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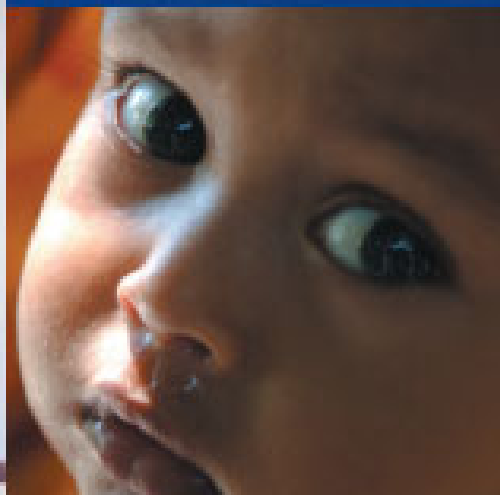
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Comparative Advantages of Public and Private Health Care Providers in Bangladesh



Comparative Advantages of Public and Private Health Care Providers in Bangladesh

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ACRONYMS

ADB	Asian Development Bank
ANC	Antenatal Care
ARI	Acute Respiratory Infection
BBS	Bangladesh Bureau of Statistics
BSPA	Bangladesh Service Provision Assessment Survey
CBC	Complete Blood count
CIDA	Canadian International Development Agency
CIET	Community Information and Epidemiological Technologies
DHS	Demographic and Health Survey
ESP	Essential Services Package
GDP	Gross Domestic Product
GOB	Government of Bangladesh
HEU	Health Economics Unit
HIES	Household Income and Expenditure Survey
HNP	Health, Nutrition and Population
HNPSP	Health Nutrition and Population Sector Programme
HPSO	Health Program Support Office
MOHFW	Ministry of Health and Family Welfare
NGO	Non-Governmental Organization
NHA	National Health Accounts
PSA	Private Sector Assessment
SIDA	Swedish International Development Cooperation Agency
THE	Total Health Expenditure
TOR	Terms Of Reference
UHC	Upazila Health Complex
UHFWC	Union Health and Family Welfare Centre
US	United States
WB	World Bank
WHO	World Health Organization

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Foreword

This study is a joint product of the Ministry of Health and Family Welfare and the World Bank. This effective collaboration on economic sector work between Development Partners and the Government of Bangladesh was carried out in the preparation of the Health, Nutrition and Population Sector Programme and the sector-wide support of development partners to it. .

Bangladesh has made tremendous progress in the social indicators over the past two decades. However, enormous challenges still lie ahead in the areas of equity, quality, governance and accessibility of services to the poor and vulnerable groups, which may impede the achievement of many of the Health, Nutrition and Population related Millennium Development Goals.

We are glad to note that the Government of Bangladesh is committed to addressing these challenges in the Health, Nutrition and Population (HNP) sector, and recognizes fully the importance of harnessing the available capacity of non-public sector providers for improved quality and coverage of services. Diversification of service provision through non-public provider is a key strategic pillar in the government's next program towards the development and implementation of a transparent, competitive and pro-poor HNP service delivery system.

The study outlines issues for national policy formulation on contracting-out certain health services at certain administrative/facility levels. Most significantly, it recommends that contracting-out should be adopted only when it has been shown that society can be made better-off by doing so and when proper legal and institutional arrangements for commissioning HNP services to non-public providers are in place. We congratulate the Government of Bangladesh for having already taken several initiatives in this area. We believe that this will bring about increased quality access of HNP services to the poor in Bangladesh and substantial returns in the fight against poverty.

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Executive Summary

1. To improve efficiency in the use of public funds and to expand coverage of health services, the governments of many developing countries have implemented or are considering policies of contracting-out health services to the private sector. The Government of Bangladesh and the World Bank have undertaken this study to gather information on the comparative advantages of public and private for-profit and not-for-profit health providers/facilities. Study results will help the government determine if it could efficiently expand coverage of quality health services around the country through public contracting of private (both non-profit and for-profit) providers.

2. The dimensions of performance covered in this study are: quality (technical and perceived), price, accessibility, cost and value (value integrates the other dimensions of performance into a single concept). The primary source of information consists of a survey with a sample of 50 facilities, which include public, private and NGO facilities at the upazila level, and public and private facilities at the district and national levels. In each facility, quality, price, accessibility and cost were collected from three sources: interviews with facility personnel, exit polls, and direct observations of six selected services.

3. This study highlights many important findings and recommendations, which are interesting for both facility management as well as sector-wide decision making:

- Public providers rank low in terms of diagnostic explanation given to patients, courtesy of their staff, cleanliness of their facilities, capacity building and the availability of certain medical inputs. Public facilities may seek improvements in these areas, in an attempt to shorten the current gap with private providers, especially NGOs.
- At the upazila Health Complexes, maintenance of the facilities and the use of medical treatment protocols are lower than in private and higher level facilities. Further investigations should be made to find out the causes for such low maintenance and lack of protocols.
- In general, technical quality of services is better in higher level facilities. However, NGOs show the best scores at the upazila level.
- Perceived quality indicators fare better in the private facilities than in the public ones, particularly since private providers seek to attract a larger clientele by improving their perceived quality.
- Users' preference for private facilities may be attributed mostly to the higher level of quality of their services. Accessibility may not be such an important determinant.
- Users' perceived value show that: (1) public facilities tend to deliver services of lower quality than private facilities, but at a much lower price; and (2) NGO facilities show some of the best performances.

- Building and labor costs are higher in public facilities, but drug and exam costs are more in private ones. This might explain the quality differences, since the higher building and labor costs found in public facilities do not seem to lead to more adequate physical space or staff capability, but rather appears to relate more to the underutilization of physical and human resources. On the contrary, higher drug and exam costs could account for quality improvements. However, eventual inefficiencies in building and labor inputs in the public sector affects only marginally the total unit costs, since exams and drugs account for the largest share of these costs.

4. The study concludes that there are good prospects for contracting-out certain services at specific administrative/facility levels. At the upazila level NGO facilities yield the best value indicators, as well as the best in terms of accessibility from the patients' perspective. Thus, in principle government could purchase from NGOs, such as those included in this research, for preventive, promotional, or simple curative services, at low additional cost and with large quality improvements compared to public provision.

5. At the national level, private facilities present better quality than public facilities for all six services studied, offering the prospect for possible contracting-out arrangements. However, government would have to negotiate volume discounts with private providers to get them to lower their prices to levels that are more in line with current public sector delivery costs.

6. Finally, this study identifies the need for the GOB to undertake certain initiatives in the following areas:

- Guaranteeing the quality of service delivery in the public sector, reducing the gap in medical treatment protocols, improving cleanliness, etc.
- Guaranteeing the structural quality of public health facilities, improving their maintenance status and infrastructure.
- Implementing a quality control system for both the public and private sector health providers/facilities.
- Implementing a certification system for private and NGO health facilities.
- Work closely with NGOs to better understand the factors leading to their good performance.
- Assess the costs (administrative, etc.) involved in any eventual contracting-out initiative considered.

Introduction

I. Background

1. The GOB is currently evaluating the comparative advantages of public and private providers in the provision of certain health services to the population. This option has become especially relevant since the GOB has decided to prioritize its scarce resources with the construction and delivery of an Essential Services Package (ESP). As shown elsewhere, private participation in health services provision may be an efficient option for certain services and under certain circumstances (Preker and Harding, 2004). The theoretical basis supporting this policy is that since private providers are not subsidized and have to depend on either income from clients or public financing, they are more motivated than public hospitals to provide quality services to patients to meet their needs effectively and efficiently.

2. Currently, the GOB is concerned about high prices in the private sector, its potential impact on access to health services for the poorest, the potentially large profit margins of private health care providers, and the quality of privately provided health services. For example, a study by the Health Economic Unit of the Ministry of Health and Family Welfare (MOHFW) found that private sector health care prices in Bangladesh have been growing well above the inflation rate. The PSA report (2003) found that part of the private health care sector is unregulated, and the NGO Contracting Evaluation for the HNP sector (2005) shows some advantages and deficiencies in the technical quality of the services rendered. However, existing comparative evidence between the public and private sector is scattered and non-conclusive and the GOB clearly needs more information on the relative performance and comparative advantages of public and private providers to decide on the desirability of contracting out health services included in the ESP.

II. Study Goal

3. In order to increase efficiency in the use of public funds, the GOB is presently exploring alternatives with regard to which health services it should purchase from the private sector, including for-profit and not-for-profit entities, and which services it should provide directly. Taking into account that different health care providers are already specializing in different fields and may possibly have cost-advantages with regards to certain services, this study aims to provide new evidence on the comparative advantages of public or private providers for a selected set of health interventions in order to facilitate future decisions on contracting private providers for the delivery of HNP services.

III. Study Objectives

4. In order to decide upon the convenience of different options of a public-private sector mix in the provision of health care guaranteed by the GOB to its population, the specific objectives of this study are focused on generating new information regarding the following five crucial dimensions characterizing the performance of health care providers in both the private and the public sector:

1. Calculate the relative cost of providing health services in the public and private-for-profit and not-for-profit sector.
2. Determine the relative price that patients pay for health services and for other access related cost items (transport, opportunity cost, etc.).
3. Evaluate the relative quality of health services delivered on the basis of variables that characterize quality in process and outcome.
4. Assess the physical accessibility of health care providers, taking into account distance to the residence, transport time and costs, etc.
5. Establish the value that patients attribute to the health services received.

Chapter 1. Public-Private Partnership in the HNP Sector

This chapter is divided in three major sections. The first section reviews the status of the public and private mix in the Bangladeshi health system with a focus on financing, expenditures and utilization of HNP services. This will highlight the existing relationship between the government and the private providers. The second section includes a review of the international experiences involving private provision in the public health system. The third section provides empirical evidence on relative performance (cost, quality, equity, access and price) of the private not-for-profit and for-profit sectors in comparison with the public sector in the delivery of health care services.

I. The Public - private Mix in the Bangladeshi Health System.

1.1 The health system in Bangladesh is composed of a wide range of public and private health care providers. Table 1 provides an estimate of public and private health sector capacity. It indicates that the public and private sector have similar inpatient facilities. However, the average size of private facilities is one-fifth that of public hospitals.

Table 1. Estimated Number of Government and Private Health Facilities in 1997

	Government	Private		
		Total	Registered	Unregistered
Hospitals	645	158	126	32
Hospital Beds	29,106	6,213	--	--
Nursing Homes	0	455	314	140
Nursing Home Beds	--	5,158	--	--
Total Inpatient Facilities	645	613	440	172
Laboratories	NA	1,042	582	172

Source: PSA 2003 on the basis of BBS, 1998

1.2 The location and service mix offered by public and private providers varies by the level of urbanization. The tertiary and advanced services are offered by providers, both public and private, in the major metropolitan areas. The secondary level services are offered at the district headquarter level. Finally, the first level is offered at the administrative levels of *upazilas*. There are generally no inpatient and specialized services below the *upazila* level. A large majority of the services at the village level are offered by private individuals, trained and untrained health practitioners and pharmacists.

1.3 The public health system is subdivided into four different levels according to their capacity of resolution and the internal organization. The range of services offered, staffing pattern, furnishing of equipment, etc. is relatively homogeneous at each level: i) Union health and family welfare centers (UHFWC) for primary health care and family planning; ii) *Thana* or *upazila* health complexes (UHC) for primary health care and simple hospitalization cases, iii)

District hospitals for primary and secondary care, and iv) Medical college hospitals mainly for tertiary care. Generally, all public hospitals offer outpatient services.

1.4 Private providers are more diverse in terms of the services offered, training level of the medical staff, legal organizational status, system for medicine use and whether or not the doctors also have public sector employment. Private providers range from NGOs, mainly offering promotional and family planning services, for-profit providers (both very small practices and large modern health facilities) to traditional healers and homeopathic providers as well as licensed pharmacists and unlicensed drug sellers (PSA, 2003).

1.5 The quality of information on the characteristics of public and private facilities is mixed. While there is adequate published information to describe the number and types of public facilities, including the number of beds, less is documented on their functionality. For example, no systematic data is available on the number of staff actually working as against the number of planned posts, or the number of fully functioning equipment. Also due to the rapid growth of private health care practices, a confusing regulatory framework for registration and control of private providers has come into being, and the widespread prevalence of large informal private practice often operating out of homes, pharmacies or small unregistered clinics, comprehensive information on private facilities is neither updated nor very reliable. Many of the private sector facilities, particularly the unregistered doctor's offices, are difficult to count, monitor and even regulate (PSA, 2003). For example, an analysis done in 1998 by the Health Economic Unit (HEU) found that only 27 percent of a sample of 252 private clinics assessed had been registered.

Table 2. Selected Indicators of Health Financing in Bangladesh, 2003

Indicator	Value
Total expenditure on health as percent of GDP	3.2%
Total per capita spending in average exchange rate	US\$ 12
Public health spending as percent of total	44.2%
Public health spending as percent of total government budget	8.7%
External resources as percent of total of public health expenditure	13.3%
Private health spending as percent of total	55.8%
Out-of-pocket expenses as percent of total private spending	93.2%

Source: NHA 2003. WHO, 2001

1.6 Financing: Total health expenditure in Bangladesh represents approximately 3.2 percent of the GDP or US\$ 12 per capita¹. Financing for health care comes mainly from three sources. According to the National Health Accounts (NHA-2, 2003), public health expenditure represents roughly 44 percent of total health expenditure representing 8.7 percent of the total government budget. Donor contributions represent about 13 percent, while the remaining 64 percent is financed with household out-of-pocket payments. Health services delivered in public facilities are theoretically free of charge for all patients.²

¹ National Health Accounts 1999-2001, HEU, Ministry of Health & Family Welfare, 2003

² The government experimented with user fees on a limited scale for a brief period

1.7 In contrast, private for-profit providers obtain their financing almost exclusively from user fees. Not-for-profit providers receive their funds from a mix of sources, including the government (12 percent), donor agencies (78 percent) and NGOs' own sources (10 percent).³

1.8 Expenditure distribution: A striking feature in the composition of health spending in Bangladesh is the large share of drugs in the total out of pocket expenditure. Over 70 percent of the household out-of-pocket expenditure is on medicines and almost 46 percent of total health expenditure (THE) is attributed to drug retail expenditure. The large shares of drugs in the total expenditure suggest a high degree of self-medication and the pre-dominance of pharmacists in the delivery of outpatient services.

1.9 NGOs have a market share in the health sector services of only 3 percent of the overall health service volume but have played a significant role in health promotion services, dissemination of contraceptive use, re-hydration and nutrition programs (WB – Poverty in Bangladesh, 2003).

1.10 Service use: Overall health care consumption in Bangladesh is relatively low when compared to other similar countries.

1.11 While the public sector is used in particular for inpatient services and preventive care, the private sector provides the large majority of outpatient curative care (90 percent of ARI and diarrhea of children is treated in the private sector). NGO activities are concentrated on family planning and immunization services (PSA, 2003).

1.12 As can be seen in Table 3, only 9 percent of the outpatient visits of the poor are delivered in public facilities. This percentage is even lower than the one observed for the non-poor. It is also striking to note that outpatient visits to the pharmacy/drug seller make up for the largest share of outpatient visits for both the poor and the non-poor. As seen earlier, the proportion of health spending of the poor that goes to the private sector is higher than that among the rich.

Table 3. Distribution of Curative Visits by Type of Provider, for the Poor and Non-Poor, 2000

PROVIDER	POOR	NON-POOR
Government facility	9%	12%
Government doctor at private facility	10%	21%
Private formal	24%	24%
Pharmacy / drug seller	44%	33%
Private informal, NGO and others	13%	10%
Total	100 %	100%

Source: HIES 2000

1.13 Private health care practices in the formal and informal sector are generally located closer to the patients (Table 6). This convenience in location has attracted patients from all economic segments to private providers.

³ National Health Accounts 1999-2001, HEU, Ministry of Health & Family Welfare, 2003

1.14 It is important to note that even the secondary and tertiary public hospitals attend large numbers of ambulatory health care problems. In the case of district hospitals, the average share of outpatient treatment amounted to roughly 90 percent of total patient flow. On the other hand, the district level private clinics were concentrating their activities on inpatient care (IEPSD, 2002).

1.15 Relation between government and private providers: Generally speaking, the form and scope of government engagement with the private sector is limited and does not seem to be in accordance with the importance of the latter. This refers not only to the lack of contractual relationships in order to harness the private sector for public policy goals, but also to the insufficient regulation of private sector providers, in particular of the less formal and less organized ones, in the context where these are springing up increasingly around the country.

1.16 According to the PSA (2003), many policy makers, in particular those at the national level have misperceptions regarding the size and role the private sector plays in the provision of health care. Thus many of them believe that the private sector health providers are mainly involved in the provision of tertiary care making important capital investment, and are located in urban areas. On the other hand, there is little competition among the private and public providers, with the former having carved out some complementary service niches without covering the whole space of health demand. Since the coordination between the public sector and private providers is relatively weak, gaps in coverage emerge (PSA, 2003).

1.17 As shown in the preceding paragraphs, the private health sector is important both in size and market share in Bangladesh. Also, the existing evidence on health care utilization patterns clearly indicates that the poor tend to use the private sector more often than the public sector when it comes to outpatient visits even though services at public facilities are supposedly free of charge.

II. Review of International Literature

1.18 It has been argued that the scarcity of public resources requires that governments concentrate on what works best and costs least. The public sector cannot afford the “luxury” of high cost, ineffective care or of inefficient public provision. On these grounds, it has often been argued that the private sector can be more efficient than the public sector in the production of some health services, and that the government could improve the efficiency of public spending in health by taking more advantage of existing private sector resources. An alternative view holds that private providers are often not superior in quality or efficiency to the public sector, and that contracting is a complex undertaking, especially in developing countries with limited institutional capacities (Harding and Preker, 2003; Liu, 2004). On the basis of this discussion, “Make or Buy” health services is a question that many governments are asking themselves when thinking of ways to improve the performance of their health systems. Nonetheless, instead of choosing between the private or the public sector, governments should look for a public-private mix in order to take advantage of the capacities of each sector to deliver more quality services to the least cost.

1.19 This study is focused on the comparative advantages of the public and private sectors, which aims to strength the design of contracting arrangements between the GOB and private providers. Therefore we will briefly review some theoretical considerations on the relative advantages for the public sector to contract the provision of health services with the private sector

rather than providing them directly. The second part presents a brief summary of the available empirical evidence on these issues.

III. Theoretical Considerations for Involving the Private Sector in the Public Health System

1.20 A recent publication by the World Bank, “Private Participation in Health Care” (World Bank, 2003), highlights the widespread acceptance among policy makers and researchers alike that governments should fund a wide range of health services due to market failures and for equity reasons. To achieve this, an increasing number of governments have started purchasing a varying array of health services from the private sector. These different policy options have resulted in the existence of a wide range of combinations of the public-private health provider mix.

1.21 Private participation in the provision of health services is an instrument by which governments can take advantage of private sector resources in the health sector. Most commonly, it refers to any public purchasing of services from private providers, both for profit and non-profit, and encompasses a broad spectrum of services. These include, among others, the training of health providers, the education of communities and households, and the purchase of health services.

1.22 This health service purchasing mechanism has gained in popularity over the past years, both with donor agencies and governments in developing countries, due to “several theoretical advantages it has over direct public sector provision and because of public sector shortcomings”. It is acknowledged that the private sector providers can supply health care services in an efficient manner if regulated adequately by the Government and certainly the private sector can be under a clear regulatory framework be held accountable more easily than public ones, in particular because governments would evaluate non-public providers more objectively. Although concluding evidence of the impact of private provision is still rather limited, different authors have documented improved access, efficiency, quality and equity in health services purchased from the private sector. The potential pitfalls of buying from privates, such as high transaction costs and conflicts of interest between purchasers and providers have not been documented sufficiently (Lui et al, 2004).

1.23 The World Bank (2003) produced a summary of comparative strengths and weaknesses in both the public and private sector (Table 4). For example, the private sector tends to be more present in primary and curative care while the public sector tends to be more active in preventive and public health issues. The private sector is oriented towards the people who are able and willing to pay, whereas the public sector targets services to the poor and certain geographic areas.

1.24 In addition, the public sector is perceived to be more interested in assuring access to health services whereas the private sector is thought to be more flexible in adjusting to changing demand. Giving that, on theoretical grounds, there is no clear superiority of either the private or public sector. Indeed, governments should look for the appropriate public-private mix.

Table 4. Comparative Advantages and Disadvantages of the Public and Private Health Sectors

Issue	Public Sector	Private Sector
Equity and access	<ul style="list-style-type: none"> ○ Targets services for poor and vulnerable populations ○ Attentive to geographic disparities 	<ul style="list-style-type: none"> ○ Individuals who can pay favored; the poor and vulnerable excluded or ignored ○ Services concentrated in population centers
Public health, preventive and curative care	<ul style="list-style-type: none"> ○ Emphasis on preventive and public health services (public goods with large externalities) ○ Extensive system of hospitals and curative care centers often maintained 	<ul style="list-style-type: none"> ○ Little attention to preventive and public health services without special incentives ○ Emphasis on curative care services valued by paying customers (private goods)
Management	<ul style="list-style-type: none"> ○ General dependence on political and legislated direction ○ Difficulty recruiting qualified managers ○ Hierarchical bureaucracy with diffused accountability ○ Commitment to public service compromised by vested personal interests ○ Restrictive range of discretionary authority, less flexibility, less innovation 	<ul style="list-style-type: none"> ○ Greater reliance on information for decision-making and planning ○ Recruitment of managers limited primarily by cost/benefit considerations ○ Smaller and more focused authority structures ○ Greater synergy between business and personal interests ○ Broader range of discretionary authority, greater flexibility, more innovation
Customer orientation	<ul style="list-style-type: none"> ○ Heterogeneous constituency with wide range of expectations ○ Limited attention to customer convenience and comfort ○ Indirect accountability for customer satisfaction 	<ul style="list-style-type: none"> ○ Focuses on relatively narrow range of customer needs and wants ○ More attentive to customer convenience and comfort ○ More direct accountability for customer satisfaction ○ May exclude poorest and sickest
Flexibility	<ul style="list-style-type: none"> ○ Extensive infrastructure of owned facilities ○ Restraint of civil service system ○ Slow to respond to changing market conditions because of political and budgetary commitments to ongoing programs 	<ul style="list-style-type: none"> ○ Adaptable access to infrastructure through rentals and leasing ○ Flexible employment and pay practices ○ Quicker response to changing market conditions
Financing	<ul style="list-style-type: none"> ○ Access to tax revenues ○ Weak incentives to be cost from sales or contracts conscious or cost efficient ○ Programs financed primarily through historic budgetary allocations ○ Limited access to private capital or donations 	<ul style="list-style-type: none"> ○ Dependent on revenue flows ○ Attentive to cost and price ○ Needed but unprofitable services possibly curtailed or discontinued ○ Resources assigned to profit centers ○ Sensitive to cross-subsidization and cost shifting ○ Access to capital markets or donations
Competition	<ul style="list-style-type: none"> ○ Possible monopoly on selected services reinforced by regulation and subsidization 	<ul style="list-style-type: none"> ○ Subject to competitive pressures from public and private providers ○ When entering the market, interested in increasing contestability and, once successful, interested in decreasing contestability (to restrain competitors)

Source: Harding and Preker (2003), The World Bank.

