly greater space was provided to private health service providers, particularly MNCs, the State took upon the mantle of regulator and guarantor. The logic of this shift was that the private providers would be able to offer a wider range of options to the consumer. Simultaneously, it would increase competition in the health sector, ensuring greater efficiency and restricting the scope to reap monopoly profits (Zwi et al, 2001, GOI, 2004a). This has been accompanied by reforms in the public sector – delivery through Private Public Partnerships (PPPs) (in the form of outsourcing or joint equity ventures) (Baru, 2000), introduction of user charges (Mahal and Veerabhraiah, 2005).

<sup>1</sup> Accessible in terms of physical access and cost.

<sup>2</sup> While WHO recommends spending 5% of GDP on public health care, India spent only 1.3% of GDP. This fell further, after liberalization, to 0.9% of GDP (Srinivasan, 2002).

Unfortunately, the post reforms experience shows that such hopes have not materialized. Equity issues have re-emerged as an important concern – particularly as medical costs of the household (of which hospital costs is a major component) has risen sharply in recent years (GOI, 2005).<sup>3</sup> There are also studies indicating that the public sector hospitals in the urban areas are becoming more biased towards middle and high income group people in providing costly tests and diagnostics (Gupta and Dasgupta, 2003). Studies have also shown that this section of the population is appropriating a large share of subsidies to the health sector (Mahal, 2000). Such trends have grave implications in states like West Bengal consistently reporting high levels of dependence on government hospitals by the urban population.<sup>4</sup>

## 2. Objective

The public health care system must therefore seek to reorganize itself to ensure the effective delivery of quality health care services to the poor. To ensure the success of such steps, it is necessary to analyse the socio-economic profile of existing patients and the choice of health care service providers by households. This Report analyses the following aspects:

- Socio-religious identity, age, occupation and income profile of patients;
- Place of origin and the referral system; and,
- Epidemiological profile of patients.

The Report is based on a survey of patients in two major health care institutions in the metropolis of Kolkata – R.G. Kar Medical College and Hospital (a traditional public sector institution) and Advanced Medicare Research Institution (an instance of PPI between the State and the Srachi and Enami groups).

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3 “Surveys carried out by NSSO indicate that high cost of hospitalisation is one of the factors leading to indebtedness especially among low and middle-income group population.” (Pant, 1999). See also GOI (2004b)

4 Over 60% of households have sought treatment in public sector institutions, according to the 42nd, 52nd and 60th Rounds of NSSO.

The report is arranged as follows: Section 3 describes the methodological issues and an introduction of the two institutions surveyed (referred to henceforth as RG Kar and AMRI). It is followed by the findings of our survey. We first present the socio-economic profile of patients surveyed in RG Kar and AMRI. The epidemiological profile is discussed with regard to the socio-economic parameters. This is followed by discussions of our findings on the referral system and the cardiac departments. The report concludes by identifying policy issues and areas in which the present work can be further extended.

## 3. Methodological Issues

### 3.1 Background

Kolkata is the largest metropolitan city in the state of West Bengal. According to the 2001 Census it has a population of 45.7 lakhs and a population density of 24,718 persons per sq. km. This puts immense pressure on the basic health care amenities. About 20% of the city's population lives in the slum areas. The state health department is the major provider of the health care facilities in the city. There are 34 government hospitals with bed strength of 13,695.

The data on which this paper is based was obtained from a primary survey of OPD patients and inpatients<sup>5</sup> from two major health care institutions of Calcutta – R.G. Kar Medical College and Hospital, situated in North Kolkata, and Advanced Medicare Research Institute, situated in South Kolkata. RG Kar Medical College and Hospital is a state run hospital with sanctioned bed strength of 1160. AMRI is a private tertiary hospital with 161-bed strength. In 2005, AMRI set up another 190-bed super speciality unit where the cardiac department is located.

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5 In some cases the patient was unable to speak personally – either because (s)he was too ill, or (s)he was too old. In those cases the investigators spoke with the person accompanying the patient. The patients were interviewed in 78.6% cases, followed by relatives (other than parents and spouses) in 12% cases.

**Table 1: Snapshot of RG Kar and AMRI**

Institution	Beds	OPD	Ward	Surgery
RG Kar:2006	1,160	5,33,614	52,520	6,934
AMRI: 2007	351	73,318	57,213	-

### 3.2 Sample Size and Method

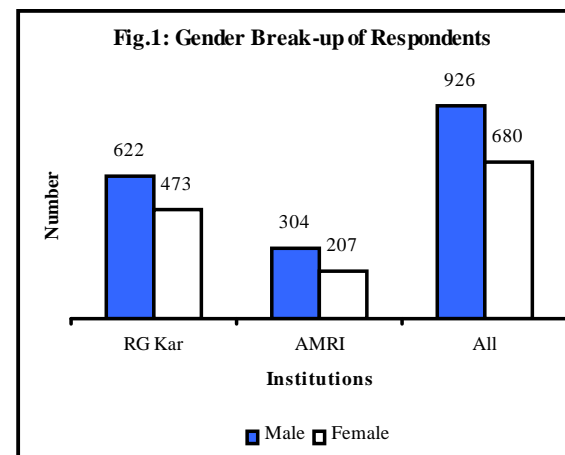
A total of 1,734 persons were interviewed from three Departments – General Medicine, General Surgery and a specialized Department, Cardiac. The Cardiac Department was chosen as (in the public sector) it offers sophisticated life-saving treatment at rates affordable to the poor.

Patients were interviewed in the outdoor departments<sup>6</sup> – either when they were waiting for treatment, or (preferably) after their consultation was over – and in the respective wards. Their files were accessed whenever possible to check the information provided and obtain precise information about their medical condition.

After discarding inconsistent and incomplete questionnaires, and after deleting records for patients aged below 18 years, we had 1,606 valid cases. Out of this total, 1,095 were from RG Kar, of which 622 were females. In AMRI, out of the 511 valid cases, 304 were males. The detailed gender break-up for the two institutions is given in Figure 1.

It should be noted that the gender selection was purposive and based on discussions with relevant authority in the respective institutions. In AMRI, for instance, we had attempted to ensure that 40% of patients were females. However, after ‘cleaning’ the data, a slightly different profile was obtained. The ward-wise break up is given in Appendix.

<sup>6</sup> Getting an OPD ticket costs only Rs.2/- in R G Kar Medical College and Hospital. In AMRI, for outpatient treatment patients have to first register with Rs.50/- and after consultation in OPD they have to pay fees to the respective doctors which vary across the clinical departments.



The ward and department-wise profile of patients is given below. It should be noted that the distribution of patients across wards is not random, but was chosen deliberately in

order to undertake a meaningful analysis of variations across socio-economic characteristics. This has one problem. Given the high number of cardiac patients surveyed by us, the epidemiological profile will be slightly biased in favour of cardiac-related disorders.

**Table 2 : Distribution of Sample across Wards**

Wards	RG Kar	AMRI	Total
Medicine OPD	205	88	293
Medicine Inpatient	208	100	308
Surgery OPD	214	90	304
Surgery Inpatient	182	89	271
Cardiac OPD	186	60	246
Cardiac Inpatient	100	84	184
<b>Total</b>	<b>1095</b>	<b>511</b>	<b>1606</b>

### 4. Socio-Economic Profile of Respondents

As mentioned earlier the Report analyses the socio-religious, occupational and income profile of patients. It is to be noted that among these variables, the most important variable determining health care behaviour is family income.

**Table 3 : Distribution of Patients by Income Class**

Income Classes	RG Kar	AMRI	Total
<Rs.2000	22.7	3.7	16.7
Rs.2001-<Rs.3000	27.2	1.8	19.1
Rs.3001-<Rs.5000	30.5	7.0	23.0
Rs.5001-<Rs.8000	13.7	14.3	13.9
Rs.8001-<Rs.12000	4.6	22.1	10.1
Rs.12001-<Rs.15000	0.5	21.7	7.3
Rs.15001-<Rs.20000	0.3	16.2	5.4
Rs.20001 and above	0.5	13.1	4.5
<b>Total</b>	<b>1095</b>	<b>511</b>	<b>1606</b>

Expectedly, a substantial proportion of patients (over 90%<sup>7</sup>) in RG Kar are in the bottom four income groups (with family income below Rs.8000), while, in AMRI, over 70% of the patients have family income above Rs.8000. In other words, there is a concentration of patients in two ends of the income spectrum with the Rs.5001-8000 class acting as the boundary.<sup>8</sup>

Since the income classes were open-ended, mean income cannot be estimated. Table 4 presents median income. Differences between income levels of wards and OPD for RG Kar are marginal. Further, the median values obtained are not very high. Even keeping in mind the fact that some people who were visibly well-off refused to be interviewed in RG Kar Surgery OPD, there appears little evidence to support the findings that the poor are

7 This proportion is lowest in Cardiac Ward. Even here 84% of patients have family income below Rs.12000.

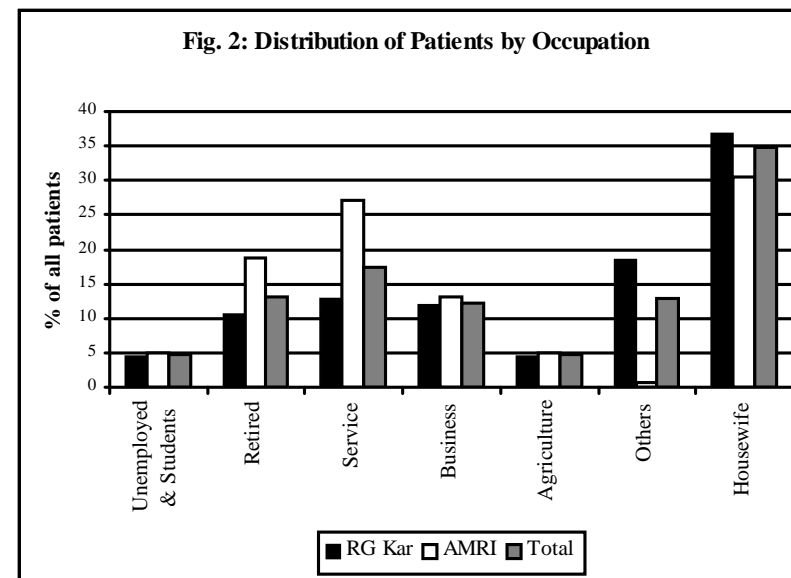
8 Table 3 shows that about 13-14% of the patients in both institutions are in this income group. However, if we incorporate differences in household size, then it can be seen that patients with fewer family members and hence higher *per capita* income levels concentrate in AMRI, while, patients with larger families and lower *per capita* incomes seek treatment in RG Kar.

getting pushed out of the public health facilities observed elsewhere in India (Gupta and Dasgupta, 2003, Mahal, 2005).<sup>9</sup> Rather public health care institutions still remain a vital life support system for the poor.

**Table 4 : Median Income of Patients in Wards (Rs.)**

Departments	RG Kar	AMRI	TOTAL
Medicine OPD	3059	8000	3734
Medicine Ward	2772	11294	3676
Surgery OPD	2688	12774	4119
Surgery Ward	2822	13630	4500
Cardiac OPD	3677	12250	4538
Cardiac Ward	4071	13154	6929

**Fig. 2: Distribution of Patients by Occupation**

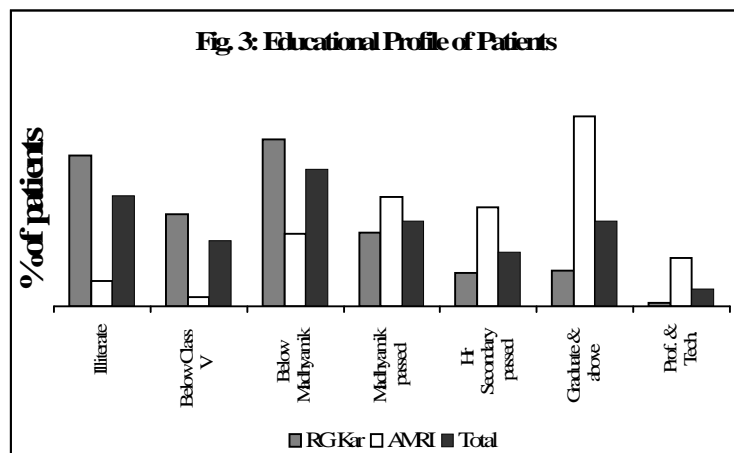


9 Nor does our study indicate that the poorer classes depend more for inpatient facilities as observed in some studies (Dilip and Duggal, 2003).

An analysis of the occupational profile of patients in the institutions surveyed reveals that a higher proportion of retired persons and from different services avails health facilities in AMRI. In RG Kar, on the other hand, the proportion of housewives and (particularly) from the informal sector (labeled as 'Others') is significantly higher compared to AMRI. This again provides indirect support of the dependence of low income classes on public health facilities. The proportion of patients in the other occupational groups does not differ markedly between the two institutions.

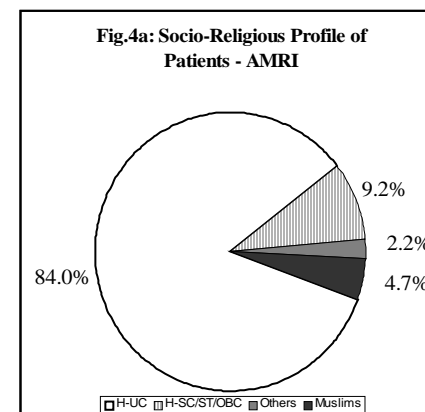
The large proportion of housewives in both institutions is obviously indicative of the gender division of the sample. If we consider the occupational profile for female patients only, we find that the majority of female patients in both RG Kar and AMRI are housewives (83% and 74%, respectively). In RG Kar, 8% of such patients work in the informal sector, while in AMRI 15% is in services.

There are also substantial variations in the educational profile of patients in the two institutions. While a substantial proportion of the patients in RG Kar are illiterate (27%), such patients constitute only 5% of the patients in AMRI. Overall, the educational level of patients in RG Kar is markedly low. Only one out of four patients from RG Kar have passed the Secondary level. In AMRI, 81% of patients have passed Secondary level, while over 40% are graduates or have professional or technical qualifications.

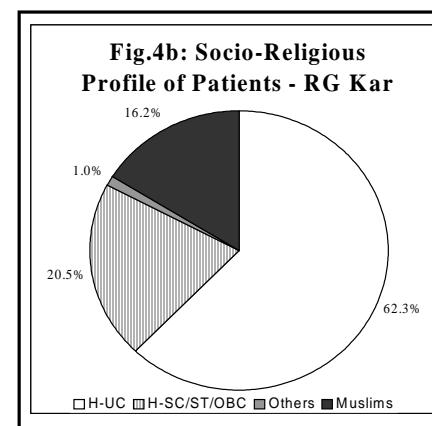


The low level of education among RG Kar is particularly striking. Most of the patients were unable to provide their address or pin codes. This is partly because of poverty leading to low levels of education. In addition, it also indicates absence of regular contacts with the world outside their village.

The analysis of patients by socio-religious identity also reveals some interesting features. In AMRI, there is a clear dominance of Hindu-Upper Caste patients. They account for over 70% of patients in all wards. Their share is particularly high in Departments like Medicine Ward (85%), Surgery OPD (90%), Surgery Ward (89%) and Cardiac Ward (87%). The share of Hindu SCs, STs and OBCs and Muslims are both minor, constituting 9% and 5% of total patients respectively.



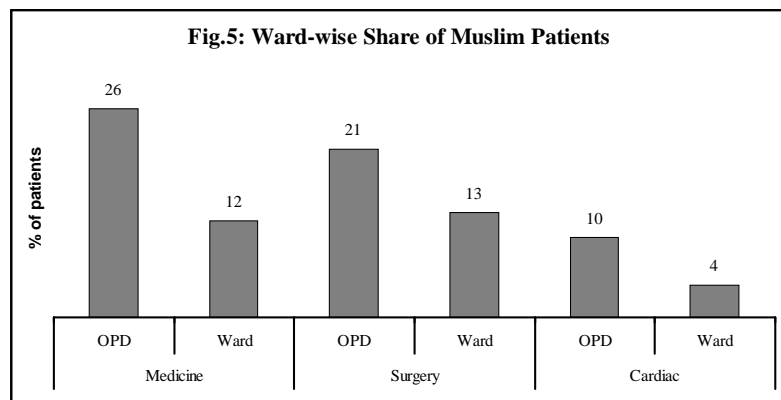
In RG Kar, on the other hand, the distribution of patients by socio-religious affiliation is more equitable. About one out of every five patients belong to the SC, ST and OBC category, while one out of every seven patients is a Muslim. What is interesting is the Department-wise break up of Muslims.