IV. Empirical Evidence on Relative Performance of the Public and the Private Sector in Delivering Health Care Services

1.25 The empirical evidence on the impact of contracting the provision of health services with the private sector in terms of efficiency gains, access and equity is limited and, inconclusive, especially in the developing world. A review by Mills and Bloomberg (1998) points out that the literature has concentrated more on the promotion of contracting policies than on evaluating their results first. Despite the existence of successful experiences in contracting, particularly in terms of improvements in access to health care, Mills and Bloomberg note that valid criticisms persist on the possible impacts of such policies, for example in terms of health system equity.

1.26 Against this background and in order to provide an evidence based framework for this study, the authors have gathered empirical experience on the four particular dimensions that will be evaluated in the sample public and private health facilities in Bangladesh: (i) cost (efficiency); (ii) quality; (iii) access; and (iv) price.

1.27 (i) **Costs:** Despite the growing use of private contracting schemes in developing countries, to date there is little evidence on their impact on efficiency (Mills and Bloomberg, 1998). However, some projects proved that the private sector was able to produce health services at lower costs than the public sector – while maintaining its quality – thanks to their capacity of having lower staffing levels and higher productivity (Liu et al 2004). Also, a World Bank analysis by Loevinsohn and Harding (2004) reveals that in four countries (Bangladesh, Cambodia, India and Pakistan) non-governmental entities achieved better health outcomes with similar financial resources.

1.28 Different studies in Africa did not find any systematic differences in costs between public and contracted private providers. There are even some cases where the private contracting of services can result in higher costs to achieve the same outcome, as happened with the Nutrition project in Bangladesh (Loevinsohn and Harding, 2004). In terms of the comparative efficiency of for-profit and not-for-profit private providers, Liu points to the lack of conclusive evidence.

1.29 (ii) **Price:** Price refers to the fee patients have to pay to providers to receive health services. Given that private providers are mainly financed by the amount patients or third party insurers pay for these services whereas public providers rely at least partially on government subsidies, it may be safe to assume that price tends to be lower in public facilities when compared to private facilities. However, price of services are only one of several elements that determine access costs for patients. In some circumstances, higher opportunity and transportation costs in the public sector may outweigh the impact of lower prices.

1.30 In terms of the effect that contracting-out schemes may have on the price of health services in its broad sense (including the patient's fee for service, opportunity and transportation cost), empirical experience seems to be nonexistent, at least as far as accessibility studies or evaluations are concerned.

1.31 (iii) **Quality:** In general terms, there is no unequivocal evidence on whether contracting-out schemes have a positive impact on quality, above all because impact evaluations are hard to

carry out either due to badly defined concepts and indicators of quality or due to the lack of control groups (Liu 2004). A recent study evaluating the relative performance of private and public clinics in rural China found no conclusive evidence on the relative quality of public and private providers and concludes: “While it was found that the quality of services was poor and a large proportion of patient expenditure was due to over-treatment for all village clinics, there was no difference between public and private clinics and there is no evidence that care provided by private clinics is inferior to that of public clinics.” (Liu and Shi, 2000)

1.32 Nevertheless, several studies have shown a positive impact of contracting-out arrangements on waiting time, patient satisfaction, client orientation, and other similar indicators (Liu 2004). It is also important to mention that in contrast to the cost dimension, the great majority of contracting-out projects studied recently by Liu (15 out of 18) stated the improvement of service quality as an explicit project objective. The lessons learned from these projects can be summarized as follows: it is likely that service quality improves if i) quality is well-defined and appropriate measurement indicators are developed, ii) quality indicators capture the required service delivery processes specified in the contracting arrangements, and iii) if the quality indicators are closely tied to the utilization of services, including incentives through payment mechanisms (Liu 2004).

1.33 With regard to Bangladesh, the 1999-2000 Service Provision Assessment Survey (BSPA) suggests that public health facilities are more accessible and offer potentially better quality services. On the other hand, a recent study by Rannan-Eliya (2003) found that there was substantial potential for improving the technical efficiency of public health facilities by increasing capacity in some instances and changing staffing composition and budget allocations within the country.⁴

1.34 (iv) **Access to health care:** Substantial evidence has been found with regards to the positive effects of private contracting on access to priority health services, where access is measured in terms of coverage, availability, and quantity of services provided (Lui, 2004). In addition, Loevinson and Harding (2004) found that in a sample of six projects, private contractors were more effective in increasing access to health services when compared to the public providers.

1.35 These favorable results can be explained in part due to the fact that the focus of many contracting projects has been concentrated precisely on the dimension of access improvements for services such as mother and child care, primary care and curative care. For example, most governments in Central America have chosen to purchase health services from NGOs in order to expand coverage of primary health care in rural areas where public providers are absent or where the location is too remote for some population groups to have effective access to government-provided health care. Additionally, access is also the performance dimension that researchers have most frequently examined in order to assess the impact of private contracting of primary health care services.

⁴ The Bangladesh Health Facility Efficiency Study

1.36 (v) **The almost forgotten dimension– transaction, implementation and monitoring issues:** Perhaps one of the most serious shortcomings of private contracting evaluations is the almost complete non-existence of information on the transaction, management and monitoring costs associated with contracting, as well the lack of acknowledgement that “institutions matter” in order to design reasonable contracts and to ensure that private providers comply with them.

1.37 For instance, while a review of Mills and Bloomberg (1998) shows that the contracting of ancillary services can initially save up to 20-30 percent of the costs, such an assessment of savings in clinical services is more difficult. Limited information on such contracting in the United States points towards the establishment of long-term relations based on trust, an ensuing decline of competitive tenders, and the decreasing importance of prices after the first round of contracting. Initial contracting is competitive, but renegotiation is not. Information from the United Kingdom points in the same direction.

1.38 Since private contracting evaluations generally do not consider procurement, administrative and monitoring costs, there is no clear answer to the question whether these costs are higher or lower than the potential gains arising from reduced production costs in private facilities/providers. Hence it is not clear whether private contracting really saves money for the government. Mills and Bloomberg (1997), for example, found that lower production costs in contracted private hospitals in South Africa did not lead to benefits for the government due to the high transactions costs involved.

V. Empirical Evidence on Relative Performance of the Private Not-for-profit and For-profit Sectors in Delivering Health Care Services

1.39 International evidence⁵ about contracting not-for-profit versus for-profit health care services shows that not-for-profit providers perform better than for-profit ones in terms of quality and costs:

Quality:

- Waiting lists are not reduced when for-profit health care is introduced
- For-profit hospitals can fail to attract health care staff
- Outcomes of a meta-analysis study on the type of health care delivery (for-profit vs. non-profit) and the impact on patient death rates between 1982 and 1995 in the U.S. among 38 million Medicare patients, found that there was a 2% higher likelihood of dying in a for-profit health care setting, a 10% higher likelihood of newborns dying and a 8% increase in death because of dialysis
- Uninsured U.S. citizens are less likely to get preventative health care, less likely to receive health care and more likely to die than Canadians (Fegan)

⁵ “Weighing the Evidence” Health Care Conference presented by Friends of Medicare Calgary, April 30 – May 1, 2005. 350 people attended the conference that focused on the evidence around the world that not-for-profit health care is better than for-profit health care.

- For-profit health care insurance is poor – for instance, the average length of time of a U.S. citizen in any one plan is less than two years in the U.S. (Fegan)
- Doctors invest in the for-profit health care centres they work in. The result is a lower per capita rate of kidney transplant (compared to Canada) instead of dialysis. Dialysis pays more (Fegan)
- In Ontario long term care, there is the greatest portion of for-profit delivery and the lowest standards in Canada. For-profit long term care companies are lobbying against regulations and minimum staffing levels (Cohen)
- On-going BC and Manitoba study finding for-profit long term care admission rates to hospitals are higher than those in non-profits (Cohen)

Cost:

- Non-profit health care costs are not spinning out of control like for-profit costs do – for Canada - 9% GDP in 1990, 1990-92 10% GDP, 2004 10% GDP (Yalnizyan)
- Private health care insurance increases health care costs for individuals, employers and government
- Research in Australia in 2002 showed that \$2.5 billion spent on private health insurance premiums could have bought three to five times more health care in the single-payer (non-profit) system (Maher)
- For-profit health care is expensive as it includes large administration and advertising costs and is costly to collect
- Without investment in long-term care, inefficiencies in acute care – for instance, in Australia, one patient was in an acute-care hospital for 24 years (Maher). In Manitoba one study found 5% of seniors use 78% of acute care services in hospitals (Cohen). Acute care costs four times more than long term care (Cohen). BC is spending more on health care since more long term care patients are going to the emergency department (Cohen)

1.40 Another study contracted by the ADB (2002)⁶ in Cambodia, about feasibility, impact and cost-effectiveness of government contracting with NGOs to deliver health services, found that:

- Contracting increases coverage – contracted-out⁷ districts increased use of public health services to 1.7 contacts per capita per year, and contracted-in⁸ districts to 1.2 contacts, while in the control districts the use of public health services was 0.8 per capita per year
- Contracted-out districts witnessed large increases in immunization rates and the use of reproductive health services.
- Contracting decreases costs – recurrent costs for contracted-in districts were \$26.4 per person per year and \$22.7 for contracted-out districts, and \$26.9 for control districts

⁶ Bhushan, I.; Keller, S.; Schwartz, B. / Asian Development Bank (ADB) , 2002

⁷ ‘Authors defined a “contracting-out’ model”, as one in which contractors had full responsibility for the delivery of specified services in a district, directly employed their staff and had full management control.

⁸ Authors defined a ‘contracting-in’ model, as one in which contractors provided only management support to civil service health staff and costs were covered by the government.

- Contracting increases efficiency – people in contracted-out districts had waiting times 15 per cent smaller than people in control districts. The figure for contracted-in districts was 5 per cent lower than control district.
- Contracting increases equity – the use of health services by the poorest households was found to be greatest in contracted-out districts. This was due to improved access to health services and lower costs in these districts.

1.41 Table 5 summarizes a summary of international experiences and lessons in terms of cost (efficiency), quality, access and price, as well as the main weaknesses for public, private and NGO providers, respectively and the suggested way forward.

Table 5. Comparative Performance of Public - Private Health Providers

Type of service	Identified Strengths					Identified Weaknesses	Suggested Way forward
	Cost (efficiency)	Quality	Equity	Access	Price		
Public				Improvements in coverage, availability and quantity of services (nonetheless private contractors are more effective in increasing access to people)	Lower prices (sometimes outweighed by higher transportation and opportunity costs)	Higher cost , lower quality	Technical efficiency of public providers can be improved by increasing capacity and changing staffing composition and budget allocations
Private	Lower costs / same quality by combining lower staffing levels and higher productivity	Improvements in patients satisfaction and client orientation		Some Improvements in coverage, availability and quantity of services		Inexistence of information on transactions, management and monitoring costs	Generate institutional capacity for negotiating, Implementing and monitoring the contracts
NGO	Decreases in recurrent costs (including out-of-pocket), better health outcomes with similar financial resources, and savings in time for seeking health care	Improvements in waiting time, patients satisfaction and client orientation	Increases equity – the use of health services by poorest households is found to increase due to improved access to health services and lower costs	Improvements in coverage: it has been proved that coverage rates growth more and faster with non-for-profit than in for-profit contracts as well as the availability and quantity of services	Prices are lower in non-for-profit than in for-profit health contracts	Inexistence of information on transactions, management and monitoring costs	1. Verifiable performance indicators, and well-defined performance targets 2. Political support 3. Civil service arrangements to contract human resources at market wage rates.

Source: authors

VI. Previous Evidence on the Relative Performance of the Public and Private Health Sectors in Bangladesh

1.42 The following paragraphs provide a brief summary of existing evidence on the relative performance of the public and the private health sector in Bangladesh:

Cost: A study done in 1998 by the HEU estimated that the average return on capital was around 38 percent suggesting that the private hospitals (252 were studied) generated much larger profit margins than could be earned in other sectors. It concluded that facilities with a bed size of 11-20 beds had the lowest average costs which explained the large number of private health facilities of this size (PSA, 2003).

Price: In general terms, the fees charged at the government health facilities do not represent a large burden for the households, but often informal fees required at the same facilities are comparable or even higher than the official fees (WB – Poverty in Bangladesh, 2003).

Quality: According to the PSA (2003) there is little documented evaluation on the quality of physician care in Bangladesh, both in the public and the private sector. A background study for the PSA found that around 90 percent of private hospitals maintained patient records and nearly 60 percent used standard treatment protocols. The same study also reported that the private clinics were facing problems with regard to the recruitment of qualified and motivated staff and that the electricity supply was the main infrastructure problem.

1.43 According to a study on ESP delivery by public and private hospitals, the unavailability of medicine has been the main reason for dissatisfaction of the patients in the public district hospitals (IEPSD, 2002). This assessment was confirmed in the Service Delivery Survey (2003) in which the lack of and poor quality of medicine was identified as the principal problem in government facilities. The same survey reveals a tendency to increased patient satisfaction with private, particularly NGO providers while the satisfaction with public services had in fact decreased when compared with 1999.

1.44 **Access:** According to one study, the cost of medicines is the most important financial barrier to access. Transportation costs are the second most important reason for people not to seek medical attention (CIET, 2001).

1.45 The distance to the providers is one of the most important factors determining access to health services in Bangladesh according to the CIET baseline survey (CIET, 1999). For example, in the DHS 1999-2000, 79 percent of the women declared that the lack of nearby health facilities presented constraints to their consumption. Distance related access barriers explain in part the relatively low health care consumption rates in Bangladesh.

1.46 Community level data on the average distance to health facilities in rural areas⁹ show that the private for-profit providers are generally closer to the patient's reach than the government or NGO providers (Table 6). Given that medicine shops are the most accessible health facilities, it is

⁹ In urban areas these data are not collected

not surprising that almost half of the health expenditure goes to drug retailers. Rural populations are especially prone to suffer from distance related access barriers as they have to travel around 1.5 times longer than the urban populace to reach a health facility (WB – Poverty in Bangladesh, 2003).

Table 6. Average Distance to Health Facilities in 2000 in Rural Areas

Type of health facility	Mean distance (km)
Government district hospital	30
Thana health complex	10.8
UHFWC	6.4
Private hospital clinic	18.3
Doctor's chamber	6.7
Medicine shop, dispensary	2.6
NGO clinic or health centre	16.8

Source: HIES 2000

1.47 Another well-known and documented issue is the fact that the majority of public doctors dedicate their official working hours to attend patients in their private practices, or even in the public facilities but charging private fees. This behavioral pattern contributes directly to the lack of access of the poor to government services as the doctors are not available for them. In terms of gender equity, the PSA (2003) found disparities in the access to private health care, in part due to cultural barriers. For example, there is only one woman doctor for every four male doctors and within the alternative private practitioners this ratio is even worse at 1:9.

Chapter 2. Methodology and Data

This chapter briefly explains the approach followed to evaluate the main performance dimensions of health care providers in order to assess the comparative advantages of the different kinds of providers in Bangladesh. This section gives the sources of information, presents the instruments used for primary data collection, and describes the data analysis methods.

I. Evaluation Dimensions

2.1 This section presents the approach used for the evaluation of the main dimensions of performance. In accordance with the study goals, the authors investigated the seven following dimensions: perceived quality, technical quality, price, accessibility, cost, subjective performance, and value.

Perceived Quality

2.2 Perceived quality refers to a subjective evaluation of health care quality. In this study, perceived quality is measured from the standpoint of trained enumerators (with guided interviews at health facilities), and from the standpoint of users (with exit polls at health facilities).

2.3 The first measure of perceived quality considers enumerators' assessment of the cleanliness of toilets and the overall maintenance status of the facility. The second measure of perceived quality is user satisfaction, which is a broadly recognized component of health care quality. The measurement took into account the opinion of patients regarding waiting times, cleanliness of the facility, staff attitude, quality of meals and linen, gender issues, etc. In addition, the researchers also inquired about the patients' reasons for seeking care from the facility in question, their willingness to seek care from that facility in the past and in the future, and the like.

Technical Quality

2.4 Technical quality is an objective measure of health care quality. As with perceived quality, technical quality is measured through: (1) guided interviews and the direct observation of selected services carried out by trained enumerators; and (2) the user exit poll.

2.5 Some technical quality indicators measured through the guided interviews include: the information systems and protocols available at the facility, the stock of drug and supplies, the training of the staff, gender policies, etc. Some of the indicators obtained through direct observation are: the extent to which medical staff inquires or records the medical history of the patient, the number of exams and tests done, and the degree to which the medical staff provided adequate indications and diagnostic explanations to the patient.

2.6 Some of the technical quality indicators obtained through the exit polls are: whether the diagnosis was explained to the patient, whether s/he received instructions on the drugs prescribed, whether s/he knew the fee before receiving the service, and whether s/he was shown a price list.

Price

2.7 Price denotes the out-of-pocket payment that patients of a health care facility are required to make as a condition for obtaining the services. Price information for this study was taken from two primary sources, both collected at the health facilities. The first source was the officially reported price by health facility staff. This price information was collected for all services provided by the facility. The second source is the out-of-pocket payments made by patients interviewed in the exit poll, which includes payments for quicker admission, medical consultation, medical supplies, laboratory, imaging exams, drugs, gratitude payments, surgery, and deposits before hospitalization. Out-of-pocket payments are corrected for where patients received an exemption.

Accessibility

2.8 There are several non-financial variables which influence access to health care by individuals. Some of them are characteristics of providers and some are characteristics of consumers. As such, data collection was done in such a way so as to assess both.

2.9 With regard to the accessibility variables linked with the provider, the study looks into the hours of operation of the facility, the availability of emergency services round the clock, the distance to communities, drug shops, and other facilities. Regarding the accessibility variables linked to individuals, the survey inquired about the travel distance, time and cost.

Cost

2.10 In this study, unit costs were assessed for a set of selective services. For each of these services, the direct costs of (1) building, (2) labor, (3) drugs and (4) exams were measured. The first step of the costing methodology consisted of measuring, by direct observation, the intensity of each of these inputs. For example, the building costs of a surgery room depend on the surface of the operating room and the duration of the surgery. Thus, the intensity of this input may be measured in square feet · minute (see Table 7).

Table 7. Examples of Intensity Unit Measures for Each Type of Input

INPUT	INTENSITY UNIT
Building	Square feet · minute
Labor	Doctor · minute
Drugs	Tablets, capsules, milliliters, etc.
Exams	Exams

Source: Authors

The second step in costing consisted in deriving unit costs for each of the inputs. For example, the cost of 1 doctor · minute was derived from their salaries, benefits, etc. (see Table 8).

Table 8. Input Unit Costing

INPUT	INTENSITY UNIT	UNIT COST DERIVED FROM
Building	Square feet· minute	Monthly rental value
Labor	Doctor· minute	Salaries, benefits, time spent on direct medical attention
Drugs	Tablets, capsules, milliliters, etc.	International and Bangladesh prices to suppliers
Exams	Exams	Prices charged to patients ¹⁰

Source: Authors

2.11 The third and final step in obtaining unit costs¹¹ consisted of multiplying the intensity of each input (derived in the first step) with the unit cost of each input (derived in the second step). For example, if a diarrhea patient was administered with 5,000 ml of I.V. saline (the input intensity), and the cost of 1 ml of I.V. saline is 0.07 taka (the input unit cost), the final drug cost would be Taka 350.

Subjective Performance

2.12 The concept of value combines two elements of performance: cost and benefit. The value to the user represents how much benefit in health status for example does s/he receives at a given cost. Since this study does not measure health status, the benefits received by users must be measured in alternative ways.

2.13 The first alternative measure used in this study is that of Subjective Performance. Similar to the concept of perceived quality, perceived value considers the subjective opinions of patients. The indicators used to measure Subjective Performance are: whether the price paid by the patient was higher or lower than expected; whether the quality of the service was as expected; and whether the fee paid was adequate for quality of the service received.

Value

2.14 The second alternative measure of value is derived from the other dimensions. These values refer to three ratios that give different assessment of the price of quality. Therefore, we present three ways to derive value: from the patient's standpoint, from the facility information and from direct observation.

2.15 The value derived from the patient's standpoint considers the technical and perceived quality measured by the exit polls and the patient's out-of-pocket payments (OOP). This value, which can be considered as the "Actual or market price of perceived or technical quality", is the ratio between both dimensions: Quality/OOP.

2.16 The value derived from the facility information considers the technical and perceived quality measured and the fees charged by the facilities. This value reflects the "Official price of perceived or technical quality", is the ratio between both dimensions: Quality / Official Price

¹⁰ Due to the lack of information concerning the real cost of exams, prices charged to patients are used as proxies of the real cost.

¹¹ It should be noted that unit cost is a measure of efficiency and productivity, since it takes into account the intensity of used inputs and their unit cost (for example, the time spend on direct medical attention and the doctor's salary).

2.17 The value derived from direct observation considers the technical quality observed and the unit cost of the service being observed. This value, which can be considered as the “Production cost of technical (or objective) quality”, is the ratio between both dimensions: Objective Quality/ Cost.

2.18 These values measure how much quality a health facility provides for each taka it invests or charges. For example, the “Official price of subjective and technical quality” measures the service quality received, as measured from the exit poll, for each taka spent by the patient, including consultation fees, transport costs, drugs, etc. The “Actual or market price of subjective and technical quality” measures service quality, as measured from the facility questionnaire, for each taka officially charged by the facility (which does not include informal payments at the health facility, or other payments made by the patient outside the health facility). The “Production cost of technical quality” measures service quality, as measured from directly observing each service, for each taka that the observed service cost. These measures can be different for a same service. For instance, when a service is costly and of good quality, but provided free of charge to patients, the “Official price of subjective and technical quality” could be higher than the “Production cost of technical quality”, because the patient receives good quality at a small price, but the cost for the facility is high.

2.19 The values above are important since a key objective of the report is to allow policy makers to make comparisons in terms of “value for money” between direct (public) delivery of services and private services especially to provide information for contracting health services. Therefore, the calculation of relative cost (cost to user and production cost) in comparison to quality among various types of facilities is critical.

II. Sampling of Public, Private-for-profit and Private not-for-profit Facilities

2.20 The primary source of information of this study is a sample of health facilities in four districts in Bangladesh. The sample was designed to provide estimates for the national level at the foremost tertiary hospitals, for the district level at the general acute care hospitals, and for the upazila level at the primary care facilities. A multi-stage sampling design was employed to draw information from each of the representing levels. The sample was drawn in three stages: (i) the two metropolitan divisions- Dhaka and Chittagong were selected by default, as the tertiary care hospitals are mainly found here, (ii) the districts were selected randomly among all districts in Bangladesh excluding the coastal areas due to extreme difficulties in access during the monsoon season during which the survey was carried out; in each of the selected district the Upazila Sadar was selected by default as the district Hospitals delivering secondary care are located there, (iii) within the randomly selected districts two upazilas were chosen based on the availability of private facilities comparable to the government Upazila Health Complex (for details see below).

2.21 Selecting private facilities for the survey posed several problems. The registration requirements for health care facilities are not fully enforced. It was discovered that many of the facilities are either not registered at all, or their sizes, judged by the number of inpatient beds, were under reported. The existing lists of private facilities available from various sources including the MOHFW were found to be either outdated, or incomplete. *Upazila* level information on private facilities was particularly scarce and unreliable. A more comprehensive

and current list was required. Enumerators were dispatched to the four sample districts to compile a list of private facilities at the respective districts by Upazila. A list of private facilities offering inpatient and outpatient services, was developed in consultation with the respective Civil Surgeons and members of his staff. It also listed the number of inpatient beds. The private facilities included in the study were drawn from that list. In the Table 8a we have highlighted the type of facilities for which our sample is representative.

Table 8a. Key Healthcare Providers in Bangladesh

Government of Bangladesh	Private	NGOs
University and Medical College Hospitals	Private Clinics and Hospitals	NGO Hospitals
District Hospitals	Private Practitioners	NGO Clinics
Upazila Health Complex	Traditional Providers	
Union Health and Family Welfare Center	Homeopathic Providers	
Community Clinics	Unqualified providers	
Specialized Hospitals	Drug Retail Outlets	
Other Facilities	Retail Sale of Other Medical Goods	
Health Facilities in other Ministries and Autonomous Corporations		

Source: Bangladesh, National Health Accounts, 1999-2001, p. 25

2.22 As it can be seen, our sample is not representative, for the private traditional providers, homeopathic providers, unqualified providers, drug retail outlets, retail sale of other medical goods.

National level

2.23 Dhaka and Chittagong were chosen to provide a sample of the foremost national level tertiary facilities. A public medical college hospital and two private acute care hospitals, comparable in services offered and complexities, were selected from each of the two primary metropolitan cities (see Table 9).

2.24 In Dhaka, the public hospital was selected to be the Midford College Hospital, while the two private facilities were selected randomly from the 17 private hospitals with more than 50 beds¹². In Chittagong, the public hospital for the sample was selected to be the Chittagong Medical College Hospital, while the two private facilities were chosen randomly from the 21 private clinics that had more than 50 beds.

¹² A threshold of at least 50 beds was determined in order to ensure that the eligible private facilities will offer services that are of a similar complexity than the Division level public hospitals.

Table 9. Sample of Public and Private Providers in Dhaka and Chittagong

Number	District	Name of facility	Number of beds	Property
1	Dhaka	Midford Hospital, Dhaka	676	Public
2	Dhaka	Bangladesh Medical College Hospital, Dhaka	331	Private
3	Dhaka	Central Hospital, Dhaka	122	Private
4	Chittagong	Chittagong Medical College Hospital, Chittagong	1395	Public
5	Chittagong	Bangabandhu Medical College Hospital	332	Private
6	Chittagong	Holy Crescent Hospital	124	Private

Source: authors

District level

2.25 The Districts included in the sample have been selected randomly from all the districts in Bangladesh, excluding those located in the coastal areas due to their extremely difficult location and accessibility problems during the monsoon season (Table 10).

Table 10. Sample Districts Selected Randomly

District	Division	Population
Bogura	Rajshahi	3,015,400
Bagerhat	Khulna	1,516,820
Faridpur	Dhaka	1,742,720
Comilla	Chittagong	4,591,340

Source: authors

2.26 From each of the selected districts, the *Sadar* (District) Hospital was chosen to represent the public secondary hospitals and two private hospitals were chosen to represent private secondary health care facilities. The private hospitals were selected on the basis of their proximity to the *Sadar* Hospital, their size, and the variety of services offered.

Table 11. Sample of Public and Private Providers in the Four Selected Districts

Number	District	Name of facility	Number of Beds	Property
7	Faridpur	Faridpur Sadar Hospital	104	Public
8	Faridpur	Poricharja Hospital	51	Private
9	Faridpur	Arogya Sadar	68	Private
10	Comilla	Comilla Sadar Hospital	100	Public
11	Comilla	Comilla Medical Centre	50	Private
12	Comilla	Mikti Hospital	40	Private
13	Bogra	Mohammad Ali Hospital	250	Public
14	Bogra	Bogra Cristian Hospital	136	Private
15	Bogra	Sharmin Clinic	41	Private
16	Bagerhat	Bagerhat Sadar Hospital	100	Public
17	Bagerhat	Konica Clinic	18	Private
18	Bagerhat	Mukti Clinic	20	Private

Source: authors

Upazila level

2.27 The surveyors prepared a complete and extensive list of private sector health care facilities existing in all the upazilas of the four selected districts. To be a candidate for selection, the upazilas had to have a minimum of two private facilities that provided services similar to the Upazila Health Complex (UHC), including the offer of inpatient and outpatient care. In cases where more than two upazilas in a district had two or more private facilities (e.g. Bogra and Comilla in our sample), the two upazilas having private facilities with closest to 31 beds (the general size of the UHCs) were selected. From each of the selected upazilas, the UHCs were always selected to represent the public facilities, and the two largest private facilities in terms of number of beds were chosen to represent the private health care facilities.

Table 12. Public and Private Health Providers at the Upazila Level

Number	District	Upazila	Name of Facility	Number of Beds	Property
19	Faridpur	Madhukahli	Upazila Health Complex	31	Public
20	Faridpur	Madhukahli	Uposhom Clinic	14	Private
21	Faridpur	Madhukahli	Magura Clinic & Nursing Home	15	Private
22	Faridpur	Boalmari	Upazila Health Complex	31	Public
23	Faridpur	Boalmari	Sheba Surgical Clinic	11	Private
24	Faridpur	Boalmari	Sharna Clinic	10	Private
25	Comilla	Daudkandi	Upazila Health Complex	31	Public
26	Comilla	Daudkandi	Elham Hospital	28	Private
27	Comilla	Daudkandi	Mohon Hospital	16	Private
28	Comilla	Laksham	Upazila Health Complex	31	Public
29	Comilla	Laksham	Laksham General Hospital	18	Private
30	Comilla	Laksham	Laksham Medical Centre	48	Private
31	Bogra	Adamdighi	Upazila Health Complex	31	Public
32	Bogra	Adamdighi	Famous Clinic	16	Private
33	Bogra	Adamdighi	Diti Clinic	21	Private
34	Bogra	Sherpur	Upazila Health Complex	31	Public
35	Bogra	Sherpur	Modern Hospital	15	Private
36	Bogra	Sherpur	Mahboob Diagnostic Centre	15	Private
37	Bagerhat	Chitolmari	Upazila Health Complex	31	Public
38	Bagerhat	Chitolmari	Chitolmari Clinic	05	Private
39	Bagerhat	Chitolmari	Bangabandhu Free Friday Clinic	04	Private
40	Bagerhat	Morolganj	Upazila Health Complex	31	Public
41	Bagerhat	Morolganj	Tanni Clinic	14	Private
42	Bagerhat	Morolganj	Grameen Shayastha Kendra	04	Private

Source: Authors

III. Data Collection Instruments

2.28 In order to gather data for assessing each of the performance dimensions mentioned above, three types of data collection instruments were developed to collect primary data (see Table 13). The same set of instruments was applied to all public and private facilities at all levels. In the case of the NGO facilities, only the Facility Questionnaire, the Outpatient Exit Poll and Outpatient Observation questionnaires were applied, as these did not offer inpatient services.

Table 13. Inventory of Data Collection Instruments

Instrument	Respondent	Sample Size	Dimensions observed						
			Perceived quality	Technical quality	Price	Accessibility	Cost	Perceived value	Derived value
1. Facility survey	Person in charge of the facility	No. of facilities : 50	X	X	X	X			X
2.a Exit poll for outpatients	Outpatient who already received services	No. of outpatients: 1,292	X	X	X	X		X	X
2.b Exit poll for inpatients	Inpatients prone to be discharged	No. of inpatients: 840	X	X	X	X		X	X
3. Direct observation * (6 sub-questionnaires – one for each service selected)	Direct observation (outpatients) Medical records inspection (inpatients)	Direct outpatient observations: 755 Direct inpatient observations: 632		X			X		X

- * a list of the services that were selected in agreement with the MOHFW and the World Bank is presented at the end of this section

Source: Authors

The Facility Survey

2.29 This instrument aimed to characterize the facility and was composed of 6 subsections:

- a) Main facility survey: includes general questions about characteristics of the facility, patient handling process, services provided, financing and fees.
- b) Services utilization section: registers the number of services provided by the facility in the last 12 months for outpatients, inpatients, diagnostic and emergency services.
- c) Staffing section: collects information on the number of employees (medical and non-medical) and their remunerations.
- d) Infrastructure and equipment section: registers the surface of the physical infrastructure of the facility, the type of construction and general conditions. It also collects the list of equipments and vehicles available in the facility.
- e) Drugs and supplies section: gathers information on the stock and consumption of essential drugs and medical supplies.
- f) Recurrent costs section: registers the facility's recurrent expenses on utilities, maintenance, transport, food services and laundry services.

2.30 The facility questionnaire was used to collect information through both interviews with key respondents and review of records at the concerned facilities. The questionnaire was administered on the manager of the facility or to official(s) specifically designated by the manager to provide the required information. A large part of the information for the General Facility Survey was collected through interview with the key facility officials. The other modules were largely completed with information gathered from records at the account, personnel, engineering and statistics departments. Information was also collected through visual observations and physical measurement, for example, recording the numbers and types of major equipments and the size of the buildings, etc.

The Outpatient & Inpatient Exit Polls

2.31 These instruments collected information directly from the facility's users regarding their socio-demographic characteristics, their level of satisfaction with the service received, expenses incurred (both formal and informal payments) and the accessibility of the facility. At least one woman was included per field group in order to ensure that female patients could be interviewed by a female interviewer, considering the Bangladesh cultural context.

2.32 The exit poll questionnaires (both inpatient and outpatient) were applied to patients who had completed treatment at the concerned facilities and were ready to leave. The selected clients were interviewed using the pre-structured exit poll questionnaires. Inpatients completing their treatment protocol and soon to be released from the facilities were interviewed in the waiting rooms and sometimes in their wards/cabin. The outpatients were mostly interviewed outside the facilities and sometimes in the waiting rooms.

Direct Observations

2.33 This instrument covers data collection for six services as defined between the MOHFW and the World Bank. Due to limited time and resources, the selection of inpatient and outpatient treatment was limited to the most meaningful combination of specific health services. The guidelines were developed in order to assess quality and direct cost of the services delivered. These questionnaires were filled out through direct observation of the service provided, in the case of outpatients; and by inspection of the medical records, complemented with interviews of patients and nurses if necessary, in the case of inpatients. The checklist and the normative process of treatment were defined by a group of senior health officials and the surveyors.

2.34 The following issues were taken into account to define the set of services for direct observation:

- Since the Government of Bangladesh has already identified an ESP in order to prioritize the most cost-effective health services for the country, efforts have been made to include a majority of the services from among the ESP. Three components from the ESP that are

delivered at the hospitals that were surveyed, were included: reproductive health, child health care and limited curative care.¹³

- Given that all the public hospitals that were studied at the different administrative levels (UHC, District Hospitals, and Medical College Hospitals at the Division level) have inpatient and outpatient departments, the performance of health services in both of these categories were evaluated.¹⁴

Inpatient:

- i) Non-surgical curative care
- ii) Maternal care
- iii) Major surgery

Outpatient:

- i) Reproductive health
- ii) Child care
- iii) Adult care

- In Bangladesh, the hospitals at all administrative levels examined under this survey, including the large division level Medical College Hospitals, offer a similar set of general services. Lacking a well-functioning referral system, patients often come directly to tertiary hospital without previous consultations. Without any documentation on case-mixes at the three levels of facilities, it was assumed that there are no significant differences in case-mix within the diagnostic groups between the hospitals.

2.35 The definition of these specific services constituted a particular challenge and their selection was much more complex than originally anticipated. However, agreement was reached between the MOHFW and the World Bank to select the following services to be evaluated in detail under the direct observations:

Outpatient care:

2.36 **Antenatal Care** (reproductive care and essential component of the ESP).

2.37 **ARI** (child care - ESP) - Acute respiratory illnesses account for around 7 percent of all patients treated at District Hospitals and below, and it is assumed that this group of disease has a similar prevalence at the Medical College Hospitals. Data reveal that 26 percent of the deaths of children between 0 and 14 years old are caused by respiratory diseases.

2.38 **Hypertension** (adult care – ESP) – this pathology constitutes an ever growing problem in the Bangladeshi society, with a strong tendency towards cardiovascular diseases. This service was also selected as a flag service for the non-communicable diseases.

¹³ The Essential Services Package is mainly delivered through the primary health care system and encompasses five major components: i) reproductive health, ii) child health care, iii) communicable disease control, iv) limited curative care, v) behaviour change communication.

¹⁴ The private hospitals of the sample have been selected among a universe that has similar characteristics, that is those facilities also offer inpatient and outpatient services (see section 0 on the Sample).

Inpatient care:

2.39 **Severe Diarrhea** (Non-surgical curative care – ESP) - Diarrhea Diseases make up for around 16 percent of all patients treated at the District Hospitals and below, and it is assumed that this group of disease has a similar occurrence at the Medical College Hospitals. Also this group of diseases is among the most common in Bangladesh across all ages.

2.40 **Normal (Vaginal) Delivery** (maternal care – ESP)- the institutional delivery rate in Bangladesh is very low by international comparison, around 11 percent, with 7 percent going to public sector facilities and 4 percent going to private sector hospitals. Given the high priority conferred upon the promotion of institutional delivery in the GOB health policy, this service is considered to be crucial for further assessment.

2.41 **Caesarean section** (surgical intervention and maternal care – ESP): Among the institutional deliveries, a disproportionately high percentage of women report problems in deliveries, often resulting in the necessity for caesarean intervention. In addition to this, among the private institutional deliveries the caesarean interventions occur twice as often as in the public facilities. Both arguments suggest that a closer look at costing and quality of this service will provide useful insights.

2.42 Data on the direct medical services received by *outpatients* was collected by observing the treatment protocol of a sample of outpatients at the selected facilities. The field doctor enumerators followed a sample of outpatients from the time of registration through the examinations, diagnostics and treatments, to departure, and record the necessary information on the outpatient services observation instrument. The field doctor observed the procedures and recorded key information without any interference of the patient or the providers.

2.43 Information on direct medical services, drugs and supplies received by *inpatients* were collected primarily from medical records of a sample of patients who had completed treatment and were waiting to be discharged. Pertinent information from medical records was collected by the field enumerators, who were also trained doctors, in the presence of the concerned patients. Some information was also collected through interview of the patients, and in some cases, the attending relatives/friends.

Chapter 3. Assessing the Performance of Public and Private Providers: Quality, Price, Accessibility, Cost and Value

This chapter presents a multidimensional view of performance and discusses each dimension (quality, price, accessibility, cost, and value) relative to each applicable source of information (inpatient exit poll, outpatient exit poll, facility survey, and direct observations). It shows the existence of comparative advantages of the public and private sectors for specific health interventions and scale of services.

I. Multidimensional View of Performance

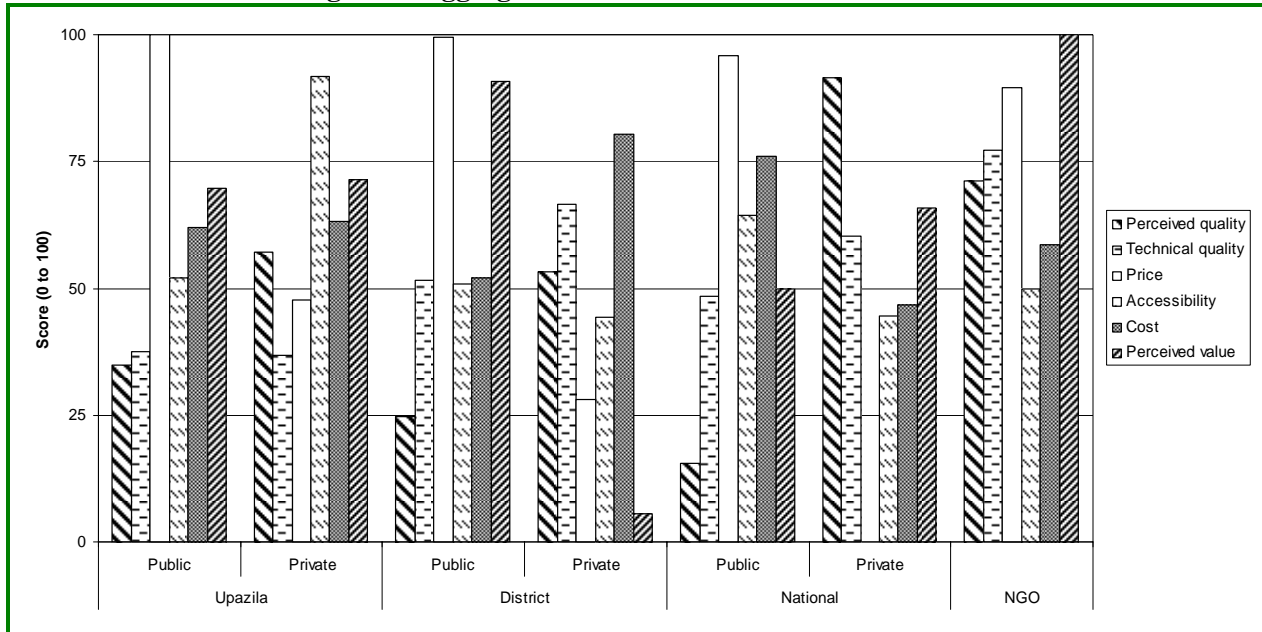
3.1 A first analysis of the results considered an aggregated measure of each of the dimensions of performance. A relative score was constructed for the first six dimensions: perceived quality, technical quality, price, accessibility, cost and value. This score ranged from 0 to 100, where the worst observation received 0 and the best received 100. This means that during the analysis of the scores, comparisons between different levels and types of facilities are only relative to the facilities with the worst and the best performances. To build the score, a set of indicators captured from the facility questionnaires, exit polls and direct observations were integrated into a unique aggregated indicator for each dimension. Because the last dimension, i.e. Value, is a ratio between quality and price/cost, its scores may result in values over 100.

3.2 Figure 1 shows the aggregate performance dimensions scores obtained for the seven analytical domains considered in this study: upazila level public and private facilities, district level public and private facilities, national level public and private facilities, and NGO facilities.

3.3 The first dimension (perceived quality) is the average score between the quality perceived by the trained enumerators and the patients. The results show that perceived quality is consistently best in the private sector, at all levels. NGO facilities also obtain a high score, which is superior to that of private facilities at the same level (upazila). Perceived quality from the facility questionnaire and from the exit polls (applied to patients) also shows the same tendency (see Figure 2 and Figure 3).

3.4 The second dimension (technical quality) is the average score between technical quality as measured through the facility questionnaire, the exit polls and the direct observations. The results show that technical quality increases with the facility level. There is also a tendency for private facilities to show a slightly better score than public facilities. However, NGO facilities, in spite of being similar to the other upazila level facilities in terms of size and services offered, show the best scores in technical quality. A separate analysis of technical quality shows mixed tendencies.