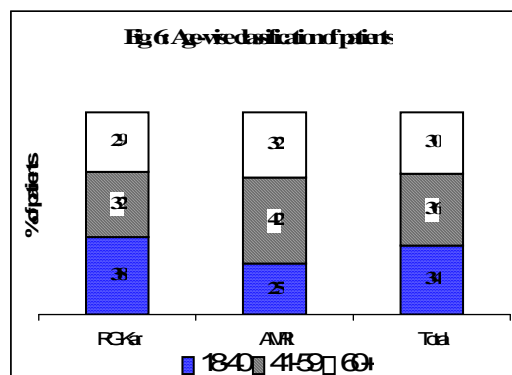
It can be seen (Fig. 5) that the share of Muslims in OPD wards is almost twice that of their share in Ward patients. The immediate explanation that comes

to mind is that Muslim women are subject to restrictions, and not free to reside outside their homes, even for medical purposes, except in emergencies.

However, a gender-wise break-up of patients does not support this explanation – the share of Muslim females is higher than their male counterparts in all wards. Even in absolute terms, the number of Muslim females is higher or about the same as Muslim males.

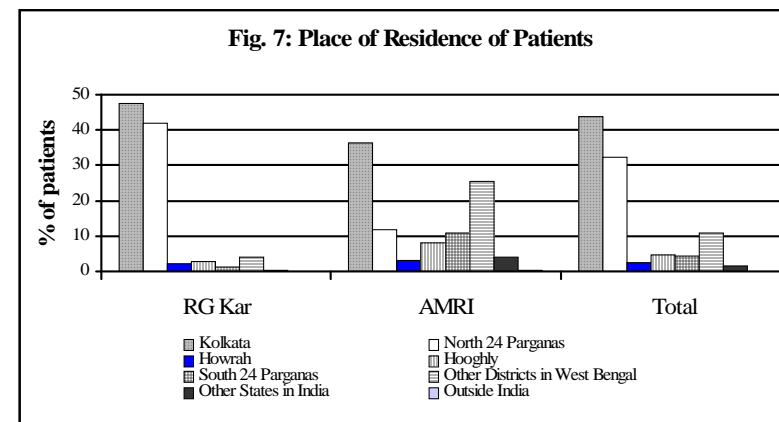


The age-wise classification of patients also reveals differences between AMRI and RG Kar (Fig. 6). The proportion of younger patients (aged between 18-40 years) is higher in RG Kar.<sup>10</sup> In contrast, the proportion of both middle aged patients (aged between 41 to 60 years) and patients aged 60 years and above is marginally higher in AMRI.



aged 60 years and above is marginally higher in AMRI.

<sup>10</sup> Most of the retired patients and housewives come from Kolkata, followed by North 24 Parganas.



Our survey also identified the catchments zone of RG Kar and AMRI. Expectedly, almost half of the patients were from Kolkata in both cases. In RG Kar it was found that about 42% of patients came from North 24 Parganas. This is expected, given the fact that Barasat, the district headquarter of North 24 Parganas, and its adjoining areas have fairly good transport links with RG Kar. Along with Kolkata, the area surrounding Barasat, forms the catchments zone of RG Kar. Almost 89% of all patients availing of health facilities in RG Kar came from these two areas.

In comparison to RG Kar, residential origin of patients at AMRI is more diffuse - patients come not only from surrounding districts of Kolkata (like Howrah, Hooghly, 24 Parganas and Nadia), but also from faraway districts like Bankura, Midnapore, Cooch Bihar, Darjeeling and Jalpaiguri. A small proportion of patients come from outside West Bengal (Bihar and North-Eastern states), and from Bangladesh.

### 5. Disease Profile of the Patients

An important component of the questionnaire was the ailment for which the patient was seeking treatment. These ailments were classified into distinct groups in two steps. Firstly, using the International Classification of Diseases Version 10 available in the WHO website, ailments were classified into 15 groups. This was then again clubbed together based on the nature of the ailment. The final classification used is stated in Table 5.

**Table 5: Classification of Ailments**

Sl.	Classification of Diseases using ICD 10	Re-Classification of Disease Groups
1	IX. Diseases of Circulatory system I00-I99	1. Cardiac ailments
2	I. Infections and parasitic diseases A00-B99	2. Communicable Diseases
3	X. Diseases of Respiratory system J00-J99	
4	XII. Diseases of the Skin and subcutaneous tissue L00-L99	
5	II. Neoplasm C00-D48	
6	IV. Endocrine, nutritional and metabolic diseases and immunity disorders E00-E90	3. Non-Communicable Diseases
7	III. Diseases of Blood and Blood forming organs D50-D89	
8	VI. Diseases of Nervous systems and Sense organs G00-G99	
9	XI. Diseases of Digestive system K00-K93	
10	XIV. Diseases of Genito-Urinary system N00-N99	
11	XIII. Musculoskeletal and Connective disease-related complaint M00-M99	
12	VIII. Ear & Mastoid Related H60-H95	
13	VII. Eye Related H00-H59	
14	XVIII. Symptoms, signs and ill-defined conditions R00-R99	4. Symptoms, signs and ill-defined conditions
15	XIX. Injury, poison, external causes of morbidity S00-Y98	5. Injuries, accidents and other external causes of morbidity

Source: WHO Website (<http://www.who.int/classifications/apps/icd/icd10online/>).

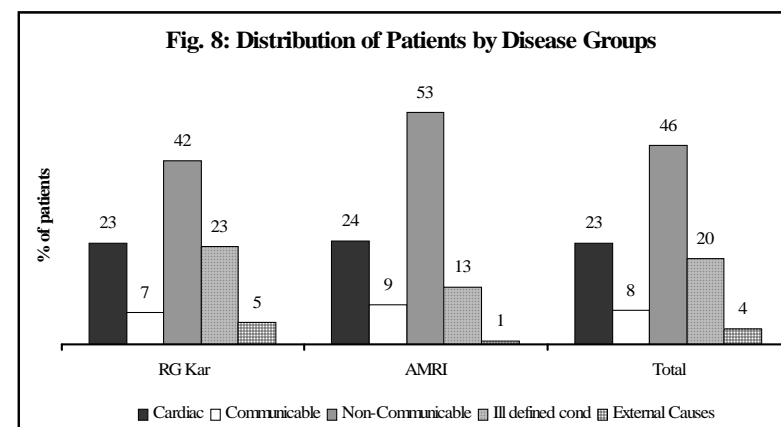
Note: The Roman numbers denote relevant Chapter, while Blocks are indicated after disease groups.

Since the Cardiac Department was studied as an instance of a specialized Department, patients with cardiac problems were clubbed together as a separate group. Other patients were classified into two groups – communicable and non-communicable. Patients whose ailments could not be diagnosed as they reported symptoms only, and those suffering from external causes of mortality (like poisoning, accidents and injuries) formed the remaining two groups.

### 5.a Epidemiological Profile of Patients

Fig. 8 shows that about a fourth of patients surveyed suffer from cardiac problems. This, however, reflects the sample drawn

from patients. With regard to other diseases, the prevalence of communicable diseases is surprisingly low (8% of all patients), even in RG Kar. This may be due to several reasons. Firstly, the selection of Departments (Cardiac, Medicine and Surgery) automatically led to a filtering out of many communicable patients coming to RG Kar. Secondly, patients suffering from communicable diseases may prefer to seek treatment in local level institutions. Thirdly, the survey was administered in February and early March, before the summer had set in. Finally, there is a possibility that many of the 'ill defined conditions' actually correspond to communicable diseases. More than half of the patients in AMRI suffer from non-communicable diseases, while in RG Kar the corresponding figure is 42%. On the other hand, the prevalence of ill defined conditions is relatively high in RG Kar – 23% in RG Kar, compared to 13% in AMRI. This may be due to the fact that Medical Cards and even files of many patients did not contain the diagnosis of the attending doctor, coupled with the low levels of education of patients in RG Kar preventing them from reporting their symptoms accurately to the investigators. All these factors may have jointly operated to keep the proportion of patients suffering from communicable disease low.