Figure 1. Aggregated Performance Dimension Scores



Source: Authors

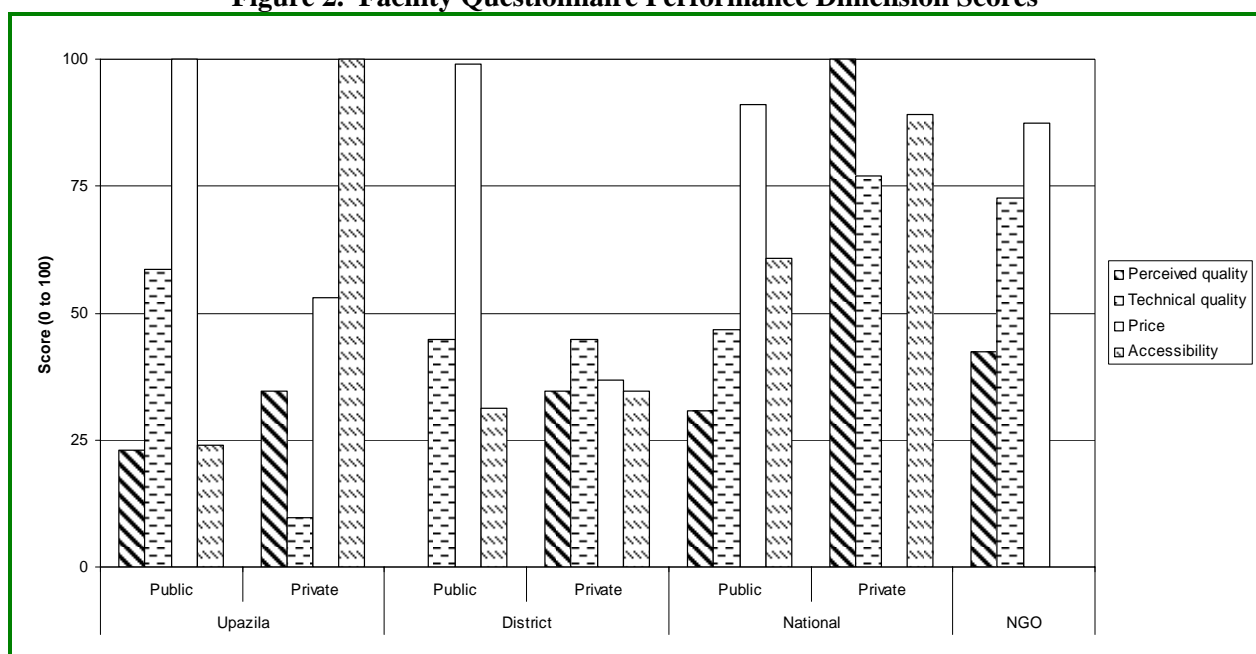
3.5 The scores obtained from the facility questionnaire (which considers aspects such as the availability of information systems, protocols, stock of drugs and supplies, training, and policies for female patient) show that public facilities are more or less homogenous at the different levels, with a technical quality score ranging from 40 to 60. This differs from the results obtained in the private sector, where technical quality scores increase with the facility level, from a low of 10 at the upazila level to a high of 77 at the national level. NGO facilities show a score of 73, almost as high as the private national facilities. The scores obtained from the exit polls (which considers if the patient was explained the diagnostic, received instructions on the drugs prescribed, knew the amount to pay before receiving the service, and was shown price list) show that both public and private facilities are heterogeneous. The score of public facilities increases with the facility level. The private facilities show a similar tendency, although private national facilities present an abnormally low score. However, the most notorious result is obtained by the NGO facilities, which outperform all the rest. The scores obtained from the direct observations (see Figure 4) show a clear tendency of the private facilities to perform better in the higher levels. Except at the district level, the public facilities show relatively low scores. The score obtained by NGO facilities is relatively higher than other upazila level facilities.

3.6 The third dimension (price) is the average score between the price information collected with the facility questionnaire and the out-of-pocket expenses of patients interviewed in the exit polls. The results show that both out-of-pocket expenses and fees charged by the facility are consistently lower in the public sector than in the private ones. Public facility scores are always near 100, meaning they charge (if they do) the lowest fees. Illegal payments collected at the public facility level are usually below the production cost or market price charged by the private facility. Household surveys in Bangladesh show that in public facilities the illegal payments tend

to be higher than in the private sector, however, it may be the case that out-of-pocket and total fees charged by the facility in the private sector are higher than ones in the public sector.

3.7 The fourth dimension (accessibility) is the average between indicators measured with the facility questionnaire and in the exit polls. This composite measure of accessibility show mixed results, as the standpoint of the facilities and the patients have opposing tendencies. On one hand, accessibility indicators measured with the facility questionnaire (Figure 2) shows that at higher levels there is higher accessibility, except for upazila private facilities which report good accessibility. NGOs have the lowest scores. While on the other hand, accessibility from the patient's standpoint (Figure 3) is higher at the lower levels, and NGO have the highest accessibility score.

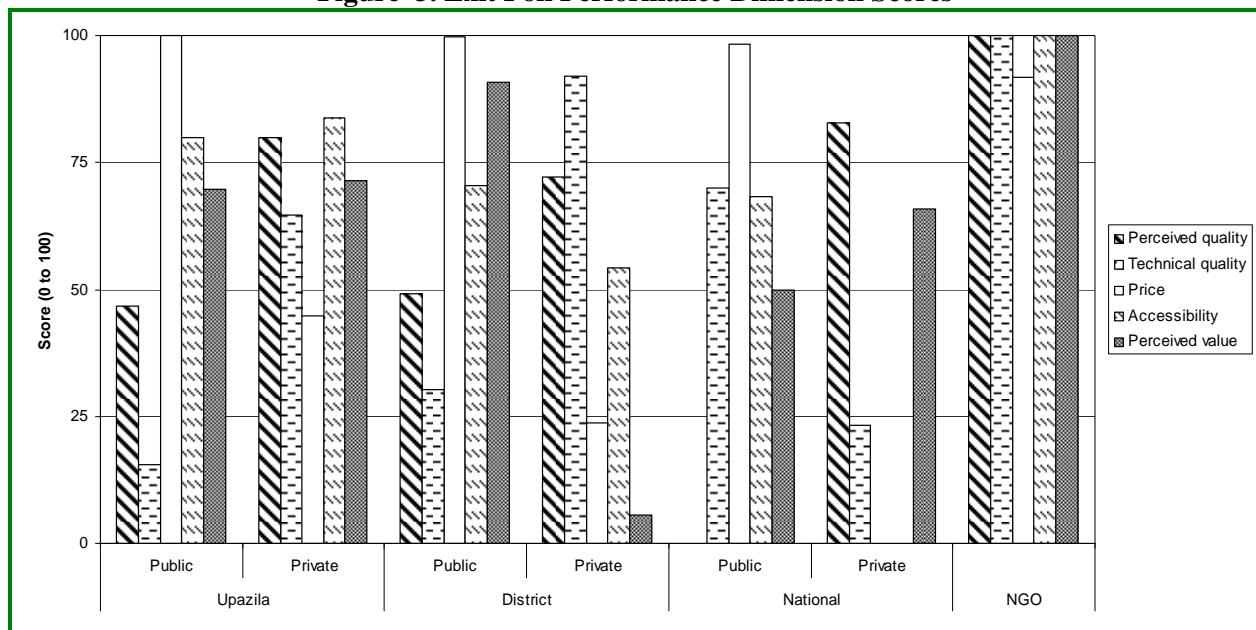
Figure 2. Facility Questionnaire Performance Dimension Scores



Source: Authors

3.8 The fifth dimension (cost) is the average of the cost scores obtained from the direct observation of the six select services (Figure 4). The aggregated cost scores show mixed results. First, upazila level facilities (public, private and NGO) show similar cost scores. Second, private district level and public national level facilities show the highest cost scores, meaning that they evidenced the lowest unit costs in relation to the other type of facilities. Third, public district level and private national level facilities show the lowest scores.

Figure 3. Exit Poll Performance Dimension Scores



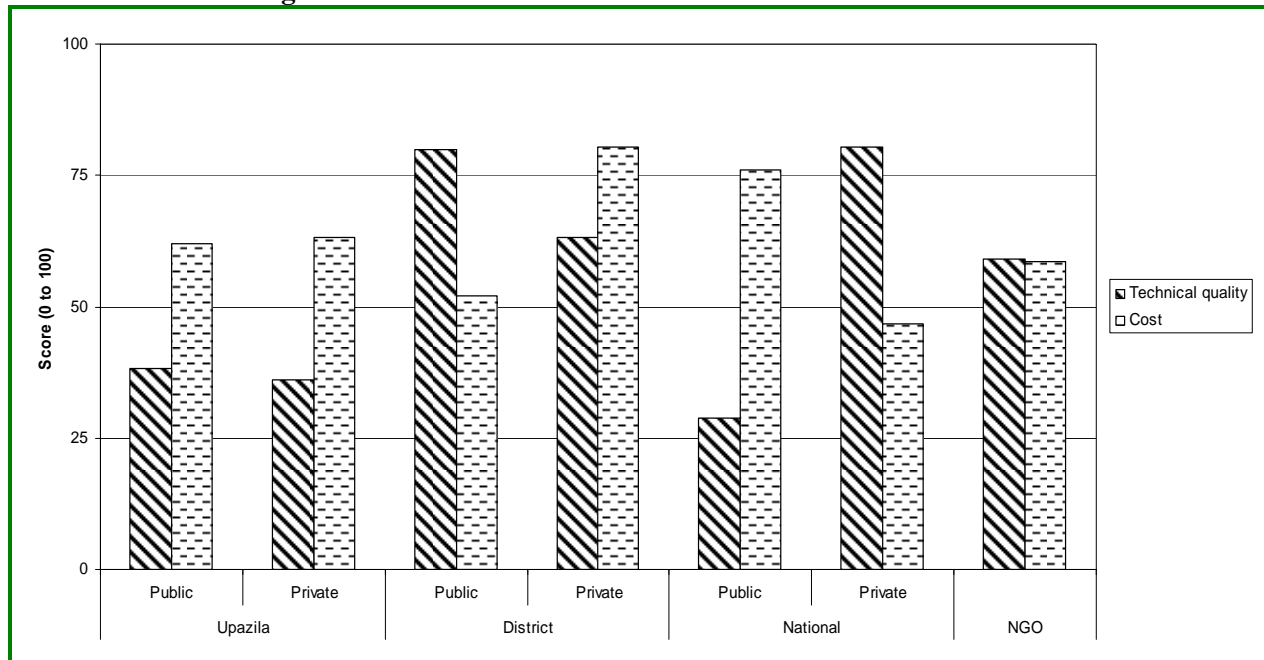
Source: Authors

3.9 The sixth dimension (subjective performance) is measured from the patients' standpoint. Figure 3 shows that the lowest Subjective Performance is that of district level private facilities, and the highest is that of NGO facilities. However, as will be shown later, the absolute differences between the different types of facilities are not very significant, meaning that Subjective Performance is more or less homogeneous throughout all the different surveyed facilities.

3.10 The seventh dimension (value) combines quality with price or cost. There are three alternative measures of derived value. The first shows the relationship between the quality score (the average between technical and perceived) and the price score, as measured through the facility questionnaire (see Table 5).

3.11 Figure 5 shows that private facilities lie on a straight line starting at a high quality and a high price for the national level facilities and ending at a low quality and a moderate price for upazila level facilities. The district level facilities lie in between. This means that, even though quality and price vary considerably between different levels of private facilities, their value ratio (quality/price) is more or less constant.

Figure 4. Direct Observation Performance Dimension Scores

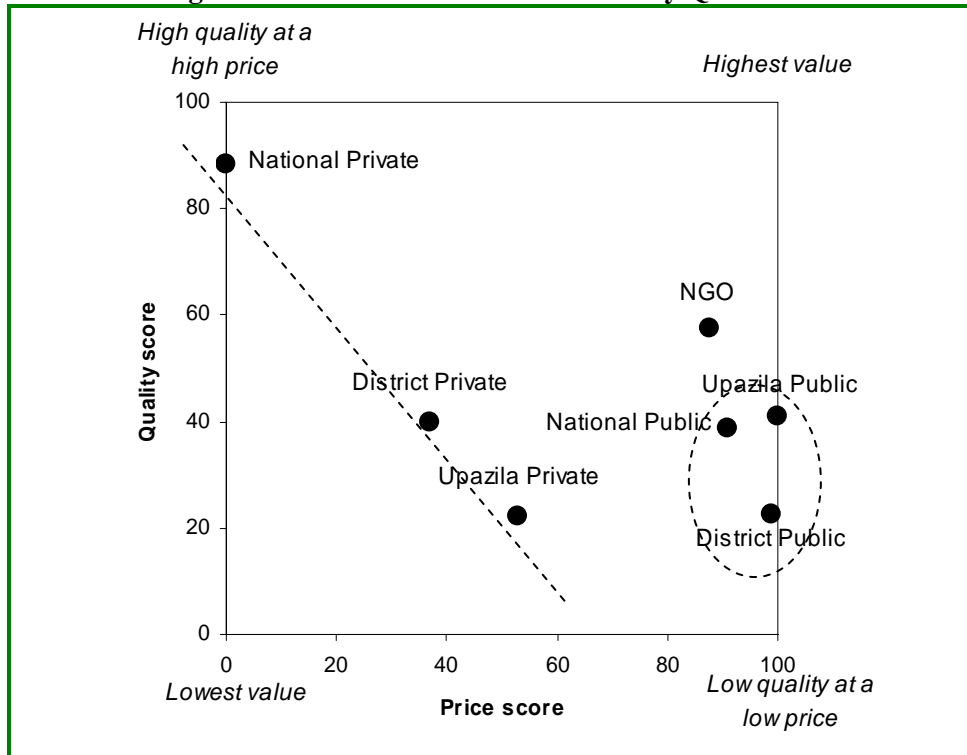


Source: Authors

3.12 With regards to public facilities, they all lie close to each other in the figure, in an area of low price and moderate quality. It can be seen that public facilities have quality scores similar to those of private upazila and district level facilities, but at a much lower price. NGO facilities, however, have a price score almost as good as public facilities, but enjoy a much better quality.

3.13 The second alternative for measuring value comes from the exit polls. The quality score is the average between the perceived and technical quality scores, and the price score is obtained from the out-of-pocket payments made by the patients (see Figure 6). It may be seen that private, public and NGO facilities all occupy distinct zones in the graph. Private facilities lie in a zone of moderate to good quality at a moderate to high price. Public facilities lie in a zone of very low price and moderate to low quality. NGO facilities lie in the zone of high quality at a low price. This means that NGOs show the highest value of all, while the value of private versus public providers is more difficult to evaluate unambiguously as they lie in such different zones.

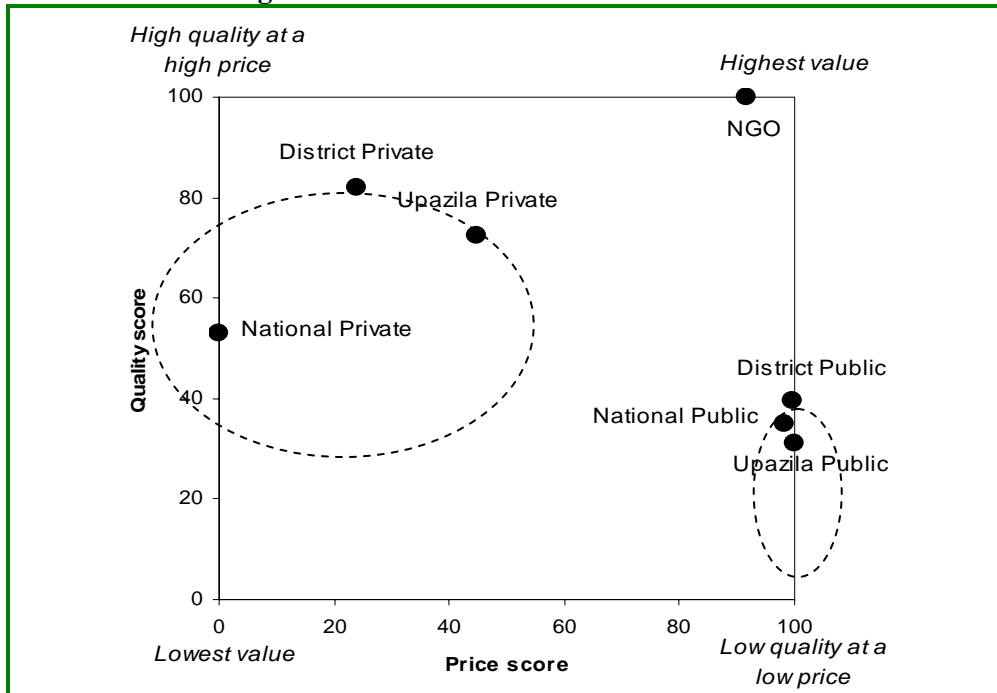
Figure 5. Value Derived from the Facility Questionnaire



Source: Authors

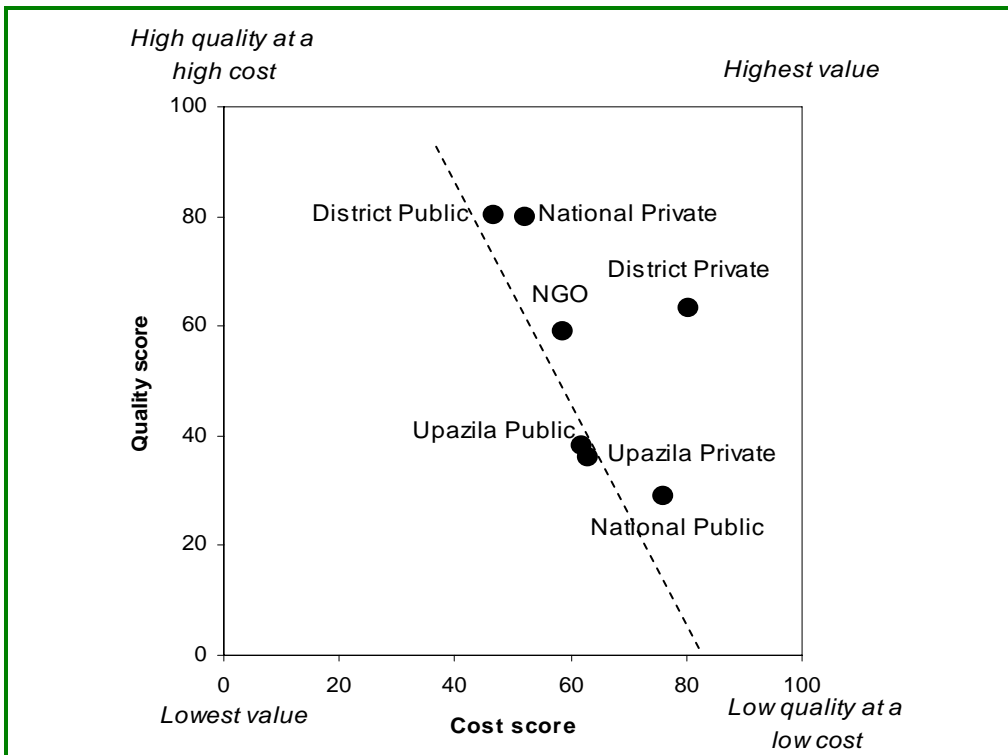
3.14 The third alternative for deriving value comes from the direct observations. In this case, the relationship between quality (exclusively technical) and unit cost is used (see Figure 7). The figure shows that all facilities, except the district level private ones, lie approximately on a straight line, starting from district level public facilities (with high quality at a moderate cost) and ending at national level public facilities (with a moderate to low quality at a low cost). This means that the value ratio of these facilities is more or less constant, even if they span a wide range of qualities and costs. It may be observed that district level public facilities lie close to national level private facilities, and that *upazila* level public facilities lie close to *upazila* level private facilities. Finally, district private facilities unambiguously show a higher value than other facilities. They have lower costs than all other facilities and are only overcome by the quality of district public and national private facilities.

Figure 6. Value Derived From the Exit Polls



Source: Authors

Figure 7 Value Derived from the Direct Observations



Source: Authors

II. Quality Performance

3.15 In this section on the study results, an integral and multidimensional vision on the quality of the health care facilities is provided. First, the perspective of the health service users is analyzed in terms of their assessment of the quality of services and facilities, taken from both inpatient and outpatient interviews. Second, structural aspects of the quality dimensions are analyzed on the basis of data provided by the facilities. Third, the process dimension of quality is assessed on the basis of compliance with a generally accepted medical treatment protocol which had been elaborated and then validated with local doctors.

Inpatient Perspective

3.16 Quality of services and facilities from the inpatients' perspective has been assessed using the following elements (see Table 14):

Number of doctor visits per day: Patients at public and private facilities are visited at least once a day by a doctor, if not twice as is the case at more than 6 percent of both types of facilities. While at the upazila and district level more private patients are seen twice a day by a doctor, at the national level this relation is inverted.

Meals provided at the facility: Close to 100 percent of the public facilities provide their patients with three meals a day, while the private facilities at upazila and district level do not provide any meals, and only half of the national level private facilities provide their patients with meals.

Quality of meals: Two thirds of the patients of public facilities consider the meals to be of regular quality, while one third rates them as good. Meanwhile, the large majority of the private patients who receive meals rate them as good.

Linen: At all administrative levels, less than 20 percent of patients had to bring their linen, with the exception of public national hospitals where half of the patients had to do so. At these facilities the cleanliness of the bed sheets is rated worst of all.

Cleanliness: Close to 100 percent of all wards at public and private facilities are ranked at either clean or regular. However, the cleanliness of toilets shows considerable differences between the private and public sector facilities, with the former generally ranked as much cleaner. It is particularly important to note that less than 20 percent of the public facility toilets are considered to be clean, and in fact between a third and sometimes even two thirds at national level hospitals, are considered as dirty.

Women doctors attend female patients: Although in the private sector facilities at upazila and district level, women are treated more often by female doctors (roughly 10 percent more) than in public facilities of the same level, between 10 and 20 percent of private female patients who had not been seen by a woman doctor are bothered about this situation. Note that in the public national level hospitals, more women are treated by female doctors than in private facilities.

Table 14. Inpatient Quality

All variables measured in percent	Upazila		District		National	
	Public	Private	Public	Private	Public	Private
Number of doctor visits per day:						
○ Two or more times per day	68	76	58	86	100	72
○ Once every day	28	22	40	14	0	28
○ Less than once per day	4	2	2	0	0	0
○ Total	100	100	100	100	100	100
Received meals at facility	93	1	92	0	100	49
Ranking of meal quality:						
○ Good	34	100	27		6	86
○ Regular	62	0	64		49	14
○ Bad	4	0	9		46	0
○ Total	100	100	100		100	100
Brought linen	12	23	15	11	47	19
Thought bed was clean	88	98	80	98	68	97
Rank cleanness of ward:						
○ Clean	35	61	32	66	55	20
○ Regular	63	38	66	33	44	77
○ Dirty	2	1	2	1	1	3
○ Total	100	100	100	100	100	100
Rank cleanness of toilets:						
○ Clean	21	47	19	33	0	57
○ Regular	51	46	44	57	37	43
○ Dirty	28	6	35	9	63	0
○ Did not use it	0	0	2	0	0	0
○ Total	100	100	100	100	100	100
Women attended by female doctor	25	33	42	54	50	29
Bothered by not being attended by female doctor	17	23	13	38	11	22
Declared treated with courtesy by staff	95	100	98	98	86	97

Source: Exit poll for inpatients

Own computations

Outpatient Perspective

3.17 In sum, one can say that the most important difference between private and public providers was detected in the rating of the facilities' cleanliness, with public hospitals generally ranked considerably worse than private ones (Table 15). Surprisingly, there was no significant difference in the perception of staff courtesy towards the patients. However, in the private facilities many more female doctors treated female patients which led to greater patient satisfaction in this item.

3.18 **Diagnosis explained to patients:** Only at the private tertiary hospitals 100 percent of the patients received an explanation of their diagnosis. The other facilities show shares of between 80

and 94 percent. Public hospitals at upazila and national levels have particularly low levels of diagnostic explanations, 80 percent and 85 percent respectively.

3.19 Women doctors attend female patients: At the upazila and national level, women were attended to twice as often by a woman doctor in the private facilities than in the public ones. However, at the district level, private hospitals register 30 percent less cases of women doctors attending female patients than the public facilities. Although more female patients visiting public facilities tend to be bothered about a male doctor attending them, this issue does not seem to generate much concern in general as a maximum of between 10 to 20 percent women are said to be bothered about this.

3.20 Courtesy of staff: The vast majority of the people, including the public sector patients, perceived the attitude of medical staff as polite. The perception of politeness is lower in public facilities when compared to private facilities. Public tertiary hospitals scored the worst in this aspect, with almost one quarter of the patients finding the staff to be impolite.

3.21 Cleanliness: The private sector facilities at all levels are clearly ranked cleaner than the public facilities across all three evaluated items (waiting room, consultation room and toilets). In particular regarding the cleanliness of the toilets, the public entities score much worse than the private ones.

Table 15. Outpatient Quality

All variables measured in percent	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Was explained diagnostic	80	91	100	94	89	85	100
Women attended by female doctor	11	20	66	45	31	36	65
Bothered by not being attended by female doctor	24	18	0	0	23	11	0
Declared treated with courtesy by staff	87	99	99	89	93	77	98
Rank cleanness of waiting room:							
o Clean	32	48	62	26	65	48	75
o Regular	64	49	38	64	34	48	25
o Dirty	3	3	0	11	1	5	0
o Total	100	100	100	100	100	100	100
Rank cleanness of consultation room:							
o Clean	58	58	82	38	80	75	80
o Regular	41	42	18	62	20	25	20
o Dirty	1	0	0	0	0	0	0
o Total	100	100	100	100	100	100	100
Rank cleanness of toilets:							
o Clean	10	25	35	6	29	15	44
o Regular	41	43	38	29	36	15	31
o Dirty	14	2	0	38	2	35	0
o Did not use it	34	30	28	27	33	35	25
o Total	100	100	100	100	100	100	100

Source: Exit poll for outpatients

Own computations

At the Facilities

See Table 16.

3.22 Ownership of the facilities: It is of no surprise that the public sector facilities at all levels are owned by the State. In the private sector by contrast, there is a correlation between ownership and the administrative level at which the facility is located: at the national level all private providers own their facilities, at the district level this is the case in 75 percent of the instances and at the upazila level only in 25 percent. The NGOs own their facilities in even fewer cases (i.e. 13 percent).

3.23 Main source of drinking water: In general terms, relatively few facilities have access to piped water, while the large majority of facilities use hand-pumps or deep tube wells. This relation is inversed only at the tertiary level, where in particular the private sector has access to piped water (75 percent versus 50 percent in the public sector). At the upazila level, water tanks are also quite common (38 percent in the public and 19 percent in the private sector facilities).

3.24 Main source of electricity: At the tertiary level, all hospitals draw on public electricity using a generator as a fall-back option. However, at the district and upazila level only half of the public and none of the NGO-run facilities can count on these energy sources, while the rest have access to only public energy, which at times can be interrupted.

3.25 Sewerage system: As in the case of electricity and water, important differences are observed between the different administrative levels. However, it does not vary much between public and private providers. At tertiary hospitals, sewers are mostly used (although it is surprising to note that 50 percent of the public facilities use pots which are regularly emptied), whereas at the district and upazila facilities (including NGOs) the vast majority uses septic tanks.

3.26 Toilets: Almost 100 percent of all facilities studied had their toilets attached to the wards/rooms, with the only exception being 7 percent of the private upazila level providers where the toilets were situated outside of the facility. Most facilities had separate toilets for men and women. However, in the case of NGOs 62 percent did not have separate toilets.

With regard to the cleanliness of toilets, only the private tertiary hospitals scored well in this item (75 percent were clean). In contrast, 50 percent of the public district hospitals were assessed as dirty. The large majority of facilities were found to have their toilets in regular condition.

3.27 Overall maintenance: A continuous improvement in terms of maintenance can be observed from the upazila to the higher administrative levels for public and private providers alike. At the upazila level only 25 percent of public and private facilities are considered as well maintained, in contrast to 88 percent of NGO run facilities, while two thirds are only somewhat maintained. At the district level half of the facilities are well maintained, and at the tertiary level the situation at the public sector is similar to that at the district level. In the private sector, 75 percent of the facilities at the national level are well maintained and 25 percent are very well maintained.

3.28 **Appointments:** At the facilities studied, no appointments for consultation are made by telephone; people come early or just walk-in when they need to see the doctor.

3.29 **Patient dealing:** The actual procedure for deciding on the sequence of patient to be seen gives reason for concern in the case of almost all health providers across all levels. The only exception are a few private providers in the upazilas and districts where the general policy is to treat patients according to the order in which they come, however they do not take into account the severity of the disease. Furthermore, the majority of the staff receiving patients are not trained in patient handling.

3.30 **Training contents:** It is of concern that, in general, staff capacity building plays only a very minor role in all facilities, but particularly so in the public facilities. NGO providers, in contrast, engage in more staff training on different issues, for example NGOs are the only providers with gender sensitization training. Private tertiary hospitals also provide certain important trainings.

3.31 **Policy for female patients:** Only in the upazila level a very modest proportion of public and private-for-profit providers reported to have a policy for the treatment of female patients (13 percent and 6 percent respectively).

3.32 **Medical records:** Majority of the public providers and NGO facilities keep daily patient records, while the private sector facilities at the lower administrative levels do this to a much lesser degree (38 percent at upazilas and 50 percent at district clinics). However, these records are not kept for all patients at all facilities.

3.33 On the other hand, in the private sector, with the exception of the upazilas, the doctors are more often provided with these medical records before seeing the patients as compared with the public providers. The most rigorous medical record system is found in the NGOs.

3.34 **Medical treatment protocol:** With regards to the existence of medical treatment protocols, not much difference are found between the different types of providers, but rather differences exist across the administrative levels where these providers are located. Thus, 100 percent of all tertiary hospitals have written protocols and these are available to all medical staff. On the other hand, this is the case in only 25 percent of all district hospitals and clinics. At the upazila level, the NGOs again fare very well with 63 percent of them having written protocols.

3.35 **Patients provided with drugs, medical supplies, etc.:** According to the facility staff interviewed, patients have to get their own drugs and medical supplies in majority of the facilities regardless of type or administrative level. In fact, the public sector facilities report that patients have to bring their own drugs more often than private facilities and NGOs.

3.36 This information stands in stark contrast to what the exit polls brought to light, since according to the patients, the public sector facilities in particular do provide the drugs in most cases for both out and inpatients, and generally these are provided free of charge. Further analysis is needed to get a better understanding of this apparent contradiction.

Table 16. Facility Quality

	Upazila			NGO	District		National	
	Public	Private	Public		Private	Public	Private	
Ownership status of facility (%):								
o Own	100	25	13	100	75	100	100	
o Rented	0	75	88	0	25	0	0	
o Total	100	100	100	100	100	100	100	
Main source of drinking water (%):								
o Piped water	13	0	25	0	0	50	75	
o Tank	38	19	0	0	13	0	0	
o Hand pump/deep tube well	50	81	75	100	88	50	25	
o Total	100	100	100	100	100	100	100	
Main source of electricity (%):								
o Public electricity	50	38	100	50	38	0	0	
o Public & generator	50	63	0	50	63	100	100	
o Total	100	100	100	100	100	100	100	
Sewerage system of the facility (%):								
o Sewer	13	6	0	0	0	50	75	
o Septic tank	88	94	100	100	75	0	25	
o Pots regularly emptied	0	0	0	0	25	50	0	
o Total	100	100	100	100	100	100	100	
o % separate toilets for men and women:	100	75	38	75	75	100	100	
Cleanliness and functionality rating of toilets (%):								
o Dirty	0	0	13	50	0	0	0	
o Regular	100	81	75	50	88	100	25	
o Clean	0	19	13	0	13	0	75	
o Total	100	100	100	100	100	100	100	
Location of most toilets (%):								
o Attached to wards/rooms	100	93	100	100	100	100	100	
o Detached outside	0	7	0	0	0	0	0	
o Total	100	100	100	100	100	100	100	
Overall maintenance status of the facility (%):								
o Very well maintained	0	0	0	0	0	0	25	
o Well maintained	25	25	88	50	50	50	75	
o Somewhat maintained	75	75	13	50	38	50	0	
o No maintenance in last 3 months	0	0	0	0	13	0	0	
o Rundown	0	0	0	0	0	0	0	
o Total	100	100	100	100	100	100	100	
Channel for appointments (%):								
o Call in by phone	0	0	0	0	0	0	0	

	Upazila			NGO	District		National	
	Public	Private	Public		Private	Public	Private	
o Comes earlier to make appointment	25	38	0	0	13	50	25	
o Just walk in	63	56	100	100	88	50	75	
o Referring doctors	13	6	0	0	0	0	0	
o Total	100	100	100	100	100	100	100	
Organization of appointments:								
o First come-first serve	100	88	100	100	88	100	100	
o By disease severity	0	13	0	0	13	0	0	
o Total	100	100	100	100	100	100	100	
% with staff trained in patient handling issues covered in training:	13	0	75	33	43	0	75	
o Counseling (%)	0	0	50	33	43	0	75	
o Personal hygiene (%)	13	0	50	0	14	0	25	
o Customer service (%)	0	0	25	0	14	0	50	
o Respect of religion (%)	0	0	0	0	0	0	0	
o Sensitivity to gender issues (%)	0	0	25	0	0	0	0	
o Others (%)	13	0	13	0	0	0	0	
o % policy for female patients	13	6	0	0	0	0	0	
o % keeps daily patients records	100	50	100	100	75	100	100	
% keeps medical records for all patients	75	38	88	50	50	50	75	
% provides doctors with medical records	38	31	88	50	63	0	75	
% do outreach activities	13	0	75	33	0	0	0	
Provide patients' needs for diagnostic and treatment (%):								
o Yes	0	0	25	0	25	0	50	
o No	38	93	75	25	63	0	25	
o Sometimes	63	7	0	75	13	100	25	
o Total	100	100	100	100	100	100	100	
% where patient must bring:								
o Drugs	100	88	75	75	75	100	50	
o Medical supplies	75	88	75	50	75	100	50	
o Linen	0	13	0	50	13	0	0	
o Other	0	13	0	0	25	0	25	
o % written medical protocol	25	0	63	25	25	100	100	
o % protocol available to all medical staff	100	nd	100	100	100	100	100	

Source: Facility survey

Own Computations

Direct Observations

3.37 As noted above, the direct observations were carried out by the interview teams (Table 17). In the case of inpatient service observations, hospital staff was requested to gain access to the clinical records in order to verify if registers were kept on standard medical protocol aspects. In addition to this, the patients were asked a series of questions to complement the records (the only exception to this approach was Severe Diarrhea as the patients were less than 5 years old and not necessarily accompanied by an adult). In the case of outpatient service observations it was recorded whether the clinical protocol, which includes a set of standard questions for the treatment of the studied services, was applied.

(i) Caesarean Section

Registers:

3.38 The overall performance of this technical quality indicator is considerably better in the public facilities than that in the private facilities.

The performance gap is particularly striking at the upazila level, where the Upazila Health Complexes (UHC) register on average 75 percent of the items in the medical protocol, while the private facilities register only 45 percent. However, the performance gap is found to grow smaller at the higher level facilities.

Information from the patient

3.39 At the upazila level the public sector fares consistently better than the private sector facilities in all items evaluated, however this situation takes on a more complex pattern at the district and national facility levels. This may be due to unused capacities and overstaffing. Furthermore, there were little C-sections found at the UHC in the sample districts and the few cases observed are likely to draw statistically insignificant results. The results at the district and national level are analyzed further below.

3.40 With the exception of the facilities at the upazila level, patients at private facilities need to wait considerably less for doctors and nurses to attend to them than those at the public facilities.

3.41 An important difference can be observed in the number of planned C-sections, which in particular at the tertiary level are five times higher in the private hospitals than the public ones. In terms of the doctor and nurse visits per day as well as the duration of their visits, no significant differences can be established between the different types and levels of providers.

It is interesting to observe that the public tertiary hospitals fare worse in terms of post natal counseling, motivation for breastfeeding and giving a postnatal care appointment than their private counterparts. Public district hospitals, on the other hand, fare better in these items than their private counterparts.

Table 17. Direct Observation of Cesarean Section

	Upazila		District		National	
	Public	Private	Public	Private	Public	Private
Observations (N)						
Total	8	32	12	24	8	16
Registers (percent):						
o Prior pregnancies	75	41	58	50	88	56
o Bleeding	67	20	90	68	100	81
o Complications	75	59	83	83	57	81
o Contractions and partogram	25	41	100	67	57	63
o AGPAR	100	50	100	75	100	94
o Surgery report	100	62	100	96	100	100
o Anesthesia report	75	29	100	92	100	100
o Condition of wound	88	47	67	67	88	75
o Follow-up on wound treatment	75	53	58	64	100	75
o Diagnosis at discharge	75	46	67	50	100	100
o percent registers available	75	45	82	71	90	83
Information from patient:						
o Seen by medical staff (%)	100	100	100	100	100	100
o Waiting time for doctor (minutes)	20.5	35	63.9	28.9	55.6	3.4
o waiting time for nurses (minutes)	6.4	6.6	11.9	7.79	23.75	2.9
o Pre-planned caesarean section (%)	57	41	33	46	13	63
o Number of doctor visits per day	2.5	1.8	1.9	2.7	3.5	3.7
o Average visit duration (minutes)	12.4	6.3	7.4	7.8	4.3	5.1
o Number of nurse visits per day	5.9	4.8	4.9	6.0	6.6	6.9
o Average visit duration (minutes)	18.3	7.0	7.9	8.5	4.3	5.6
o Given post natal counseling (%)	88	78	100	92	50	69
o Motivated to breastfeed (%)	100	97	100	100	75	100
o Given appointment for postnatal check (%)	75	47	75	58	88	100

Source: Direct observation survey
Own Computations

(ii) Normal delivery

Registers:

3.42 There is no clear pattern with regard to whether the performance of the private or public sector facilities is better in terms of recording fundamental aspects of the clinical attendance protocol for normal delivery. Rather a difference can be seen between the different administrative levels, with upazila facilities showing the lowest percentage of registers and tertiary facilities showing the most. Overall, the percentage of registers available is fairly low across all providers.

This is particularly surprising at the public facilities, since these perform much better in this indicator when it comes to C-sections.

Information from the patient:

3.43 In contrast to C-sections, it is the private sector at upazila level which fares consistently better than the public sector in the quality indicators for normal delivery. A similar situation is true for private hospitals at the district level, although the differences between the public and private sector are smaller at this level, and also there are more nurse visits per day for slightly more time in the public sector. However, the comparison at the tertiary sector is more complex, as in some areas the private sector is evaluated to be much better (such as, shortest waiting times, postnatal counseling) and in others the public sector fares better (number of doctors and nurses visits).

Table 18. Direct Observation - Normal Delivery

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Observations (N)	16	32		12	24	8	16
Registers (percent):							
○ Prior pregnancies	46	46		67	58	75	63
○ Bleeding	31	52		42	42	75	75
○ Complications	83	81		50	88	50	75
○ Partogram	73	64		92	46	75	100
○ AGPAR	69	74		100	71	100	100
○ Blood transfusion	25	8		25	11	63	67
○ Episiotomy	31	25		58	58	63	75
○ Placenta elimination	50	34		75	46	63	75
○ Diagnosis at discharge	46	46		92	92	100	94
○ percent registers available	52	52		67	58	74	81
Information from patient:							
○ Attended by medical staff (%)	94	91		100	96	100	100
○ Waiting time for doctor (minutes)	27.8	17.3		27.7	25.5	58.8	11.3
○ waiting time for nurses (minutes)	7.3	5.6		10.6	8.3	19.4	9.8
○ Number of doctor visits per day	1.5	3.1		1.9	2.6	3.8	3.4
○ Average visit duration (minutes)	5.8	8.1		5.5	7.4	3.4	4.5
○ Number of nurse visits per day	4.1	7.7		5.9	4.5	6.4	5.7
○ Average visit duration (minutes)	7.7	7.5		6.1	5.9	4.3	4.9
○ Percent given post natal counseling	100	100		92	95	50	75
○ Motivated to breastfeed (%)	100	100		100	100	50	100
○ Given appointment for postnatal check (%)	62	48		100	83	100	100

Source: Direct observation survey, Own Computations

3.44 The most important difference between the private and public sector facilities at all levels is the waiting time for doctors and nurses, which in the private sector is considerably shorter- in particular at the national level hospitals.

3.45 While the doctor visits are generally more frequent and longer in the private sector, on average there are more nurse visits and the average duration of the visit is slightly more in the public sector. Postnatal counseling, including the promotion of breastfeeding, is close to 100 percent at the lower level facilities, but slips at the tertiary hospitals considerably, for example in the public tertiary level hospitals it is found to be only 50 percent (this indicator is also very low for C-sections carried out at public national hospitals). Appointments for postnatal checks are more common at the public facilities.

(iii) Severe diarrhea

Registers

3.46 Hospital treatment of severe diarrhea shows fairly similar levels of recording, both across the different types of providers and for the different administrative levels. While at the upazila level the public sector fares better, at the national level the availability of registers is 25 percent more at the private facilities compared to the public ones. Again, the public national hospitals show deficiencies as they seldom record the degree of dehydration and the type of drinking water consumed at home.

Table 19. Direct Observation - Severe Diarrhea

	Upazila		District		National	
	Public	Private	Public	Private	Public	Private
Observations (N)	16	32	12	24	8	16
(All variables measured in percent)						
Controls						
Weight	27	48	75	75	50	50
Urine	7	14	50	13	50	50
Vital functions	67	69	75	75	63	94
percent controls done	33	44	67	54	54	65
Registers						
Dehydration degree	100	93	100	100	63	100
Type of drinking water at home	20	21	50	33	0	50
Type of food	87	69	100	100	100	100
Type of treatment chosen	87	83	100	100	100	100
percent registers available	73	66	88	83	66	88

Source: Direct observation survey

Own Computations

3.47 On the other hand, the low level of registered routine controls at all hospitals (with the exception of vital controls) gives reason for concern, in particular taking into account that the treatment of severe diarrhea is the most frequent reason for hospital treatment in the public sector sample facilities and among the most frequent ones in the private sector sample as well.

(iv) Acute respiratory infections

Clinical history:

3.48 In terms of inquiring about the clinical history of the patients, the private sector facilities fare consistently better than their public counterparts at all administrative levels, with the greatest quality gap being observed at the national level hospitals. It is at the national public hospitals, where some of the protocol questions were not posed at all, such as treatment applied at home and drugs taken before.

Clinical exams:

3.49 With regard to the clinical exams of the patients, the situation is similar to that noted above under clinical history. The private facilities perform on average considerably better than the public ones, again with the most notorious quality gap at the national level, where private facilities follow on average twice as many protocol aspects as their public counterparts.

Indications:

3.50 Once again the private sector facilities perform better in the indicators chosen.

3.51 These results are surprising as they contrast with the general assumption that private health care providers are characterized by a lack of good quality care and a tendency to not follow or act according to the set clinical protocols.

Table 20. Direct Observation - ARI (percent)

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Observations (N)	18	32	27	12	23	10	18
(All variables measured in percent)							
Clinical history:							
o Age of child	94	100	100	83	100	100	72
o Has cough	100	100	100	92	100	100	94
o Has breathing difficulties	89	84	96	83	96	70	94
o Has fever	94	91	100	75	91	80	94
o Has seizures	17	9	7	50	48	50	17
o Has ear pains	11	34	30	17	26	30	39
o Does ear fester oozing	0	22	22	17	9	0	17
o Has stopped eating	50	72	67	50	70	80	83
o Has sore throat	17	28	37	42	35	50	78
o Had these difficulties before	50	47	37	42	30	10	78

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
○ Treatment applied at home	73	93	74	67	70	0	50
○ Kinds of drugs taken	82	89	56	78	75	0	50
○ percent history inquired	53	67	67	59	63	54	70
Clinical exams:							
○ State of consciousness	78	81	89	83	100	30	72
○ Respiratory rate	94	97	85	92	100	50	100
○ Throw	28	47	56	50	43	30	61
○ Hydration and nutrition	89	91	67	58	57	60	83
○ Temperature	61	100	93	83	91	100	100
○ Weight	28	59	63	25	52	60	100
○ Oral exam	44	66	74	75	61	80	83
○ Ear exam	6	22	52	25	17	20	17
○ Lungs auscultation	50	97	96	100	91	50	94
○ Cervical ganglions	33	44	63	25	35	20	39
○ Percent exams done	66	83	62	68	74	30	69
Indications:							
○ Informed patient of diagnostic	39	38	11	42	39	30	89
○ Increase water and liquid consumption	72	84	78	75	83	10	56
○ Follow up visit	78	100	93	83	96	20	72
○ Return if gets worse	78	100	70	75	83	60	83
○ Return if has more difficulties	61	94	59	67	70	30	44
○ Referred to hospitalization	0	0	4	0	0	0	6
○ Referred to specialist	0	0	4	0	0	0	0

Source: Direct observation survey
Own Computations

(v) Antenatal care

3.52 In general, it can be observed that only in 50 percent of all antenatal care (ANC) visits clinical records on the patients are kept, with the public sector facilities faring slightly better than the private facilities.

Clinical history

3.53 Public and private facilities at the upazila level show similar overall performance with regards to inquiring about the clinical history of patients, with the private sector scoring slightly better. On the other hand, at the district hospital level, the public facilities fare considerably better in terms of inquiring about clinical history (85 percent versus 71 percent in the private sector)¹⁵.