Now the epidemiological profile depends upon characteristics



like income, occupation, age and gender. In the following sub-section we analyse the relation between the epidemiological profile and these characteristics.

### 5.b: Variations in Epidemiological Profile across Socio-Economic Groups

Table 6 presents the distribution of patients in each disease category across income groups. It can be seen that most of the patients are from the lower income groups. This is a reflection of the fact that a substantial proportion of patients in RG Kar come from low income families. In line with other studies (like Ghosh and Kulkarni, 2004), a higher proportion of patients suffering from non-communicable diseases are found to have low family income. The proportion of low income patients is surprisingly high for cardiac diseases. This can be explained in terms of the well developed transport links of North 24 Parganas with RG Kar. Coupled with the low costs of checkup and treatment, this allows even poor households to seek treatment for cardiac ailments, leading to high reporting of cardiac problems.

**Table 6: Classification of Patients by Income and Disease Groups (%)**

Income Class	Cardiac	Communicable	Non-Communicable	Ill defined conditions	External Causes
<Rs.2000	10.4	15.7	17.9	20.1	25.9
Rs.2001-<Rs.3000	14.4	23.6	17.2	27.1	20.7
Rs.3001-<Rs.5000	24.9	27.6	20.7	23.2	29.3
Rs.5001-<Rs.8000	18.7	13.4	13.2	10.5	10.3
Rs.8001-<Rs.12000	11.8	5.5	11.7	7.3	5.2
Rs.12001-<Rs.15000	5.9	2.4	10.1	5.1	3.4
Rs.15001-<Rs.20000	7.8	5.5	5.0	3.5	3.4
Rs.20001 and above	6.1	6.3	4.1	3.2	1.7
Total	374	127	733	314	58

In Table 7 disease profile of patients in each income class is examined. The prevalence of non-communicable diseases is high for all income groups, while the prevalence of communicable diseases is low. One reason for the latter may be that in many cases – particularly low income (and lowly educated) – patients may be unable to state their ailment, so that they are classified under Ill Defined Symptoms. The prevalence of cardiac ailments is high among middle and high income groups.

**Table 7 : Classification of Patients by Disease Groups and Income (%)**

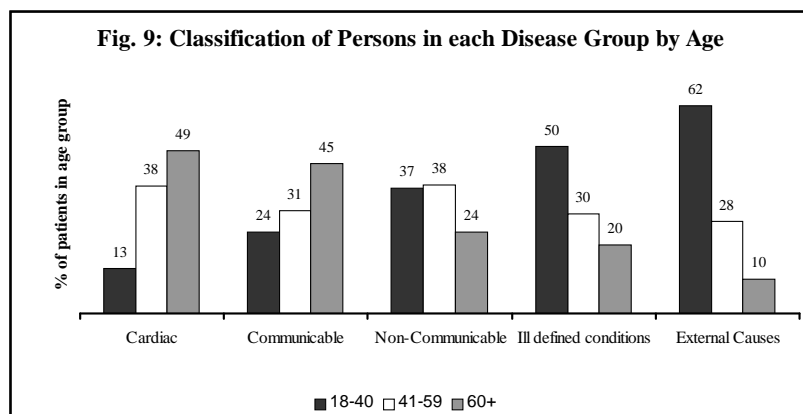
Income Class	Cardiac	Communicable	Non-Communicable	Ill defined conditions	External Causes	Total
<Rs.2000	14.6	7.5	48.9	23.5	5.6	268
Rs.2000-<Rs.3000	17.6	9.8	41	27.7	3.9	307
Rs.3000-<Rs.5000	25.1	9.5	41.1	19.7	4.6	370
Rs.5000-<Rs.8000	31.4	7.6	43.5	14.8	2.7	223
Rs.8000-<Rs.12000	27	4.3	52.8	14.1	1.8	163
Rs.12000-<Rs.15000	18.8	2.6	63.2	13.7	1.7	117
Rs.15000-<Rs.20000	33.7	8.1	43	12.8	2.3	86
Rs.20000 and above	31.9	11.1	41.7	13.9	1.4	72

An analysis of the disease profile of persons in each occupation group reveals that – except in the case of retired persons – the prevalence of non-communicable diseases is highest, followed by cardiac-related ailments (in the case of service and business) or ill-defined symptoms (in the case of students, unemployed, housewives, agricultural workers and others). Retired persons, expectedly, suffer from cardiac problems, although the prevalence of other non-communicable diseases is also high.

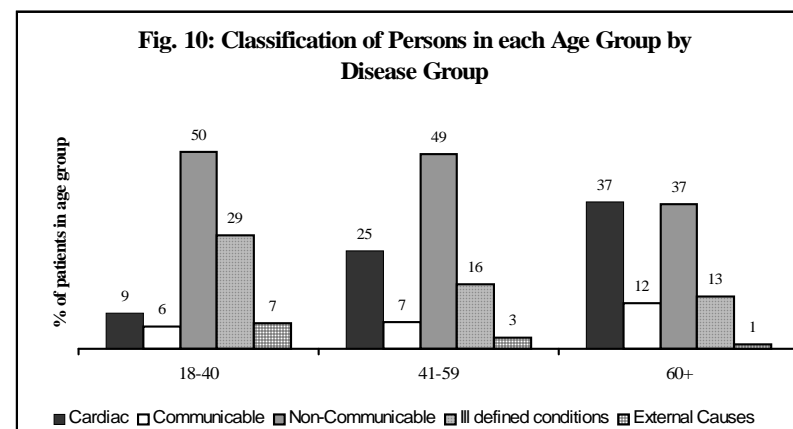
**Table 8 : Classification of Patients in Occupation Groups by Disease Group (%)**

Occupations	Cardiac	Communicable	Non-Communicable	Ill defined conditions	External Causes	Total
<b>Unemployed &amp; Students</b>	9.3	12.0	42.7	29.3	6.7	<b>75</b>
<b>Retired</b>	44.8	10.4	33.5	10.4	0.9	<b>212</b>
<b>Service</b>	25.0	10.4	45.4	15.7	3.6	<b>280</b>
<b>Business</b>	25.9	7.6	41.6	19.8	5.1	<b>197</b>
<b>Agriculture</b>	22.7	8.0	41.3	26.7	1.3	<b>75</b>
<b>Others</b>	22.1	4.8	38.9	28.8	5.3	<b>208</b>
<b>Housewife</b>	15.7	6.4	55.3	19.1	3.4	<b>559</b>

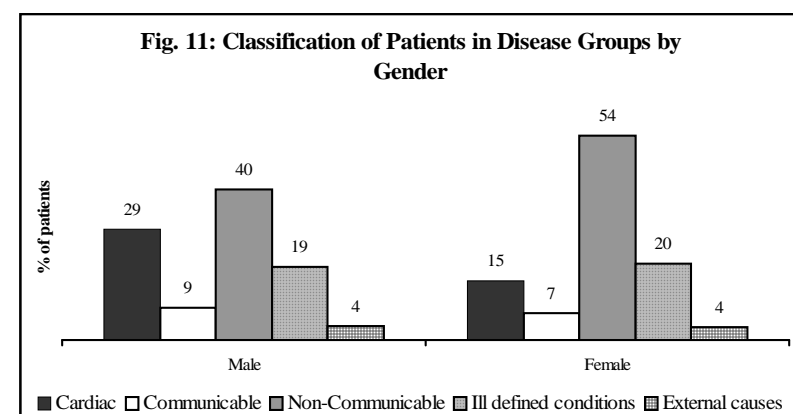
The age profile of patients classified according to disease groups reveals expected trends. The prevalence of cardiac diseases is highest among the elderly, followed by the middle-aged. A similar trend is also observed for communicable diseases. Non-communicable diseases are common among the 18-60 years age group. The prevalence of ill defined conditions and external causes is highest among the young, followed by the middle aged group.



The analysis of persons in different age groups classified by disease groups indicates high prevalence of non-communicable diseases in each group. The prevalence of cardiac-related ailment is also high among middle aged and (particularly) elderly persons. On the other hand, the prevalence of ill-defined conditions is high among the 18-40 years age group.