¹⁵ The public facilities at tertiary level were not assessed in this item as no information on the clinical history was available.

Clinical exams

3.54 With regard to following the protocol for clinical exams in case of ANC, the public facilities at upazila and district level rank better than their private counterparts. At the tertiary level, however, the situation is reversed and private clinics fare better.

Indications

3.55 In contrast to the other two groups of indicators, the performance of public hospitals in giving indications to the patients about proper ANC is poor. Except for the district level where no significant differences are observed, the private sector facilities perform better than the public facilities in this aspect.

Table 21. Direct Observation Results Antenatal Care (percent)

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Observations (N)							
Sample	16	26	29	9	25	10	19
Replacements		6		3			
Total	16	32	29	12	25	10	19
Percent of patients with clinical record	44	28	72	50	44	50	53
(All variables measured in percent)							
Clinical history:							
o Is first ANC visit	63	56	52	67	56	60	53
o Had signals of bleeding, swollen legs, fever, etc	38	79	55	88	65	nd	67
o Did baby make movements	75	71	55	88	100	nd	100
o Used any drugs	50	63	66	88	88	nd	100
o Used any vitamins	38	71	72	75	94	nd	100
o percent history inquired	58	61	60	85	71	60	52
o Clinical exams:							
o Breast exam	25	34	45	83	72	30	42
o Gynecological exam	75	56	52	92	100	60	68
o Temperature	81	56	93	83	64	80	95
o Blood pressure	87	84	100	100	96	100	79
o Asked for last menstruation	94	94	59	83	80	70	84
o Weight	81	72	100	42	88	90	79
o Pulse	94	94	86	83	80	60	84
o Uterine height	44	34	48	58	24	50	63
o percent exams done	73	66	73	78	76	68	74
o Indications:							
o About proper ANC	63	84	100	100	96	70	100
o Referred to hospitalization	0	0	0	8	0	0	5
o Referred to specialist	0	3	0	0	0	0	5

Source: Direct observation survey, Own Computations

(vi) Hypertension

Clinical history

3.56 In the case of treatment for hypertension, public facilities are found to provide better quality care than private ones, especially with regards to inquiring about the clinical history of the patients. It is particularly striking as well as a contrast to most other services studied, that the public tertiary hospitals attain the highest scores.

Clinical exams

3.57 In contrast to the above-mentioned dimension, it is the private sector facilities which obtain better assessments at all administrative levels in terms of carrying out clinical exams of the patients. While the differences in the upazilas and districts are rather small, the quality indicator gap at the national hospitals (65 percent at public versus 76 percent at private clinics) is quite significant.

Indications

3.58 Generally speaking, the private sector complies with the protocol to a greater extent than the public facilities in indicating to the patients certain behavioral changes. It can be speculated from the data collected, that there is a difference in the approach to address hypertension between public and private providers. While the first put emphasis on weight control and exercise, the latter focus more on giving-up smoking and drinking.

Table 22. Direct Observation - Hypertension (percent)

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Observations (N)							
Total	17	33	19	12	25	9	17
Patients with clinical record							
All variables measured in percent							
Clinical history:							
○ Is first hypertension visit	53	45	58	75	60	33	65
○ Is follow up visit	57	75	75	100	43	0	0
○ Uses drugs for treatment	62	68	44	56	65	0	0
○ Do drugs cause secondary effects	75	26	18	20	45	0	0
○ Uses a specific diet	46	57	42	22	6	0	0
○ Has his own clinical record	29	24	37	0	28	100	47
○ percent history inquired	49	47	42	41	44	67	50
Clinical exams:							
○ Blood pressure	94	91	100	83	92	89	88
○ Blood pressure twice or more	29	36	79	50	28	56	29

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
○ Asked familiar/clinical history	65	67	79	100	84	89	82
○ Heart auscultation	88	97	100	100	84	89	100
○ Weight	47	55	58	50	52	22	59
○ Signs of organ damage	65	67	68	58	64	22	76
○ Pulse	88	94	89	100	100	89	100
○ percent exams done	68	72	82	77	72	65	76
Indications:							
○ Cease smoking	65	73	53	67	84	44	76
○ Reduce weight	76	67	42	92	84	33	88
○ Reduce excessive alcohol	24	58	21	33	32	11	59
○ Do physical exercise	88	82	89	92	80	44	88
○ Reduce of salt intake	82	82	95	92	92	67	94
○ Increase fruit and vegetable consumption	76	64	89	83	88	89	82
○ Reduce fat intake	71	79	95	92	88	67	88
○ Referred to hospitalization	0	3	0	0	0	0	0
○ Referred to specialist	0	0	0	0	0	0	0
○ percent indications given	69	72	69	79	78	51	82

Source: Direct observation survey

Own Computations

III. Price

3.59 With regard to medical services received and price paid, there are notorious differences between public and private sector patients: i) private patients are recommended many more surgeries and ancillary services than public sector patients; ii) private patients have to pay for all services while they are mostly free or much cheaper for patients attending public facilities. A possible pattern emerging from these observations is linked with the incentive structure of the private sector that is the more services the private sector providers can offer, the more they can charge. However, this could also be due to the possible lack of physical resources in the public sector.

Inpatients

See table 23.

3.60 **Price list and ex-ante deposit:** Few patients were shown price lists before the commencement of their treatment, with the exception of district level private hospitals (86 percent). On the other hand, between one-half and two-thirds of private patients have to make ex-ante bank deposits, with the average amount being lowest at district level (654 Taka), while surprisingly the highest average is found at the upazila level (1370 Taka). Although public patients also report bank deposits prior to hospitalization, the amounts paid are insignificant (ranging between 5 to 18 Taka) and point more to hidden unofficial payments.

3.61 **Drugs received during the stay:** At public facilities more than 80 percent of patients receive drugs from the facility all of which are free of charge. At private facilities only half of the patients and at national level clinics three quarters of patients, receive drugs during hospitalization, but all of them had to pay for them. Drug prices at the district level private facilities were lowest with an average of 934 Taka, and were highest at the national level clinics with an average of 1840 Taka.

Table 23. Inpatients – Price (percent except where otherwise noted)

	Upazila		District		National	
	Public	Private	Public	Private	Public	Private
Received drugs during stay (%)	93	56	83	44	83	75
Paid for drugs (%)	0	87	0	100	0	100
Drug payment (tk)		1,486		934		1,840
Given drug prescription after discharge (%):						
o Yes	38	57	55	46	66	56
o No	11	6	2	2	0	0
o Still not discharged	52	37	43	52	34	44
o Total	100	100	100	100	100	100
Got drugs at facility (%)	33	8	50	10	29	37
Paid for drugs (%)	0	20	0	100	0	100
Drug payment (tk)		2		101		349
Shown price list (%)	33	33	19	86	42	6
Made deposit before hospitalization (%)	11	46	42	68	47	75
Deposit (tk)	5	1,370	18	654	15	1,216
Gratitude payments (%)	4	14	10	11	31	44
Gratitude payments (tk)	23	35	24	122	21	114
Paid staff directly	4	2	2	0	14	1
Paid for quicker admission	2	0	0	1	3	0
Received surgery (%)	24	80	23	72	22	26
Paid surgery (%)	8	98	0	100	0	100
Surgery payment (tk)	300	2,755		4,148		14,447
Received medical supplies (%)	71	79	69	70	42	74
Paid medical supplies (%)	10	84	0	82	0	100
Medical supplies payment (tk)	38	698		651		224
Received lab test (%)	13	41	42	81	28	72
Paid lab test (%)	57	100	35	100	0	100
Lab test payment (tk)	38	153	23	214		414
Received imaging service (%)	4	31	40	61	50	65
Paid imaging service (%)	100	100	26	100	28	100
Imaging service payment (tk)	203	284	62	342	156	1,031

Source: Exit poll for inpatients and Facility questionnaire.

Own computations

3.62 **Drug prescription after discharge:** Roughly half of all patients received drug prescriptions after discharge, being relatively high at the public national hospitals with 66 percent and lowest at the public upazila level health complexes (38 percent). Between 30 and 50 percent of the public patients got these drugs free of cost at the facilities. On the other hand, the few private patients who did obtain the drugs from the facility had to pay for them- between 100 Taka and 350 Taka.

3.63 **Informal payments:** Patients at all levels and types of facilities reported very small numbers and amounts of informal payments. Gratitude payments were the most common form, in particular at the national level facilities; while direct payments to staff or monetary influence to get admitted more quickly were found to be insignificant. The only exceptions were direct payments to staff at the public national hospitals (14 percent of incidence).

3.64 **Surgery:** Patients at lower level private facilities went through surgeries three to four times more often than at public facilities. Only at the national level, 25 percent of both public and private facility patients received surgery. This can partly be explained by the incentives of the private facilities to operate: i) all patients have to pay for the surgery (2755 Taka at upazila level, 4148 Taka at district level, but 14,447 Taka at national level); ii) this high price differential in the private sector between district and national level accounts for a good part of the fewer surgical interventions at the tertiary private hospitals. An additional explanation for less surgical interventions at the public facilities, particularly at the lower levels, could be related to the scarcity of resources in the public sector.

3.65 **Medical supplies:** A fairly similar number of patients at all levels and across both types of providers, received medical supplies during the hospitalization. But again, the vast majority of private patients had to pay, the maximum amount being at the upazila level (698 Taka) while the least being at the national level (224 Taka).

3.66 **Lab tests:** Patients in the private sector received lab tests twice to three times more often than in the public facilities. All patients attending private clinics had to pay for these exams, with prices being about four to nine times higher than that in the public sector, and the highest average payment being at the national level clinics (414 Taka).

3.67 **Imaging services:** Again the patients seeking care in private health facilities received more imaging services than public sector patients. This difference is particularly notorious at the upazila level (31 percent versus 4 percent). This very small proportion of Upazila Health Complex patients receiving imaging exams can be explained by the fact that all patients had to pay for the service, a price that was similar to that of the private sector (i.e. 203 Taka). On the other hand, roughly half of the public sector patients at district and national level received imaging exams, and only a third of them had to pay and even for those the prices were five to seven times lower than that at the private sector and also lower than that at the Upazila Health Complex.

Outpatients

3.68 As in the case of inpatients, the private facilities prescribed more ancillary services than their public counterparts, and almost all patients had to pay higher amounts for them compared to the fees in the public sector. Informal payments were almost non-existent, and exemptions in the private sector rather scarce (Table 24).

Table 24. Outpatient – Price (percent except where otherwise noted)

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Knew amount to pay before service (%)	69	90	74	76	83	95	85
Shown price list (%)	14	47	54	17	44	50	8
Paid staff directly (%)	3	2	0	0	1	3	0
Paid for quicker admission (%)	0	1	1	0	2	3	0
Given drug prescription (%)	98	99	94	100	98	98	99
Given instructions on drugs (%)	91	99	100	97	100	92	96
Got drugs at facility (%)	83	11	64	80	8	62	6
Paid for drugs (%)	0	95	89	0	100	0	100
Drug payment (tk)		225	33	0	161		239
Paid consultation service (%)	1	98	83	0	98	25	80
Consultation payment (tk)	100	86	12	0	148	6	234
Received medical supplies (%)	9	3	4	43	4	10	10
Paid medical supplies (%)	0	100	50	0	25	0	100
Medical supplies payment (tk)		113	9	0	120		51
Received lab test (%)	3	19	9	6	27	18	24
Paid lab test (%)	33	100	90	50	94	43	95
Lab test payment (tk)	20	113	24	98	278	103	217
Received imaging service (%)	1	17	1	3	21	8	13
Paid imaging service (%)	100	100	100	50	96	67	100
Imaging service payment (tk)	200	308	2	150	308	58	433
Asked for exemption (%)	0	32	12	2	14	0	5
Received exemption (%)		80	100	0	73		0
Exemption value (tk)		31	15		100		

Source: Exit poll for outpatients and Facility survey.

Own computations

3.69 **Price list:** More than 10 percent of outpatients were not previously informed on the treatment cost and less than 50 percent were shown a price list. In the case of the private tertiary hospitals only 8 percent were shown a price list. Since treatment is supposed to be free at the public facilities no reference is made to price lists.

3.70 **Informal payments:** In contrast to what other prior studies have indicated, almost no informal payments to facility staff were reported (including direct payments, payments for

quicker admission and gratitude payments). In the few cases where informal payments were reported, the amounts were insignificant.

3.71 Drug prescription and purchase: Close to 100 percent of patients at all levels received drug prescriptions, and more than 90 percent received instructions on their use. In addition, 80 percent of public patients at upazila and district level got the drugs at the facility, while this share was only 60 percent at the public tertiary facilities. None of the public sector patients had to pay for the drugs received. In contrast, about 6-11 percent of private patients who got the drugs at the facility had to pay for them. In fact, the drugs purchased by private sector patients were more expensive than the consultation fee they paid.

3.72 Consultation services: The public upazila and district level patients were treated free of charge, while at the tertiary hospitals, 25 percent of them had to pay a very small fee of 6 Taka compared to 234 Taka at the comparable private hospital. In contrast, 98 percent of the private upazila and district level patients paid for the services, while at the national level only 80 percent paid.

3.73 Medical supplies: All public patients who received medical supplies, got them for free; while all private patients who received medical supplies had to pay, with the exception of the district level facilities, where only 25 percent had to pay. It is interesting to note, that the average price of these supplies was lowest at the national private clinics, less than half of that at the other private facilities.

3.74 Lab tests: Private patients are ordered significantly more lab tests than the public patients, in particular at the upazila and district levels. While between 33 and 50 percent of the public patients have to pay for these exams, in the private sector close to 100 percent of the patients have to pay. In addition, the private sector patients pay prices of between two to five times as high as in the public sector.

3.75 Imaging exams: Private patients are also prescribes significantly more imaging exams than the public sector patients, again in particular at the upazila and district levels. Close to 100 percent of the private patients have to pay for them, while in the public sector interesting differentials exist: at the upazila level all patients have to pay, but at the other two levels the share is between 50 percent and 64 percent. Furthermore, the price differences between the different types of providers are striking at all levels, but especially so at the tertiary facilities where private patients pay about eight times the price of the public patients.

3.76 Exemptions of payments in the private sector: While a third of the private patients at upazila level asked for waivers, this share was only 14 percent at the district and 5 percent at the national levels. More than three quarters of the patients received a waiver, with the exception of the private tertiary hospitals, which did not grant any.

Facility

3.77 Source of funding: As expected, public facilities are mainly financed by the government budget. However, 50 percent of the tertiary public hospitals and 13 percent of Upazila Health Complexes also report of charging user fees. When looking at the fees charged, it can be assumed

that either small administrative fees are charged or that this mention of user fees refers to charges associated with lab tests and imaging exams. The private-for-profit providers, on the other hand, get 100 percent of their funding through user fees, although only 75 percent of private tertiary clinics charge consultation fees. Finally the not-for-profit private providers receive two thirds of their funding from donors or other sources, and finance the remainder of the budget through user fees.

3.78 Follow up consultation fees: The public facilities do not charge a follow-up consultation fee. On the other hand, private providers generally do charge a consultation fee, which tend to be lower at the upazila and district level, while the tertiary clinics mostly tend to charge the same price as for the first visit. The not-for-profit providers in the upazilas also tend to charge a follow-up fee but lower than that of the first consultation.

3.79 Charges for reviewing diagnostic tests: Again, the public sector facilities do not charge for this service, and most of the NGOs (80 percent) also do not charge for this service. In contrast, the private sector clinics do charge, with figures reaching upto ¾ of the facilities at the district and tertiary level.

Table 25. Facility Price Issues (percent)

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Financed with government budget (%)	88	0	0	100	0	100	0
Financed with user fees (%)	13	100	25	0	100	50	100
Financed with donor's/other funds (%)	0	0	63	0	0	0	0
Charge consultation fees (%)	0	100	88	25	100	50	75
Follow-up consultation fees (%):							
o Same as first visit	nd	0	0	0	13	0	67
o Lower than first visit	nd	75	71	0	63	0	33
o In special cases	nd	13	0	100	13	0	0
o None	nd	13	29	0	13	100	0
o Total	nd	100	100	100	100	100	100
Charges for reviewing diagnostic tests (%):							
o Yes	0	36	13	0	75	0	75
o No	86	57	88	67	25	0	25
o Only special cases	14	7	0	33	0	100	0
o Total	100	100	100	100	100	100	100
Criteria used for inpatient fees (%):							
o By disease	0	50	0	0	0	0	0
o Fixed fee per bed	0	38	17	0	100	50	100
o Fixed all inclusive fee	0	13	0	0	0	0	0
o Other	100	0	83	100	0	50	0
o Total	100	100	100	100	100	100	100

Source: Facility survey.

Own computations

3.80 **Median fee charged by type of service:**¹⁶ As can be seen from Table 26, the public sector facilities charge relatively low fees for a certain kind of services, mainly lab-tests and imaging exams, plus a minimal consultation fee (3-5 Taka). The district hospitals only charge for imaging exams. NGOs charge for all services they offer (they did not offer imaging exams, for example) and the amounts charged tend to be twice as high as in the public sector, with the exception of consultation fees where they charge 10 Taka versus only 3 Taka in the UHC.

3.81 The private facilities also charge for all services, with the fees being much higher compared to the other two types of providers. Nevertheless the price differences show variations in the type of service in question. For example, at the upazila level, lab tests are three times as expensive as in the public sector and 50 percent more than in the NGOs. Imaging exams, on the other hand, are only twice as expensive as in the public UHC. At the tertiary level, lab tests and imaging exams (with the exception of ultrasounds which are four times more expensive) are close to twice as expensive in the private sector as in the public sector.

3.82 Looking at the price differences between the private sector providers at different levels, it can be observed that consultation fees at district level cost twice as much as at the upazila and tertiary level. On the other hand, lab tests and imaging exams are only marginally different in their price, with the exception of CBC and ultrasounds which are much more expensive at the national level. More relevant differences are observed in the fees for hospitalization, with the fee for inpatient care at private tertiary hospitals being almost two times higher than that at the district level, and three times higher than at the upazila level private facilities. The fee for normal delivery is relatively similar at national and district level private facilities, but more than 50 percent less expensive at the upazila level. C-sections are least expensive at the private district hospitals and close to twice as expensive at the tertiary clinics. Minor surgery, in contrast, is most expensive at the private district facilities, with tertiary clinic prices being in between the prices found at the district and upazila level.

Table 26. Facility Median Prices (tk)

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Outpatient consultation	3	90	10	4	200	5	100
Follow-up consultation	NA	50	10	NA	100	NA	100
Specialist consultation	3	200	20	NA	200	5	25*
Complete Blood Count	20	90	20	NA	100	30	175
Stool R/M/E test	10	30	20	NA	28	20	35
Urine test	10	30	20	NA	28	20	35
Chest X-ray	54	100	NA	50	120	50	110
Abdomen X-ray	54	100	NA	50	120	50	110
Ultrasounds test	150	350	NA	220	350	160	650
Inpatient day	NA	100	NA	NA	175	NA	300

¹⁶ Median fees were used since the sample is very small and averages could result in distorting the data.

Normal delivery	NA	1000	NA	NA	1500	NA	1750
Cesarean section	NA	5500	NA	NA	4100	NA	7500
Minor surgery	NA	750	50	NA	2400	NA	1750

NA Not available; * Not significant

Source: Facility survey

Own computations

3.83 In sum, the private sector fees are considerably higher than public sector and NGO fees in those services where there is comparison in fees. In addition, there are significant differences in the private sector prices which vary considerably in relation to the level of sophistication and specialization of the particular facility visited.

3.84 **Exemption policies:** More than three quarter of the private facilities at the upazila and district level, including profit and not-for-profit, have in place policies to grant fee exemptions to the patients. However, at the national level, only 50 percent of the facilities have such a policy. Public providers are not considered in this section as they do not charge official fees to the patients for the services under review.

3.85 **Exemption from consultation fees:** At the upazila and district level, 38 and 71 percent facilities respectively grant exemptions for consultation fees. Including also those facilities which grant exemptions under special circumstances, it is found that the majority of the private sector facilities apply exemption policies.

3.86 **Exemption of drugs and medical supply payments:** Again, many private providers provide exemptions for this kind of payments, in particular at the district level.

Table 27. Private Facility Exemption Policy (percent)

	Upazila		District	National
	Private	NGO	Private	Private
Exemption policy (%)	81	75	88	50
Exempted from consultation fees (%):				
o Yes	38	100	71	0
o No	15	0	14	50
o In special circumstances	46	0	14	50
o Total	100	100	100	100
Exempted from drugs and medical supplies (%):				
o Yes	15	67	67	50
o No	46	33	33	0
o In special circumstances	38	0	0	50
o Total	100	100	100	100
Special rate for special cases (%):				
o Yes	19	0	57	50
o No	63	100	29	25
o In special circumstances	19	0	14	25
o Total	100	100	100	100

Costs recovery of exemptions (%):				
o Foregoing income	100	60	100	50
o Receiving grants	0	40	0	0
o Other	0	0	0	50
o Total	100	100	100	100

Source: Facility survey.

Own computations

3.87 **Special rates for special cases:** This mechanism is applied by roughly half the private providers at district and national level in order to accommodate requests for exemptions.

3.88 **Cost recovery:** All private providers at upazila and district level, and half of those at the tertiary level forgo their income in order to cover the cost resulting from granting fee exemptions. In the case of the NGOs, 60 percent forgo their income while 40 percent receive grants which can be used to cover the exemption costs.

IV. Accessibility

Inpatient exit polls

3.89 Generally, public sector patients are much more likely to come from lower income quintiles than the private sector patients. In addition, the fact that more poor people are attended to at the upazila public facilities and more rich people at the national level public hospitals indicates a breach of the horizontal equity objective in the access to health services. Private patients on average tend to travel the same distance or longer than public sector patients, but spend less time and more money on the trips. The waiting time is always longer in the public facilities. The higher the level of care, the bigger the difference. “Hotel services”, in particular the cleanliness, are ranked better in the private sector, while public sector patients are provided with more services (for e.g. meals are provided by public hospitals).

3.90 **Patient distribution according to income terciles:** There is a clear segmentation of patients at public and private facilities at all administrative levels with regard to their income level. Public sector patients are much more likely to come from lower income terciles than private sector patients. At the same time, however, these poor patients seem to represent an important share of the private hospital sector, particularly of low and middle level of complexity (upazila and district level). For example, at the upazila level, poor hospitalized patients (lowest income tercile) represent almost half of all patients, and at the district level they make up for one quarter of the total number of inpatients.