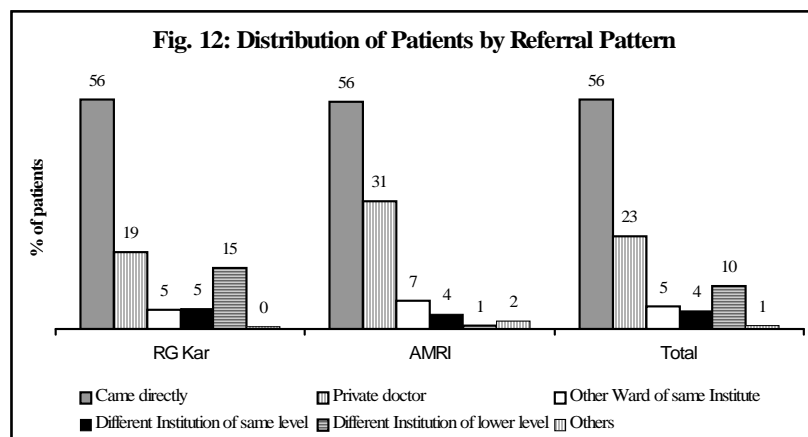


Gender-wise analysis shows similarity in disease profile across male and female patients with two important exceptions. In line with research findings, the prevalence of cardiac disease is lower among female. On the other hand, the prevalence of non-communicable disease is higher among females.



## 6. Referral System

Finally we examined the question as to who referred the patients to AMRI and RG Kar – do they come directly to the hospitals when they decide to avail of treatment, or are they referred by any other institution or practitioner?



It was found that more than half of the patients in both institutions sought treatment directly. A private practitioner referred about one out of every five patients in RG Kar, and about one out of every seven patients in AMRI. While this is not surprising for AMRI, we would expect that a large proportion of patients in RG Kar to be referred by the PHCs, BPHCs or district hospitals. However, such patients constitute only 15% of total patients. Even if we consider only patients outside Kolkata, 50% come directly, private practitioners refer 20% and lower level public health care units refer only 22%.

The referral pattern has also been examined based on the location of patient. In all cases most of the patients had come directly to the institutions, or been referred by private practitioners. Only in the case of North 24 Parganas, was the referral by lower level health care institution important.

It was also observed on inspection of medical papers of surveyed patients that the diagnosis and other noting by the

attending doctors on the medical card or discharge certificate was not adequate for the continuation of appropriate treatment in local institutions. This leads to dependence of patients on what is supposed to be a referral institution.

## 7. Cardiac Department

The analysis of the three Departments taken *together* shows that the poorer sections of the population have not been crowded out of public health care institutions, though their access to PPI remains limited. Now, the Cardiac Department has some features that distinguish it from the other two Departments. Unlike the Medicine and Surgery Departments, the Cardiac Department is a specialized Department, offering life-saving services of a specific kind at an affordable rate. Given this difference in the nature of Departments, it is necessary to analyse the Cardiac Ward separately.

**Table 9 : Gender and Institution-wise break-up of Patients Interviewed**

Institution	Ward/OPD	Male	Female	Total
RG Kar	OPD	121	65	186
	Ward	85	15	100
	<b>Total</b>	<b>206</b>	<b>80</b>	<b>286</b>
AMRI	OPD	36	24	60
	Ward	53	31	84
	<b>Total</b>	<b>89</b>	<b>55</b>	<b>144</b>
Total	OPD	157	89	246
	Ward	138	46	184
	<b>Total</b>	<b>295</b>	<b>135</b>	<b>430</b>

RG Kar had 30 beds for male patients and 6 for female patients. Although the standard practice in government hospitals (including RG Kar) is to attach a card summarizing the patients condition to the bed, this was not observed during our survey. Medical files

were not well maintained – for instance, ECG reports of patients were kept loosely inside the files, without stapling them or attaching them with pins.

**Table 10: Income Profile of Patients in Cardiac Departments (%)**

Income Class (Rs.)	RG Kar		AMRI	
	OPD	Ward	OPD	Ward
0-2000	18.8	15.0	1.7	2.4
2001-3000	19.9	20.0	-	1.2
3001-5000	33.3	28.0	5.0	9.5
5001-8000	23.7	21.0	18.3	8.3
8001-12000	2.7	13.0	23.3	22.6
12001-15000	-	-	20.0	15.5
15001-20000	-	1.0	21.7	21.4
20001 & above	1.6	2.0	10.0	19.0
<b>Total (No.)</b>	<b>186</b>	<b>100</b>	<b>60</b>	<b>84</b>

The difference in income profile of patients between AMRI and RG Kar is striking. While 96% of OPD patients and 84% of Ward patients in RG Kar have monthly family income below Rs.8000, in AMRI, such patients comprise only about 40% of the sample from AMRI Cardiac Department.

Table 4 (in Section 3), also highlights the sharp income difference between patients in these two institutions, and the extent of dependence of the poor on the public sector. While the median income of patients in the Cardiac OPD and OPD at RG Kar are Rs.3677 and Rs.4071, respectively, corresponding figures for AMRI are more than three times these figures. This again clearly underlines the fact that – for all their functional problems – public sector health care institutions remain the lifeline of the poor.

**Table 11: Occupational Profile of Patients in Cardiac Departments (%)**

Occupational Group	RG Kar		AMRI	
	OPD	Ward	OPD	Ward
Unemployed & students	4.3	1.0	-	1.2
Retired	22.0	29.0	20.0	31.0
Service	5.9	24.0	28.3	27.4
Business	11.8	16.0	16.7	6.0
Agriculture	3.2	4.0	5.	4.8
Others	21.5	14.0	1.7	1.2
Housewives	31.2	12.0	28.3	28.6
<b>Total</b>	<b>186</b>	<b>100</b>	<b>60</b>	<b>84</b>

A large proportion of the patients visiting the OPD at RG Kar and AMRI are housewives and the retired. Further, most of such patients in RG Kar are from the Rs.3001-Rs.8000 income bracket, while in AMRI, they belong to the Rs.15, 001–Rs.20, 000 bracket. In RG Kar, the proportion of patients engaged in the informal sector (Others) is also high, while in AMRI, service holders (who may be expected to be relatively affluent) constitute a large section. Analysis of the patients by age groups also presents interesting results.

**Table 12 : Age-wise Profile of Patients in Cardiac Departments (%)**

Institutions	Age Group	OPD	Ward	Total
RG Kar Medical College & Hospita	18-40	21.0	8.0	16.4
	41-59	31.2	33.0	31.8
	60+	47.8	59.0	51.7
	<b>Total</b>	<b>186</b>	<b>100</b>	<b>286</b>
AMRI, Dhakuria	18-40	13.3	10.7	11.8
	41-59	53.3	38.1	44.4
	60+	33.3	51.2	43.8
	<b>Total</b>	<b>60</b>	<b>84</b>	<b>144</b>

As expected, in RG Kar, elderly (60 years and above) patients constitute the largest group, followed by the middle-aged. In AMRI, a similar trend is observed for the Ward. However, the proportion of middle-aged persons is much higher than elderly patients in the OPD department at AMRI. This possibly reflects the increasing prevalence of cardiac ailments amongst the affluent middle-aged section due to their high-pressure work and life style, coupled with greater awareness about cardiac problems.

The analysis of patients by place of residence reveals that in RG Kar, OPD patients mostly come from neighbouring areas, followed by patients from North 24 Parganas. In the case of Ward, however, the trend is reversed – patients from North 24 Parganas outnumber patients from Kolkata. In AMRI, patients from Kolkata constitute the largest group in both Ward and OPD. The number of patients from distant districts like Bankura, Burdwan, Mednipore and even Darjeeling is also relatively high.

About 40% of the patients in RG Kar have come directly; in AMRI, this proportion is slightly higher. Among referred patients, the proportion referred by other Departments in the same institution, and other public sector institutes of same or lower level is quite high in RG Kar. In AMRI, however, the referral system leads to a flow from the private sector to AMRI.

**Table 13 : Classification of Patients in Cardiac Departments by Referral Method**

Institution	Ward	OPD	Inpatient	Total
RG Kar Medical College & Hospital	Came directly (%)	40.3	43.0	41.3
	Private doctor (%)	15.1	17.0	15.7
	Other Ward of same Institute (%)	12.4	-	8.0
	Different Institution of same level (%)	10.8	13.0	11.5
	Different Institution of lower level (%)	21.5	27.0	23.4
	Total	186	100	186

Institution	Ward	OPD	Inpatient	Total
AMRI, Dhakuria	Came directly (%)	55.0	44.0	48.6
	Private doctor (%)	33.3	39.3	36.8
	Other Ward of same Institute (%)	1.7	11.9	7.6
	Different Institution of same level (%)	5.0	3.6	4.2
	Others (%)	5.0	1.2	2.8
	Total	86	68	144

## 8. Conclusion

Our study indicates that the claim made by some researchers (Gupta and Dasgupta, 2000) that the poor are getting pushed out of the public health care system may not be valid in Kolkata. The analysis of the patient profile by income levels in AMRI and RG Kar shows a sharp divide around the Rs.8000 mark – patients with lower income levels concentrate at RG Kar, while patients with higher income levels seek more expensive treatment in high-cost institutions like AMRI. This is true for even specialized Departments like Cardiac. The findings of this survey indicate that the public health care system in West Bengal still remains an important lifeline of the poor in the state.

The dependence of the poor on the public health sector imposes responsibility on the government to facilitate access of low income patients to public hospitals. This is particularly important, given the low levels of education and rural origin of a large section of the patients in government hospitals. Patients seem bewildered and lost in the labyrinthine RG Kar. A large number of patients find it difficult to identify which Department is 'appropriate' for their ailment; many find it difficult to locate the Department and wander from one floor to another. It is therefore necessary to make the public sector more user-friendly.

Another important issue relevant in this context – particularly given the high concentration of patients from districts in RG Kar – is the

referral system. The District Human Development Reports for Maldah and Birbhum (GoWB, 2007, 2008) show a 'top heavy' health care system with significant differences in the bed turn-over rates in BPHCs and at district and sub-divisional hospitals. Our study also finds a large proportion of patients utilizing the developed transport links between North 24 Parganas and Kolkata to access health facilities in RG Kar.<sup>11</sup> As a result, instead of a referral institution, RG Kar has become an institute for diagnosis.

This calls for improving the effectiveness of the referral system in West Bengal. While infrastructural improvements at the block and district level are important steps in this regard, it is also necessary to create trust and confidence in local level institutions. Proper documentation is another important input in this context. On examination of the medical reports, we found that in many cases the diagnosis had not been noted. This means that the patient becomes tied to RG Kar for follow-up treatment as he/she cannot return to local level institutions with a complete record of their symptoms, diagnosis and treatment. This either imposes a monetary and opportunity cost on the patient returning to RG Kar for a follow-up, or leads to deterioration in health (if he does not return to RG Kar).

The concerns relevant to AMRI, on the other hand, are different from that in RG Kar. AMRI is a PPI with the objective of offering "quality treatment at a reasonable cost" through a super-specialty institution to the community at large. The website of AMRI ([www.amrihospital.com](http://www.amrihospital.com)) also states that it is "dedicated to helping the underprivileged in Kolkata". The profile of patients, however, indicates that the benefits of this initiative flow almost exclusively to the middle and high income sections of the community. Although it is formally a joint venture, its nature of functioning and cost structure implies that AMRI resembles the private sector institutions

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11 This is also observed in districts like South 24 Parganas – blocks with good transport links to Kolkata had poor utilized health infrastructure, while inaccessible blocks had higher bed occupancy and turnover rates (GoWB, 2008).

of Kolkata. The webpage of AMRI does state that AMRI has special packages for the poor, but the access of the latter to this institution appears to be restricted to a few. This raises questions as to the effectiveness of PPIs in ensuring equitable access to health care facilities. It is therefore necessary to introduce specific mechanisms to increase access of the poor to the specialized facilities at AMRI, and provide information about these mechanisms to both public and to private practitioners.

Finally, we would underline the preliminary nature of the survey. Given the importance of some of our findings for issues like user charges, institutional form for service delivery, restructuring of the referral system, and so on, it is necessary to delve deeper into the issues raised by the survey. While the findings of our survey indicate that most of the patients in public hospitals are poor, we have to examine this issue from another angle also. What proportion of the poor access public hospitals? What proportion relies on private practitioners, particularly low quality practitioners and quacks? What are the stages in the treatment process of the poor? Do these steps vary across different income classes? These become important areas for future research.

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## APPENDIX A: TABLES

A.1 : Gender Break-up of Respondents, by Ward and Institution (%)

Ward	Gender	Institution		Total
		RG Kar Medical College & Hospital	AMRI, Dhakuria	
Medicine OPD	Male	50.2	59.1	155
	Female	49.8	40.9	138
	Total	205	88	293
Medicine Inpatient	Male	50.5	62.0	54.2
	Female	49.5	38.0	45.8
	Total	208	100	308
Surgery OPD	Male	47.7	56.7	50.3
	Female	52.3	43.3	49.7
	Total	214	90	304
Surgery Inpatient	Male	58.2	56.2	57.6
	Female	41.8	43.8	42.4
	Total	182	89	271
Cardiac OPD	Male	65.1	60.0	63.8
	Female	34.9	40.0	36.2
	Total	186	60	246
Cardiac Inpatient	Male	85.0	63.1	75.0
	Female	15.0	36.9	25.0
	Total	100	84	184
Total	Male	56.8	59.5	57.7
	Female	43.2	40.5	42.3
	Total	1095	511	1606

2 : Income Profile of Respondents, by Ward and Institution (%)

Ward	Family Income Class	Institution		Total
		RG Kar	AMRI	
Medicine OPD	<Rs.2000	15.1	6.8	12.6
	Rs.2001-<Rs.3000	33.7	6.8	25.6
	Rs.3001-<Rs.5000	41.5	10.2	32.1
	Rs.5001-<Rs.8000	7.8	26.1	13.3
	Rs.8001-<Rs.12000	2.0	20.5	7.5
	Rs.12001-<Rs.15000		14.8	4.4
	Rs.15001-<Rs.20000		4.5	1.4
	Rs.20001 and above		10.2	3.1
Medicine Inpatient	<Rs.2000	20.7	5.0	15.6
	Rs.2001-<Rs.3000	38.0	2.0	26.3
	Rs.3001-<Rs.5000	28.8	14.0	24.0
	Rs.5001-<Rs.8000	9.6	15.0	11.4
	Rs.8001-<Rs.12000	2.9	17.0	7.5
	Rs.12001-<Rs.15000		19.0	6.2
	Rs.15001-<Rs.20000		17.0	5.5
	Rs.20001 and above		11.0	3.6
Surgery OPD	<Rs.2000	33.2		23.4
	Rs.2001-<Rs.3000	22.4		15.8
	Rs.3001-<Rs.5000	27.6		19.4
	Rs.5001-<Rs.8000	10.7	7.8	9.9
	Rs.8001-<Rs.12000	5.1	33.3	13.5
	Rs.12001-<Rs.15000	.9	34.4	10.9
	Rs.15001-<Rs.20000		14.4	4.3
	Rs.20001 and above		10.0	3.0



Ward	Family Income Class	Institution		Total
		RG Kar	AMRI	
Surgery Inpatient	<Rs.2000	29.7	5.6	21.8
	Rs.2001-<Rs.3000	24.7		16.6
	Rs.3001-<Rs.5000	22.0	2.2	15.5
	Rs.5001-<Rs.8000	14.3	11.2	13.3
	Rs.8001-<Rs.12000	6.0	16.9	9.6
	Rs.12001-<Rs.15000	2.2	25.8	10.0
	Rs.15001-<Rs.20000	1.1	20.2	7.4
	Rs.20001 and above		18.0	5.9
Cardiac OPD	<Rs.2000	18.8	1.7	14.6
	Rs.2001-<Rs.3000	19.9		15.0
	Rs.3001-<Rs.5000	33.3	5.0	26.4
	Rs.5001-<Rs.8000	23.7	18.3	22.4
	Rs.8001-<Rs.12000	2.7	23.3	7.7
	Rs.12001-<Rs.15000		20.0	4.9
	Rs.15001-<Rs.20000		21.7	5.3
	Rs.20001 and above	1.6	10.0	3.7
Cardiac Inpatient	<Rs.2000	15.0	2.4	9.2
	Rs.2001-<Rs.3000	20.0	1.2	11.4
	Rs.3001-<Rs.5000	28.0	9.5	19.6
	Rs.5001-<Rs.8000	21.0	8.3	15.2
	Rs.8001-<Rs.12000	13.0	22.6	17.4
	Rs.12001-<Rs.15000		15.5	7.1
	Rs.15001-<Rs.20000	1.0	21.4	10.3
	Rs.20001 and above	2.0	19.0	9.8