Table 28. Inpatients – Income Terciles and Income in Taka

	Upazila		District		National	
	Public	Private	Public	Private	Public	Private
Terciles of declared per capita income (percent):						
o Low	72	41	50	25	14	1
o Middle	19	41	33	29	64	21

o High	9	18	17	46	22	78
o Total	100	100	100	100	100	100
Per capita income, by tercile (tk):						
o Low	445	470	439	459	451	571
o Middle	816	845	854	880	869	897
o High	3,917	1,868	1,489	2,255	1,306	3,753
o Total	821	878	752	1,405	908	3,114

Source: Exit poll for inpatients.

Own computations

3.91 The effectiveness of targeting public resources increase with the complexity of the public facilities (Table 28). While at the upazila level, the large majority of patients belong to the lowest and middle tercile, at the national level facilities the majority of the patients come from the non-poor group (middle to highest tercile). This is especially worrisome since inpatient costs tend to increase with the complexity of facilities. It can therefore be concluded that there is a substantial leakage of public resources to the non-poor population.

3.92 **Travel distance and time:** Travel distance and time to reach health facilities is practically the same for public and private facilities at the upazila and district level. However, at the national level, private patients travel about 4 times as far and for twice as long as public patients.

3.93 **Means of transportation:** The striking difference in the average travel costs at the national level can be mainly attributed to the fact that three quarters of the patients of private facilities travel by private car versus only one third of the public sector users. The means of transportation used by public and private patients at the upazila and district level are fairly similar.

3.94 **Waiting time:** The waiting time is always longer in the public facilities. The higher the level of attention, the bigger the difference- for instance, at national level facilities public inpatients wait twice as long as private ones. The acceptance of the waiting time is related to its length, thus a little less than half of the public patients at national level find the 34 minutes of waiting time as acceptable. In terms of the hypothetically acceptable waiting time, there is only little difference.

Table 29. Inpatient – Accessibility

	Upazila		District		National	
	Public	Private	Public	Private	Public	Private
Interviews (N)	57	112	48	96	35	72
Distance traveled (km)	9	9	16	15	9	40
Travel time (minutes)	41	38	47	47	31	69
Type of transport (percent):						
o Public bus	5	9	23	25	29	10
o Private motor vehicle	14	22	21	18	24	74
o Bicycle	0	0	4	0	0	0

o Riksha	39	32	38	47	24	13
o On foot	0	1	0	0	3	0
o Other	42	36	15	10	21	4
o Total	100	100	100	100	100	100
Waiting time (minutes)	13	7	27	16	34	16
Percent think waiting time is acceptable	87	96	69	85	42	83
Acceptable hypothetical waiting time (minutes)	21	17	21	26	16	18

Source: Exit poll for inpatients.

Own computations

Outpatient exit polls

3.95 At all administrative levels, the public sector facilities receive a considerably greater share of low income individuals than the private sector facilities, and the ambulatory health care of poorer people are much more concentrated at upazila than at the secondary or tertiary levels. This situation is comparable to that of the inpatients, and indicates problems in terms of equity in the access to health care.

3.96 In terms of access to the facilities, it was found that public patients travel less distance, in slower and less comfortable means of transportation, spending less amount of money but relatively more time (ratio of distance and travel time), than their private counterparts. Surprisingly, the waiting time at upazila and district level is shorter at the public than at the private facilities.

3.97 **Outpatient distribution according to income terciles:** From the following table (Table 30) it can be seen that the public and private sector have very different patterns in the economic profile of their patients. At all administrative levels, the public sector facilities receive a considerably greater share of low income individuals than the private sector facilities.

3.98 Within the public sector, targeting problems seem to increase with the level of complexity- whereas the poorest third of the population represents more than 60 percent of outpatients at the upazila public facilities, it only represents one third of patients at the higher level facilities.

3.99 The two preceding results confirm the findings with respect to inpatients- that is, although the private facilities cater towards the richer segments of the population, the poorest segment also represent an important market share especially at the upazila and district level. Also, leakage of public facilities seems to increase with the complexity of the institutions.

Table 30. Outpatient – Income by terciles

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Terciles of declared per capita income (percent):							
o Low	64	30	42	44	21	30	8
o Middle	28	39	44	41	33	55	21

o High	8	32	13	15	46	15	71
o Total	100	100	100	100	100	100	100
Per capita income, by terciles (tk):							
o Low	375	438	403	443	451	493	451
o Middle	810	825	797	803	872	832	853
o High	1529	2002	1388	2236	2425	1752	3243
o Total	588	1080	708	862	1495	868	2517

Source: Exit poll for outpatients

Own computations

3.100 Travel distance and time: People seeking care at private facilities are willing to travel farther than those going to public facilities- in the case of district and national level hospitals, private sector patients travel almost twice as much as public ones. However, the travel time of private patients is only 25 percent longer than that of public patients at the district and national levels, which mean that these individuals tend to take quicker means of transportation or private facilities are located in more accessible areas.

3.101 Means of transportation: The Rickshaw is the mode of transport most often used by patients across the board. The major differences in the means of transportation are found in the use of buses, private motor vehicles and trips by foot. In general, it can be stated that public patients travel less distance, in slower and less comfortable means of transportation, spending less money but relatively more time (ratio of distance and travel time) than their private counterparts.

3.102 Arrangement of prior appointments: This is more common in the private sector facilities, and is mostly seen to increase with the level of care. However, only half of the private patients with appointments are attended to at the agreed upon time. The public patients at national level facilities are never attended on time while those at the district level are always attended on time.

3.103 Waiting time: The average waiting time at private upazila and district level facilities ranges between 20 and 50 percent and it is longer than at the public entities. The fact that the waiting time at national private facilities is around 40 percent shorter than that at the public hospitals can possibly be explained by the long queue of patients waiting to be seen at these latter facilities.

3.104 Generally a larger share of private patients considers the waiting time to be acceptable, particularly at the national level facilities. The ideally acceptable waiting time indicated by public and private patients does not differ much, and is between 20 and 25 minutes.

Table 31. Outpatients Accessibility

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Total of interviews	90	176	144	66	122	40	80
Distance traveled (km)	3.9	4.8	1.9	5.5	11.3	8.9	16.7
Travel time (minutes)	38	25	16	32	40	46	54

Type of transport (percent):							
○ Public bus	10	12	3	12	32	38	23
○ Private motor vehicle	3	6	7	9	11	15	36
○ Bicycle	1	2	1	2	3	0	0
○ Riksha	33	32	47	52	43	30	36
○ On foot	29	13	35	20	3	5	0
○ Other	23	35	6	6	7	13	5
○ Total	100	100	100	100	100	100	100
Reason for choosing the facility (percent):							
○ Been here before	21	22	45	22	23	40	43
○ Close to home	37	28	18	24	14	20	8
○ Appreciate quality	7	11	10	17	10	5	8
○ Doctor has good reputation	13	23	12	15	22	10	20
○ Referred	14	15	13	19	27	15	23
○ Doesn't know any other facility	3	0	20	2	1	0	0
○ Other	4	1	2	2	3	10	0
○ Total	100	100	100	100	100	100	100
With appointment (%)	1	15	0	8	10	13	19
Attended at appointed time (%)	0	52	Nd	100	58	0	53
Waiting time (minutes)	29	36	12	22	31	53	32
Think waiting time is acceptable (%)	58	66	89	69	64	32	60
Acceptable waiting time (minutes)	23	26	18	21	25	17	20

Source: Exit poll for outpatients. Own computations

Facilities

3.105 Distance to other facilities: At the national level, the distance from the public and private providers studied to alternative health facilities, are practically the same. However, at the district and upazila level, the distance to alternative health providers is considerably shorter from the private facilities studied, than from the public or NGO providers. This pattern may possibly be attributed to the fact that many private providers, in particular the ones at the upazila level, are not officially registered and thus not considered by the public and NGO facilities' staff when reporting on this indicator.

3.106 Type of three closest facilities: The overwhelming majority of the three closest health facilities reported were private at all administrative levels. This means that the private health providers are distributed in a way which makes them more accessible than the public facilities. However, no information was available on the characteristics of these providers in terms of their size, services offered, etc.

3.107 Opening hours: at the upazila level, public facilities and NGOs are generally open for 6 days a week, while all private providers are open throughout the week (i.e. all 7 days). At district level, half of the public and half of private providers open for 6 days, while the other 50 percent are open the whole week around. The vast majority of tertiary hospitals of both types of providers open for 6 days a week, with 25 percent of the private sector attending 7 days.

3.108 In terms of the opening hours, it emerges clearly from the data that the private sector at all levels receives patients for longer hours than the public sector. This is particularly true at the upazila level, where the average opening hours of the private-for-profit sector is 9 hours and in case of the NGOs it is 7.8 hours, whereas it is only 5.6 hours in the public Upazila Health Complexes. This difference in opening hours across different providers is, however, considerably smaller at the district and national levels.

3.109 **Emergency attendance:** A clear difference of providers can be observed with regard to this aspect. While 100 percent of the public providers at all administrative levels attend emergencies during 24 hours and 7 days a week, this applies only for the private tertiary providers. In contrast, at the lower levels, between one half and two thirds of private-for-profit and not-for-profit providers attend emergency situations.

3.110 **Time of patient's visits:** The vast majority of patients come to the facilities in the morning hours. In the public sector all the patients come in the morning, while in the private sector at upazila level four-fifth come in the morning, while at district and national levels 50 percent come in the morning. This pattern is somewhat surprising, since public medical doctors are known to also attend in private consultancies, mainly in the afternoon. It might be the case that patients are coming in the morning but are attended to in the afternoon.

Table 32. Facilities Access

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Distance							
Average distance to three nearest facilities (km)	2,0	0,9	2,3	2,1	1,1	1,6	1,7
Distance to nearest facility most used by patients (km)	1,5	0,7	2,2	2,0	1,6	1,7	1,8
type of three closest facilities (percent):							
o Public	8	31	45	11	33	33	8
o Private	88	67	55	89	67	67	92
o NGO	4	2	0	0	0	0	0
o Total	100	100	100	100	100	100	100
Days per week open (percent):							
o 6 days	88	0	100	50	50	100	75
o 7 days	13	100	0	50	50	0	25
o Total	100	100	100	100	100	100	100
Hours per day open (percent):							
o 24 hours	0	6	0	0	0	0	0
o 12:00 to 23:59 hours	0	13	0	0	0	0	25
o 8:00 to 11:59 hours	0	50	50	0	50	0	0
o 6:00 to 7:59 hours	63	6	50	75	13	100	75
o Less than 6 hours	38	25	0	25	38	0	0
o Total	100	100	100	100	100	100	100
Average hours per day open	5,6	9,0	7,8	5,9	6,9	6,2	7,6
Attends emergencies (percent)	100	75	50	100	63	100	100

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Attends emergencies 24x7 (percent)	100	50	25	100	63	100	100
Time most patients come (percent):							
o Morning	100	79	100	100	50	100	50
o Lunch time	0	7	0	0	0	0	0
o Afternoon	0	7	0	0	50	0	25
o No significant difference during the day	0	7	0	0	0	0	25
o Total	100	100	100	100	100	100	100

Source: Facility survey.
Own computations

V. Cost

3.111 The tables in this section show the direct unit costs calculated for the six selected services (Tables 33 - 38). The costs have been disaggregated by type of input. For a breakdown of each input, see Annexes A and B.

3.112 **Building costs:** For all outpatient services, at all levels of service, the tendency is for public facilities to have higher building costs than private facilities. An analysis of the unit input costs (Annex B) shows that the higher costs in public facilities are a direct consequence of them using a larger area per “consultation box”. NGO facilities also show relatively high building costs. However, in their case this is caused by higher rental values instead of larger areas for consultation as seen in the public facilities.

3.113 **Labor costs:** At the upazila and district levels, labor costs appear to be higher in public facilities than in private ones. This seems to be a direct consequence of the lower salaries and benefits seen in the private sector (Annex B) at these levels. At the national level, however, the presence of more experienced and qualified personnel in private facilities make labor costs sometimes higher than in public facilities. NGO facilities experience relatively low labor costs because they tend to use less expensive and less qualified staff for the simpler outpatient activities.

3.114 **Drugs and exam costs:** In this study, a unique set of drug and exam prices (Annex B) is assigned to all facilities, regardless of their level or type. Therefore, any difference in costs must arise from differences in the quantity and mix of drugs and exams used in the delivery of health services. In most cases public facilities spend less in drugs and exams than private facilities. NGO facilities spend even less in exams, but may have high levels of drug use.

Table 33. ARI Direct Unit Costs

		Upazila		District		National		NGO
		Public	Private	Public	Private	Public	Private	
1	Total (tk) (2+3+4+5)	33.3	31.8	32.4	66.6	66.4	66.5	19.4
	By type of input (tk)							
2	Building (8)	0.2	0.1	0.2	0.1	0.1	0.1	0.1
3	Labor (16)	8.2	5.4	6.4	5.7	6.2	6.0	2.3
4	Drugs (46)	5.8	6.9	6.5	18.2	9.1	12.2	6.1
5	Exams (57)	19.1	19.4	19.2	42.6	51.0	48.1	10.9

Source: Direct observation surveys.
Own computations

Table 34. Antenatal Care Direct Unit Costs

		Upazila		District		National		NGO
		Public	Private	Public	Private	Public	Private	
1	Total (tk) (2+3+4+5)	116.1	262.1	178.9	117.3	284.8	365.2	107.1
	By type of input (tk)							
2	Building (8)	0.3	0.2	0.5	0.1	0.2	0.1	0.4
3	Labor (16)	12.0	7.4	12.4	5.1	5.1	8.7	4.2
4	Drugs (46)	37.2	32.6	5.5	0.0	0.0	9.6	67.6
5	Exams (57)	66.7	221.9	160.5	112.0	279.4	346.8	35.0

Source: Direct Observation Surveys.
Own computations

Table 35. Hypertension Direct Unit Costs

		Upazila		District		National		NGO
		Public	Private	Public	Private	Public	Private	
1	Total (tk) (2+3+4+5)	90.9	151.3	150.8	156.9	533.6	612.0	45.3
	By type of input (tk)							
2	Building (8)	0.2	0.2	0.3	0.1	0.2	0.1	0.4
3	Labor (16)	13.2	5.2	7.0	4.9	2.0	6.4	5.0
4	Drugs (46)	3.8	35.5	0.9	1.3	1.5	426.1	34.6
5	Exams (57)	73.7	110.4	142.6	150.7	529.9	179.4	5.3

Source: Direct observation survey
Own Computations

Table 36. Cesarean Section Direct Unit Costs

		Upazila		District		National	
		Public	Private	Public	Private	Public	Private
1	Total (tk)	879.7	615.2	906.5	435.6	403.2	1.182.0

	(2+3+4+5)						
	By type of input (tk)						
2	Building (8)	76.4	67.4	66.4	41.0	24.2	13.9
3	Labor (16)	585.8	92.6	244.4	100.0	174.4	140.1
4	Drugs (46)	78.5	262.1	291.0	34.2	167.1	557.5
5	Exams (57)	138.9	193.1	304.6	260.4	37.5	470.6

Source: Direct observation survey.

Own computations

Table 37. Normal Delivery Direct Unit Costs

		Upazila		District		National	
		Public	Private	Public	Private	Public	Private
1	Total (tk) (2+3+4+5)	226.9	331.2	274.4	194.6	259.2	710.3
	By type of input (tk)						
2	Building (8)	16.7	97.4	40.1	20.3	36.5	31.1
3	Labor (16)	51.0	31.0	84.9	24.8	69.4	46.3
4	Drugs (46)	69.4	37.8	95.0	81.3	57.1	476.9
5	Exams (57)	89.7	165.1	54.5	68.1	96.2	156.0

Source: Direct Observation Surveys.

Own computations

Table 38. Severe Diarrhea Direct Unit Costs

		Upazila		District		National	
		Public	Private	Public	Private	Public	Private
1	Total (tk) (2+3+4+5)	52.4	115.9	69.5	114.9	85.8	204.7
	By type of input (tk)						
2	Building (8)	6.0	10.4	11.0	6.5	3.5	4.1
3	Labor (16)	9.3	3.3	11.3	4.0	5.6	5.8
4	Drugs (46)	37.1	42.2	47.2	45.8	76.7	84.4
5	Exams (57)	0.0	60.1	0.0	58.6	0.0	110.5

Source: Direct observation survey.

Own computations

VI. Value

Inpatients

3.115 With regard to the value attributed to the different providers, there is a strong preference of public patients for public facilities and of private patients for private facilities, thus indicating

a clear space for “market segmentation”. However, private patients are less satisfied with the quality-price relation and are more often met with higher than expected prices.

3.116 Price and expectations: Close to 100 percent of the public sector patients considered the price paid as expected or lower than expected, the latter in particular at the upazila level. On the other hand, only around two-thirds of the private sector patients considered the price as expected, while a third at national clinics and one half at the district level considered the price to be higher than expected.

3.117 Service received and expectations: Roughly two thirds of all patients declared that the service met their expectations, and there are no significant differences between the levels of administration and types of health providers, with the exception of private national hospitals which registered the most number of satisfied patients (78 percent).

3.118 Quality – price relationship: While at the upazila level more private sector patients than public sector patients think that the cost–price relationship is adequate (71 percent versus 54 percent), this relation is inverted at the district and national level, although with a smaller differential.

3.119 Type of facility where the patient had been seen before: For more than half of the public sector patients (three quarters at the UHC level) this particular hospitalization was the first hospital visit, while the same is true for only a third of the private patients. Most of all the prior hospital visits, both for public and private sector patients, had taken place in private facilities. The only exception was the public national level patients who had also been in public facilities before.

3.120 Type of facility that would be chosen for next visit: The first set of results show that public sector patients prefer to return to a public facility, preferably the same one just used. Similarly, the private sector patients prefer to return to the same private facilities as well. The only exception is the public national level facilities, where two-thirds would return to the same facility but the other third would rather go to a private facility. The second set of results show that, both public and private patients are less satisfied with the facilities at district level, as only one-half would return to the same facility as opposed to two-thirds at the other two administrative levels.

Table 39. Inpatient – Value (percent)

	Upazila		District		National	
	Public	Private	Public	Private	Public	Private
Price paid was:						
○ Lower than expected	42	13	15	2	7	4

	Upazila		District		National	
	Public	Private	Public	Private	Public	Private
o As expected	56	71	81	52	89	63
o Higher than expected	2	16	4	46	4	33
o Total	100	100	100	100	100	100
Service met expectations:						
o Yes	63	71	63	68	60	78
o More or less	33	29	35	30	34	19
o No	4	0	2	2	6	3
o Total	100	100	100	100	100	100
Think quality/price relationship is adequate:						
o Yes	54	71	65	56	89	82
o More or less	42	28	33	40	6	17
o No	4	1	2	4	6	1
o Total	100	100	100	100	100	100
Been seen in another facility before:						
o Public	5	28	15	28	31	17
o Private	18	41	27	35	23	49
o Doesn't know	2	0	0	1	0	0
o Not seen by another doctor	75	31	58	35	46	35
Which facility would patient choose for next visit (percent):						
o Same facility	67	63	52	53	71	71
o Another private one	12	23	17	32	26	19
o Another public one	16	7	23	4	0	3
o Does not matter/No preference	5	6	8	10	3	7
o Total	100	100	100	100	100	100

Source: Exit poll for outpatients.

Own computations

Outpatients

3.121 In contrast to the inpatients, preferences of public outpatients for public or private sector facilities are varied, while private outpatients clearly prefer private facilities. Public outpatients are more likely to perceive the price paid as lower than expected and private ones to be higher. However, private outpatients are more satisfied with the quality-price relation.

3.122 **Price and expectations:** Most public and private outpatients at all levels considered that the price paid was as expected. However, about a third of the patients in the public sector said the price was lower than expected, while on average only around 14 percent of the private patients had this impression. In fact, more than 20 percent of the private outpatients on average, felt that the price was higher than expected, while this perception was almost non-existent in the public sector (between 0 and 5 percent).

3.123 Service received and expectations: At upazila and district levels, no significant differences could be found between the satisfaction of public and private patients regarding the service received. However, at the tertiary facilities 86 percent of private patients claimed that the service received met with their expectation, against only 53 percent in the public sector.

3.124 Quality price relationship: The quality–price relationship is perceived to be more adequate in the private sector facilities (particularly at the tertiary level), with the notorious exception of the district level where the public district hospitals are much better ranked than their private counterparts. Patients’ satisfaction with this aspect is considerably lower at the upazila level public facilities than at the other administrative levels.

3.125 Reason for choosing the facility: Acquaintance with the facility plays an important role for public and private sector patients for choosing the particular facility. At the national level this is the most important reason for choosing a facility- around 40 percent. It is important to note that, the appreciation for quality plays a minor role in the patients’ decision on choosing a specific facility for outpatient services. This is true for all facilities across all levels, with the exception of the public district hospitals where it is considered to be slightly more important (17 percent). On the other hand, the doctor’s reputation does play an important role in the choice of the hospital, more so in the private sector than in the public sector. In addition, at all levels, the share of patients who value the proximity of the facility to their homes is 10 percent higher among the public sector patients.

3.126 Type of facility that would be chosen for next visit: In general, private sector outpatients at all levels would either return to the same facility or go to another private facility but would not like to go to the public sector, with the exception of the upazila level where 11 percent of the private patients would also prefer to go to a public facility.

3.127 On the other hand public sector patients have more varied preferences. While at the upazila level, half of them would return to the same facility, another third would prefer a private facility and 16 percent would rather go to another public facility. At the district hospital level, the preference for the public sector is even clearer with four-fifth of the patients preferring public facilities for the next visit. However, at the tertiary level the situation is quite different with almost half of the patients preferring to go to a private facility for the next consultation.