A 3: Occupational Profile of Respondents, by Ward and Institution (%)

Ward	Occupation Group	Institution		Total	
		RG Kar	AMRI		
Medicine OPD	Unemployed & Students	2.4	8.0	4.1	
	Retired	0.5	20.5	6.5	
	Service	9.3	27.3	14.7	
	Business	15.1	17.0	15.7	
	Agriculture	4.4	5.7	4.8	
	Others	25.4		17.7	
	Housewife	42.9	21.6	36.5	
	Medicine Inpatient	Unemployed & Students	7.7	9.0	8.1
	Retired	10.1	18.0	12.7	
Service	18.3	26.0	20.8		
Business	7.2	11.0	8.4		
Agriculture	5.8	1.0	4.2		
Others	7.7		5.2		
Housewife	43.3	35.0	40.6		
Surgery OPD	Unemployed & Students	5.1	5.6	5.3	
	Retired	3.7	7.8	4.9	
	Service	10.7	23.3	14.5	
	Business	10.7	16.7	12.5	
	Agriculture	5.1	10.0	6.6	
	Others	21.5	1.1	15.5	
	Housewife	43.0	35.6	40.8	

Ward	Occupation Group	Institution		Total
		RG Kar	AMRI	
Surgery Inpatient	Unemployed & Students	4.9	3.4	4.4
	Retired	8.8	16.9	11.4
	Service	14.8	30.3	19.9
	Business	12.6	12.4	12.5
	Agriculture	4.4	3.4	4.1
	Others	19.8	1.1	13.7
	Housewife	34.6	32.6	33.9
Cardiac OPD	Unemployed & Students	4.3		3.3
	Retired	22.0	20.0	21.5
	Service	5.9	28.3	11.4
	Business	11.8	16.7	13.0
	Agriculture	3.2	5.0	3.7
	Others	21.5	1.7	16.7
	Housewife	31.2	28.3	30.5
Cardiac Inpatient	Unemployed & Students	1.0	1.2	1.1
	Retired	29.0	31.0	29.9
	Service	24.0	27.4	25.5
	Business	16.0	6.0	11.4
	Agriculture	4.0	4.8	4.3
	Others	14.0	1.2	8.2
	Housewife	12.0	28.6	19.6

A 4 : Educational Profile of Respondents, by Ward and Institution (%)

Ward	Educational Leave of Patients	Institution		Total
		RG Kar	AMRI	
Medicine OPD	Illiterate	42.0	2.3	30.0
	Below Class V	13.7	2.3	10.2
	Below Madhyamik	26.3	15.9	23.2
	Madhyamik passed	12.2	20.5	14.7
	Hr Secondary passed	3.9	11.4	6.1
	Graduate and above	1.5	40.9	13.3
	Professional degree		6.8	2.0
	Technical/Vocational Qualification	0.5		0.3
	Medicine Inpatient	Illiterate	31.3	6.0
	Below Class V	22.6	2.0	15.9
	Below Madhyamik	27.9	12.0	22.7
	Madhyamik passed	10.6	26.0	15.6
	Hr Secondary passed	4.8	15.0	8.1
	Graduate and above	2.9	28.0	11.0
	Professional degree		7.0	2.3
	Technical/Vocational Qualification		4.0	1.3
Surgery OPD	Illiterate	23.4	6.7	18.4
	Below Class V	14.5		10.2
	Below Madhyamik	34.1	13.3	28.0
	Madhyamik passed	15.0	15.6	15.1
	Hr Secondary passed	7.9	30.0	14.5
	Graduate and above	4.7	30.0	12.2
	Professional degree	0.5	4.4	1.6

Ward	Educational Leave of Patients	Institution		Total
		RG Kar	AMRI	
Surgery Inpatient	Illiterate	25.8	3.4	18.5
	Below Class V	13.7	1.1	9.6
	Below Madhyamik	32.4	10.1	25.1
	Madhyamik passed	15.4	13.5	14.8
	Hr Secondary passed	4.4	16.9	8.5
	Graduate and above	8.2	46.1	20.7
	Professional degree		6.7	2.2
	Technical/Vocational Qualification		2.2	0.7
Cardiac OPD	Illiterate	19.9	3.3	15.9
	Below Class V	20.4	3.3	16.3
	Below Madhyamik	29.0	15.0	25.6
	Madhyamik passed	13.4	20.0	15.0
	Hr Secondary passed	7.5	23.3	11.4
	Graduate and above	9.1	25.0	13.0
	Professional degree	0.5	10.0	2.8
Cardiac Inpatient	Illiterate	13.0	4.8	9.2
	Below Class V	12.0	2.4	7.6
	Below Madhyamik	30.0	13.1	22.3
	Madhyamik passed	14.0	22.6	17.9
	Hr Secondary passed	9.0	11.9	10.3
	Graduate and above	19.0	33.3	25.5
	Professional degree	1.0	11.9	6.0
	Technical/Vocational Qualification	2.0		1.1

A 5 : Socio-Religious Profile of Respondents, by Ward and Institution (%)

Ward	Socio-Religious Identity	Institution		Total
		RG Kar	AMRI	
Medicine OPD	Hindu-UC	54.6	77.3	61.4
	Hindu-SC/ST/OBC	18.5	13.6	17.1
	Muslims	26.3	8.0	20.8
	Other Minorities	0.5	1.1	0.7
Medicine Inpatient	Hindu-UC	69.7	85.0	74.7
	Hindu-SC/ST/OBC	17.3	9.0	14.6
	Hindu-N/S	0.5	2.0	1.0
	Muslims	11.5	2.0	8.4
	Other Minorities	1.0	2.0	1.3
Surgery OPD	Hindu-UC	55.1	90.0	65.5
	Hindu-SC/ST/OBC	23.4	4.4	17.8
	Hindu-N/S	0.9		0.7
	Muslims	20.6	3.3	15.5
	Other Minorities		2.2	0.7
Surgery Inpatient	Hindu-UC	56.6	88.8	67.2
	Hindu-SC/ST/OBC	30.2	6.7	22.5
	Hindu-N/S	0.5		0.4
	Muslims	12.6	3.4	9.6
	Other Minorities		1.1	0.4
Cardiac OPD	Hindu-UC	67.2	71.7	68.3
	Hindu-SC/ST/OBC	17.2	15.0	16.7
	Hindu-N/S	1.6		1.2
	Muslims	14.0	10.0	13.0
	Other Minorities		3.3	0.8
Cardiac Inpatient	Hindu-UC	79.0	86.9	82.6
	Hindu-SC/ST/OBC	14.0	8.3	11.4
	Hindu-N/S	1.0		0.5
	Muslims	6.0	3.6	4.9
	Other Minorities		1.2	0.5

A 6: Age-wise Profile of Respondents, by Ward and Institution (%)

Ward	Age Group	Institution		Total
		RG Kar	AMRI	
Medicine OPD	18-40	46.8	35.2	43.3
	41-59	34.6	34.1	34.5
	60+	18.5	30.7	22.2
Medicine Inpatient	18-40	30.3	35.0	31.8
	41-59	32.7	34.0	33.1
	60+	37.0	31.0	35.1
Surgery OPD	18-40	57.0	31.1	49.3
	41-59	33.2	51.1	38.5
	60+	9.8	17.8	12.2
Surgery Inpatient	18-40	50.0	19.1	39.9
	41-59	29.1	48.3	35.4
	60+	20.9	32.6	24.7
Cardiac OPD	18-40	21.0	13.3	19.1
	41-59	31.2	53.3	36.6
	60+	47.8	33.3	44.3
Cardiac Inpatient	18-40	8.0	10.7	9.2
	41-59	33.0	38.1	35.3
	60+	59.0	51.2	55.4

A 7 : Place of Residence of Respondents, by Ward and Institution (%)

Ward	Residence of Patient	Institution		Total
		RG Kar	AMRI	
Medicine OPD	Kolkata	43.4	35.2	41.0
	Howrah	1.5	2.3	1.7
	Hooghly	1.0	8.0	3.1
	North 24 Parganas	50.2	6.8	37.2
	South 24 Parganas	1.5	15.9	5.8
	Other Districts in West Bengal	2.4	25.0	9.2
	Other States in India		5.7	1.7
	Outside India		1.1	0.3
Medicine Inpatient	Kolkata	37.0	45.0	39.6
	Howrah	1.0	3.0	1.6
	Hooghly	1.0	3.0	1.6
	North 24 Parganas	56.7	7.0	40.6
	South 24 Parganas	0.5	14.0	4.9
	Other Districts in West Bengal	3.8	21.0	9.4
	Other States in India		7.0	2.3
	Surgery OPD	Kolkata	50.9	17.8
Howrah	2.8	2.2	2.6	
Hooghly	2.8	14.4	6.3	
North 24 Parganas	35.5	18.9	30.6	
South 24 Parganas	2.3	6.7	3.6	
Other Districts in West Bengal	5.1	38.9	15.1	
Other States in India	0.5	1.1	0.7	

Ward	Residence of Patient	Institution		Total
		RG Kar	AMRI	
Surgery Inpatient	Kolkata	56.0	38.2	50.2
	Howrah	1.6	3.4	2.2
	Hooghly	3.3	9.0	5.2
	North 24 Parganas	33.0	20.2	28.8
	South 24 Parganas	1.1	9.0	3.7
	Other Districts in West Bengal	4.4	16.9	8.5
	Other States in India	0.5	2.2	1.1
	Outside India		1.1	0.4
	Cardiac OPD	Kolkata	58.6	28.3
	Howrah	2.7	1.7	2.4
	Hooghly	3.2	10.0	4.9
	North 24 Parganas	31.7	10.0	26.4
	South 24 Parganas		15.0	3.7
	Other Districts in West Bengal	3.8	28.3	9.8
	Other States in India		6.7	1.6
Cardiac Inpatient	Kolkata	34.0	50.0	41.3
	Howrah	4.0	6.0	4.9
	Hooghly	10.0	6.0	8.2
	North 24 Parganas	43.0	7.1	26.6
	South 24 Parganas	2.0	4.8	3.3
	Other Districts in West Bengal	6.0	23.8	14.1
	Other States in India	1.0	2.4	1.6

A 8 : Referral Pattern, by Ward and Institution (%)

Ward	Referral Process	Institution		Total
		RG Kar	AMRI	
Medicine OPD	Came directly	96.6	72.7	89.4
	Private doctor	1.0	13.6	4.8
	Other Ward of same Institute	0.5	9.1	3.1
	Different Institution of same level	0.5	3.4	1.4
	Different Institution of lower level	1.0		0.7
	Others	0.5	1.1	0.7
	Medicine Inpatient	Came directly	39.4	45.0
Private doctor		37.5	32.0	35.7
Other Ward of same Institute			13.0	4.2
Different Institution of same level			5.0	1.6
Different Institution of lower level		22.6	3.0	16.2
	Others	0.5	2.0	1.0
Surgery OPD	Came directly	64.0	66.7	64.8
	Private doctor	15.0	30.0	19.4
	Other Ward of same Institute	4.7	2.2	3.9
	Different Institution of same level	5.1	1.1	3.9
	Different Institution of lower level	10.3		7.2
	Others	0.9		0.7
Surgery Inpatient	Came directly	44.5	50.6	46.5
	Private doctor	26.9	39.3	31.0
	Other Ward of same Institute	9.3	2.2	7.0
	Different Institution of same level	4.4	3.4	4.1
	Different Institution of lower level	14.3	1.1	10.0
	Others	0.5	3.4	1.5

Ward	Referral Process	Institution		Total
		RG Kar	AMRI	
Cardiac OPD	Came directly	40.3	55.0	43.9
	Private doctor	15.1	33.3	19.5
	Other Ward of same Institute	12.4	1.7	9.8
	Different Institution of same level	10.8	5.0	9.3
	Different Institution of lower level	21.5		16.3
	Others		5.0	1.2
Cardiac Inpatient	Came directly	43.0	44.0	43.5
	Private doctor	17.0	39.3	27.2
	Other Ward of same Institute		11.9	5.4
	Different Institution of same level	13.0	3.6	8.7
	Different Institution of lower level	27.0		14.7
	Others		1.2	0.5

## APPENDIX B : QUESTIONNAIRE

Respondent Code :

### I. Institution

1. [a] Institution :  [b] Ward :

### II. Personal Information of Patient

2. Name of Patient: \_\_\_\_\_

3. Age :

4. Gender: Male 1 / Female 2

5. Religion :

6. Caste :

7. Educational qualification of Patient :

8. Occupation: \_\_\_\_\_ Code

9. Family Size :

10. Monthly Family Income :

< 2000	2000 - <3000	3000- < 5000	5000-8000
1	2	3	4
8000-12000	12000-15000	15000-20000	20000+
5	6	7	8

11. Relation of Respondent to Patient :

### III. Health Seeking Behavior :

12. Type of ailment: \_\_\_\_\_ Code :

13. Who referred you to the Institution?

14. Who suggested that you visit this Institution?

Address: \_\_\_\_\_

District: \_\_\_\_\_ PIN: \_\_\_\_\_

Nearest landmark: \_\_\_\_\_ Location Code:

Telephone: \_\_\_\_\_ Convenient time for follow-up: \_\_\_\_\_

## APPENDIX C: CODES USED IN SURVEY

### Section I: Institution

1a. Institution :	RG Kar	1		
	AMRI	2		
	EEDF	3		
1b. Ward :	Medicine OPD	1	Medicine Inpatient	2
	Surgery OPD	3	Surgery Inpatient	4
	Cardiac OPD	5	Cardiac Inpatient	6

### Section II: Personal Information

#### 5. Religion

Hindu	Islam	Christians	Jains
1	2	3	4
Buddhists	Sikhs	No Religion	Not stated
5	6	7	9

#### 6. Caste

Scheduled Castes	Scheduled Tribes	Other Backward Castes	Others	Not stated
1	2	3	4	9

#### 7. Educational Qualifications:

Illiterate	Below Class V	Below Madhyamik	Madhyamik passed
1	2	3	4
HS passed	Graduate and above	Professional Degree	Technical/Vocational
5	6	7	8

#### 8. Occupation

Occupation	Code	Occupation	Code
Not stated	0	Retired	4
Student	1	Service	5
Housewife	2	Business	6
Unemployed	3	Agriculture	7
		Others	9

#### 11. Relation of Respondent to Patient:

Patient	Parents	Spouse	Relative	Friends/Neighbors	Others
1	2	3	4	5	6

### Section III: Health Seeking Behavior

#### 12. Type of Ailment [WHO, ICD Version 10]

Classification of Diseases	Code
I. Infections and parasitic diseases A00-B99	1
II. Neoplasm C00-D48	2
IV. Endocrine, nutritional and metabolic diseases and immunity disorders E00-E90	3
III. Diseases of Blood and Blood forming organs D50-D89	4
VI. Diseases of Nervous systems and Sense organs G00-G99	5
IX. Diseases of Circulatory system I00-I99	6
X. Diseases of Respiratory system J00-J99	7
XI. Diseases of Digestive system K00-K93	8
XIV. Diseases of Genito-Urinary system N00-N99	9
XIII. Musculoskeletal and Connective disease-related complaint M00-M99	10
XVIII. Symptoms, signs and ill-defined conditions R00-R99	11
XIX-XX. Injury, poison, external causes of morbidity S00-Y98	12
Not classified	13
XII. Diseases of the Skin and subcutaneous tissue L00-L99	14
VIII. Ear & Mastoid Related H60-H95	15
VII. Eye Related H00-H59	16

#### 13. Who referred you to the Institution?

Came directly	Private doctor	Other Ward of same Institution	Different Institution of same level	Different Institution of lower level	Others (specify)
1	2	3	4	5	6

#### 14. Who suggested that you visit this Institution?

Friend/Relative	Immediate Family	Pharmacist/Medical Shop in locality	Referred	Others (specify)	Came directly	Tie Up with office
1	2	3	4	5	6	7

#### Address : Location Code

Kolkata	Howrah	Hooghly	North 24 Parganas
1	2	3	4
South 24 Parganas	Other Districts in West Bengal	Other States in India	Outside India
5	6	7	8