Table 40. Outpatient – Value (percent)

	Upazila			District		National	
	Public	Private	NGO	Public	Private	Public	Private
Price paid was:							
o Lower than expected	34	11	49	45	10	21	21
o As expected	65	72	51	55	58	74	60
o Higher than expected	2	17	1	0	32	5	19
o Total	100	100	100	100	100	100	100
Service met expectations:							
o Yes	64	69	70	73	62	53	86
o More or less	29	31	30	24	36	30	10
o No	7	0	0	3	2	18	4
o Total	100	100	100	100	100	100	100
Think quality/price relationship is adequate:							
o Yes	55	64	69	83	57	73	90
o More or less	42	35	31	17	37	20	10
o No	3	1	0	0	7	7	0
o Total	100	100	100	100	100	100	100
Visit facility for 1st time	29	55		34	59	45	36
Reason for choosing the facility:							
o Been here before	21	22	45	22	23	40	43
o Close to home	37	28	18	24	14	20	8
o Appreciate quality	7	11	10	17	10	5	8
o Doctor has good reputation	13	23	12	15	22	10	20
o Referred	14	15	13	19	27	15	23
o Doesn't know any other facility	3	0	0	2	1	0	0
o Other	4	1	2	2	3	10	0
o Total	100	100	100	100	100	100	100
Which facility would choose:							
o Same facility	47	60	72	65	61	55	80
o Another private one	32	24	21	14	30	45	18
o Another public one	16	11	4	20	4	0	1
o Does not matter/No preference	6	4	3	2	4	0	1
o Total	100	100	100	100	100	100	100

Source: Exit poll for outpatients.

Own computations

Chapter 4. Conclusions and Policy Recommendations

This chapter contains information from different sections of the study and suggests strategies at both the sectoral policy level and facility management level to assist the Government of Bangladesh in its attempt to get value for money in scaling up the MOHFW's financing role as purchaser of health services from the private sector.

4.1 The goal of this study is to provide new evidence on the comparative advantage of public and private providers in order to explore the GOB's alternatives regarding which health services it should purchase from the private sector, if any. A number of studies have already been carried out on the involvement of the private sector in public provision of health services. The methodology and scope of this study have taken into account these previous investigations in order to provide additional information to that already available.

4.2 The findings of this study are intended to be of use to policy makers, GOB officials and health service providers. Important recommendations may be drawn for national policy where results suggest that there could be potential benefits, in terms of value in purchasing some health services and also for facility management where data show that private providers keep less medical records than public ones. The following table presents a summary of findings from the study. Then a summary of conclusions and recommendations deemed relevant to providers and GOB officials is presented, followed by a set of policy-oriented recommendations.

Table 40a. Summary of Findings

Type of service	Identified Strengths / weaknesses					
	Cost	Perceived Quality	Technical quality	Subjective Performance	Accessibility	Price
Public	Lowest costs found at the national level. Highest costs found at the district level	Lowest perceived quality scores	Slightly lower technical quality than private facilities, increasing with level		From the facility and patient standpoints, they have the lowest accessibility scores	Lowest prices at all levels
Private	Lowest costs found at the district level. Highest costs found at the national level	Best perceived quality scores at all levels	Technical quality increasing with level		High levels have higher accessibility scores from the facility's standpoint, but lower scores from the patient's standpoint	Highest prices at all levels, increasing with the level of attention
NGO	Shows a similar cost than private and public facilities at the upazila level	Best perceived quality scores at the upazila level	Best technical quality scores	Best subjective performance scores	Have the highest accessibility score from the patient's standpoint	Low prices

Source: Authors

I. Facility Management

4.3 Some public providers provide very low levels of diagnostic explanation to the patients. Since an adequate explanation of the diagnosis helps the patients to understand the problem better and is considered to be an important determinant of good quality care, it is recommended that public facilities look into reducing this gap. Public providers also rank lower in terms of: (1) the courtesy of their staff, (2) the cleanliness of their facilities and (3) the availability of some inputs such as electricity generators. These are areas in which public facilities may seek for improvements. Finally, public facilities show significant gaps in training, particularly with respect to private and NGO providers.

4.4 At the Upazila Health Complexes, maintenance of the facilities and the use of medical treatment protocols are lower than in the private and higher level facilities. Further investigations should be made on the causes for a low maintenance and on the lack of use of protocols.

4.5 With regards to the observed inpatient services, cesarean sections and normal deliveries showed relatively good technical quality in public facilities, but the private ones have lower waiting times. Severe diarrhea, however, demonstrates the need for the dissemination of more medical treatment protocols in both the public and private sectors.

4.6 With regards to the observed outpatient services, private and NGO facilities present better use of records, exams and indications. Also, building costs and labor costs are lower at private facilities as they use less space per service delivered and pay lower salaries and benefits to staff.

II. Policy Recommendations

4.7 Quality indicators follow an anticipated pattern. Higher level facilities deliver technically better services as the higher complexity of services inherent in these facilities affects objective measures of quality. However, perceived quality remains more or less unaffected because it is relative to subjective (or “expected”) appreciation, and patients will not “expect” the same quality from upazila level and national level facilities. Another anticipated pattern is that of private facilities as opposed to public ones. Private facilities may attempt to attract a larger clientele by improving quality aspects of their service, especially those affecting patients’ perceptions. This is especially true at the national level, where medical staff is more experienced and qualified. NGO facilities exhibit particularly interesting results, obtaining higher technical scores than private or public facilities at the upazila level.

4.8 Prices (i.e., user fees) also behave as expected. Fees are low or absent in the public sector, whereas fees in the private sector reflect the cost of the services (though the costing methodology does not allow drawing conclusions on the level of profits earned by private providers). This raises the question of why many users prefer private facilities over public ones, in spite of the higher prices in the former. Both better quality and better accessibility might be contributing to this trend. However, accessibility differences are not conclusive between private and public providers. With the evidence at hand, it may be argued that users’ preference for private services is mainly due to quality more than accessibility issues.

4.9 In fact, accessibility is highly related to the level of the facility, but not to its ownership. Patients find it easier to access lower level facilities because of their proximity, while higher-level providers offer certain facilities which enhance access conditions. For example, even though national level facilities might be harder to reach, they provide longer service hours, better accessibility to drug shops and other medical inputs and facilities.

4.10 In the pursuit of integrating the performance indicators, and providing an overall view of the comparative advantages of the different types of health care providers, the concept of value is devised. The main findings in regards to value from the user's perspective are: (1) public facilities tend to deliver services of lower quality than private facilities, but at a much lower price; and (2) NGO facilities show some of the best performances.

4.11 With regards to value from the provider's perspective, the influence of costs on service quality is mixed. On one hand, building and labor costs are higher in public facilities, but on the other hand, drug and exam costs are higher in private facilities. This might explain the differences seen in quality, since the higher building and labor costs witnessed in the public facilities do not necessarily seem to lead to more physical space or staff capability, but rather appears to be related to underutilization of physical and human resources. On the contrary, drugs and exams could certainly account for quality improvement (albeit excluding spurious drugs and exams). However, it is important to note that eventual inefficiencies in building and labor inputs in the public sector affects only marginally the total unit costs since exams and drugs account for the largest share of these costs.

4.12 In conclusion, evidence shows that at the upazila level there are definite good prospects for contracting-out health services to the NGOs as they are found to provide the best value indicators, as well as the best accessibility indicators from the perspective of patients. However, the scope of health services which may be purchased from NGOs might remain limited for the time-being to preventive, promotional or simple curative services as offered by the NGOs studied in this report.

4.13 At the district level, evidence on the benefits of contracting-out is not conclusive. No clear tendencies appear in terms of quality and cost of district facilities, but prices are certainly higher in the private sector. This means that contracting-out services at the district level is not necessarily viable.

4.14 At the national level, the possibility of contracting-out has the prospect of improving quality of health care. As the derived value shows, private facilities at the national level consistently presents better quality scores than public facilities, that is for all the six services observed (see Annex C). However, this decision would inevitably come together with a higher provision cost.

4.15 Finally, this study identifies the need for the GOB to undertake certain initiatives in the following areas:

- Guaranteeing the quality of service delivery in the public sector, reducing the gap in medical treatment protocols, improving cleanliness, etc;

- Guaranteeing the structural quality of public health facilities, improving their maintenance status and infrastructure;
- Implementing a quality control system for both the public and private sectors;
- Implementing a certification system for private-for-profit and NGO facilities;
- Working closely with NGOs to better understand the factors leading to their good performance indicators;
- Assessing the costs (administrative, political, etc.) involved in any eventual contracting-out initiative considered.

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Annexes

Annex 1. Breakdown of Unit Costs

Table A.1.1 Breakdown of costs related to ARI consultation

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Mean duration of consultation (min)	14	13	14	12	15	14	6	15	12	13
Median duration of consultation (min)	13	13	13	10	13	12	6	15	13	13
Labor (Average number of professionals present during service)										
Doctor	0,9	0,9	0,9	0,8	1,0	0,9	1,0	1,0	1,0	0,4
Nurse	0,2	0,2	0,2	0,1	0,0	0,0	0,0	0,1	0,1	0,2
Other	0,1	0,2	0,2	0,4	0,3	0,3	0,1	0,0	0,0	0,8
Total	1,2	1,3	1,2	1,3	1,3	1,3	1,1	1,1	1,1	1,4
Mean direct medical labor cost of consultation (tk)										
Doctor	4,7	4,6	4,6	4,3	5,4	5,0	2,2	6,5	4,9	3,6
Nurse	2,7	0,3	1,1	0,5	0,0	0,2	0,0	0,3	0,2	0,5
Other	1,1	0,5	0,7	0,7	0,3	0,4	0,1	0,0	0,0	1,6
Total	8,4	5,4	6,4	5,6	5,7	5,6	2,3	6,7	5,1	5,7
Drugs (Average amount given)										
Aspirin (mg)										

Source: The Authors

Table A.1.2 Breakdown of drug costs related to ARI consultation

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Mean number of drug units given										
Amoxicillin (Sus)	14	42	23	15	0	15	0	21	21	21
Cefpodoxime (Sus)	0	0	0	0	0	0	0	0	0	21
Cephadrine (Sus)	0	35	35	0	49	49	0	39	39	21
Co-trimoxazole (Tab)	19	0	19	0	0	0	0	0	0	0
Co-trimoxazole (Sus)	19	0	19	0	0	0	13	0	13	17
Ceftriaxone (Inj)	0	7	7	0	0	0	0	0	0	0
Chlorpheniramine (Sus)	15	0	15	0	0	0	10	32	24	0
Erythromycin (Sus)	0	0	0	60	0	60	0	0	0	0
Metronidazole (Tab)	0	0	0	21	0	21	0	0	0	0
Multivitamin (Tab)	0	0	0	0	0	0	0	90	90	0
Normal Saline (Oth)	0	0	0	0	0	0	0	48	48	0
Paracetamol (Sus)	12	28	20	120	21	95	54	20	35	18
Salbutamol (Sus)	15	13	14	90	51	64	35	20	24	16
Zinc Sulphate (Sus)	0	0	0	0	0	0	0	20	20	0
Mean direct cost in drugs (tk)										
Amoxicillin (Sus)	0,6	0,5	0,5	0,5	0,0	0,2	0,0	0,4	0,3	0,3
Cefpodoxime (Sus)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	7,4
Cefradine (Sus)	0,0	4,3	2,7	0,0	5,6	3,7	0,0	14,3	9,2	2,0
Co-trimoxazole (Tab)	2,0	0,0	0,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Co-trimoxazole (Sus)	0,7	0,0	0,3	0,0	0,0	0,0	1,1	0,0	0,4	1,0
Ceftriaxone (Inj)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Chlorpheniramine (Sus)	0,4	0,0	0,1	0,0	0,0	0,0	0,2	0,7	0,6	0,0
Erythromycin (Sus)	0,0	0,0	0,0	5,2	0,0	1,8	0,0	0,0	0,0	0,0
Metronidazole (Tab)	0,0	0,0	0,0	0,4	0,0	0,2	0,0	0,0	0,0	0,0
Multivitamin (Tab)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,9	0,6	0,0
Normal Saline (Oth)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,7	0,4	0,0
Paracetamol (Sus)	0,4	0,4	0,4	5,9	0,2	2,1	1,1	0,9	1,0	1,2

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Salbutamol (Sus)	0,6	0,4	0,5	2,6	1,5	1,9	2,4	1,9	2,1	0,8
Zinc Sulphate (Sus)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,5	0,3	0,0
Total (31+...+44)	4,7	5,6	5,2	14,5	7,3	9,8	4,8	20,3	14,8	12,6
Adjusted total (45 +25%)	5,8	6,9	6,5	18,2	9,1	12,2	6,1	25,4	18,5	15,8

Source: The Authors

Table A.1.3 Breakdown of ARI exam and laboratory cost

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Mean number of exams done:										
Chest x-ray, C X R	1	4	5	2	6	8	1	12	13	4
Blood CBC	2	2	4	1	4	5	0	8	8	3
Urine R/M/E	0	0	0	1	0	1	0	2	2	1
Fasting blood sugar	0	0	0	1	1	2	0	0	0	1
Stool R/M/E	0	0	0	1	0	1	0	1	1	1
Mean direct cost in exams (tk):										
Chest x-ray, C X R	6,0	13,6	10,9	18,0	28,3	24,8	10,9	72,1	50,2	0,0
Blood CBC	13,1	5,8	8,4	9,8	19,3	16,1	0,0	51,5	33,1	0,0
Urine R/M/E	0,0	0,0	0,0	4,5	0,0	1,6	0,0	6,0	3,9	0,0
Fasting blood sugar	0,0	0,0	0,0	6,4	3,3	4,4	0,0	0,0	0,0	0,0
Stool R/M/E	0,0	0,0	0,0	3,9	0,0	1,3	0,0	2,6	1,7	0,0
Total (52+...+56)	19,1	19,4	19,2	42,6	51,0	48,1	10,9	132,2	88,9	0,0

Source: The Authors

Table A.1.4 Breakdown of costs related to Antenatal Care consultation

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Mean duration of consultation (min)	20	16	17	22	17	19	14	17	16	13
Median duration of consultation (min)	18	15	15	18	15	15	13	15	15	12
Mean direct cost in building (tk)	0,3	0,2	0,2	0,5	0,1	0,2	0,2	0,1	0,1	0,4
Mean number of professionals present during consultation:										
Doctor	0,8	0,9	0,8	0,8	1,0	0,9	1,0	1,2	1,1	0,2
Nurse	0,1	0,3	0,2	0,2	0,1	0,1	0,0	0,1	0,0	0,2
Other	0,6	0,2	0,3	0,4	0,2	0,2	0,0	0,3	0,2	1,0
Total	1,5	1,3	1,4	1,4	1,2	1,3	1,0	1,5	1,3	1,5
Mean direct medical labor cost of consultation (tk):										
Doctor	6,7	6,5	6,6	10,2	4,9	6,6	5,1	8,3	7,2	1,5
Nurse	0,7	0,6	0,6	1,1	0,0	0,4	0,0	0,1	0,1	0,6
Other	4,6	0,3	1,7	1,1	0,1	0,4	0,0	0,8	0,5	2,3
Total	12,0	7,4	8,9	12,4	5,1	7,5	5,1	9,2	7,8	4,4

Source: The Authors

Table A.1.5 Breakdown of drug costs related to Antenatal Care

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Mean number of drug units given:										
Allumin.Hydroxide (Tab)	14	0	14	0	0	0	0	0	0	14
Ciprofloxacin (Tab)	0	14	14	0	0	0	0	0	0	0
Calcium Carbonate (Tab)	64	88	73	0	0	30	30	36	36	64
Diazepam (Tab)	0	0	0	0	0	0	0	9	9	0
Ferrous Sulphate (Tab)	23	0	23	0	0	0	0	0	0	23
Ferrous Sulphate (Cap)	0	88	88	0	0	30	30	30	30	0
Folic Acid (Tab)	176	0	176	0	0	0	0	30	30	176

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Ferrous Fumarate (Tab)	0	0	0	120	120	0	0	105	105	120
Multivitamin (Tab)	0	30	30	0	0	0	0	30	30	0
Omeprazole (Cap)	0	0	0	0	0	0	0	17	17	0
Paracetamol (Tab)	0	0	0	0	0	0	0	18	18	0
Ranitidine (Tab)	0	45	45	0	0	0	0	33	33	0
Vitamin-B complex (Tab)	26	132	61	60	60	30	30	30	30	37
Zinc Sulphate (Cap)	0	49	49	0	0	30	30	0	0	0
Z.Sul+Fe.Sul+ F.Acid (Cap)	0	0	0	0	0	0	0	30	30	0
Mean direct cost in drugs (tk)										
Aluminium Hydroxide (Tab)	0,6	0,0	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Ciprofloxacin (Tab)	0,0	0,8	0,6	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Calcium Carbonate (Tab)	23,9	11,0	15,3	0,0	0,0	0,0	0,0	3,2	2,1	17,2
Diazepam (Tab)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1
Ferrous Sulphate (Tab)	0,8	0,0	0,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Ferrous Sulphate (Cap)	0,0	0,3	0,2	0,0	0,0	0,0	0,0	0,2	0,1	0,5
Folic Acid (Tab)	2,8	0,0	0,9	0,0	0,0	0,0	0,0	0,0	0,0	0,1
Ferrous Fumarate (Tab)	0,0	0,0	0,0	1,9	0,0	0,6	0,0	0,0	0,0	2,8
Multivitamin (Tab)	0,0	0,2	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,2
Omeprazole (Cap)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	20,6
Paracetamol (Tab)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,2
Ranitidine (Tab)	0,0	4,8	3,2	0,0	0,0	0,0	0,0	0,0	0,0	11,2
Vitamin B complex (Tab)	1,6	2,1	1,9	2,5	0,0	0,8	0,0	0,8	0,5	0,3
Zinc Sulphate (Cap)	0,0	6,9	4,6	0,0	0,0	0,0	0,0	3,6	2,3	0,0
Z.Sul+Fe.Sul+ F.Acid (Cap)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,8
Total (32+...+46)	29,7	26,1	27,3	4,4	0,0	1,4	0,0	7,7	5,0	54,0
Adjusted total (47 +25%)	37,2	32,6	34,1	5,5	0,0	1,8	0,0	9,6	6,3	67,6

Source: The Authors

Table A.1.6 Breakdown of exam and laboratory costs related to Antenatal Care

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Blood CBC	1	9	10	2	3	5	0	3	3	0
Urine R/M/E	4	15	19	7	6	13	3	8	11	7
Ultrasound (USG)	1	6	7	1	5	6	5	11	16	0
Random blood sugar (RBS)	0	4	4	1	2	3	1	0	1	2
HBsAg	1	7	8	1	0	1	0	3	3	0
Fasting blood sugar	0	0	0	0	0	0	0	2	2	0
BA Meal for X ray	0	1	1	0	0	0	0	0	0	0
VDRL	1	4	5	3	1	4	1	2	3	0
Blood grouping	1	6	7	3	1	4	0	4	4	7
Hb%	1	3	4	1	1	2	1	3	4	0
ESR	0	0	0	0	0	0	1	0	1	0
Pregnancy test	0	0	0	1	0	1	0	2	2	0
Blood C/S	0	0	0	0	0	0	2	0	2	0
Mean direct cost in exams (tk):										
Chest x-ray, C X R	0,0	3,4	2,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Blood CBC	7,3	27,5	20,8	19,6	12,1	14,5	0,0	18,5	12,2	0,0
Urine R/M/E	13,6	24,5	20,9	31,4	12,6	18,7	15,2	22,3	19,9	13,1
Ultrasound (USG)	25,6	67,5	53,5	28,6	74,0	59,3	198,0	212,8	207,7	0,0
Random blood sugar (RBS)	0,0	10,1	6,7	4,5	4,3	4,3	10,8	0,0	3,7	3,7
HBsAg	6,0	41,5	29,7	21,7	0,0	7,0	0,0	32,4	21,2	0,0
Fasting blood sugar	0,0	0,0	0,0	0,0	0,0	0,0	0,0	8,1	5,3	0,0
BA Meal for X ray	0,0	9,4	6,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0
VDRL	3,7	13,6	10,3	20,4	2,4	8,2	12,6	13,2	13,0	0,0
Blood grouping	4,3	15,2	11,6	19,7	2,8	8,3	0,0	16,1	10,5	18,2
Hb%	6,2	9,1	8,1	8,2	3,9	5,3	9,8	15,3	13,4	0,0
ESR	0,0	0,0	0,0	0,0	0,0	0,0	3,0	0,0	1,0	0,0
Pregnancy test	0,0	0,0	0,0	6,4	0,0	2,1	0,0	8,1	5,3	0,0
Blood C/S	0,0	0,0	0,0	0,0	0,0	0,0	30,0	0,0	10,3	0,0

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Total (63+...+76)	66,7	221,9	170,2	160,5	112,0	127,7	279,4	346,8	323,6	35,0

Table A.1.7 Breakdown of costs related to Hypertension consultation

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Mean duration of consultation (min)	17	15	16	15	14	14	7	16	13	13
Median duration of consultation (min)	15	12	12	15	12	14	7	15	10	13
Mean direct cost in building (tk)	0,2	0,2	0,2	0,3	0,1	0,2	0,2	0,1	0,1	0,4
Mean number of professionals present during consultation										
Doctor	1,0	1,0	1,0	0,8	0,9	0,9	1,0	1,0	1,0	0,4
Nurse	0,1	0,1	0,1	0,1	0,0	0,0	0,0	0,1	0,0	0,2
Other	0,3	0,2	0,2	0,4	0,5	0,5	0,0	0,0	0,0	0,7
Total	1,4	1,3	1,3	1,3	1,4	1,4	1,0	1,1	1,0	1,3
Mean direct medical labor cost of consultation (tk)										
Doctor	8,7	4,8	6,1	5,2	4,8	4,9	2,3	6,3	5,0	2,8
Nurse	1,1	0,1	0,4	0,4	0,0	0,1	0,0	0,1	0,1	0,4
Other	3,4	0,3	1,4	1,3	0,3	0,6	0,0	0,0	0,0	1,7
Total	13,2	5,2	7,9	7,0	5,1	5,7	2,3	6,4	5,1	5,0

Source: The Authors

Table A.1.8 Breakdown of drug costs related to Hypertension

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Mean number of drug units given:										
Amlodipine (Tab)	0	0	0	10	30	20	0	34	34	15
Atenolol (Tab)	0	10	10	0	0	0	0	30	30	29
Allumin.Hydroxide (Tab)	6	0	6	0	0	0	0	0	0	0
Aspirin (Tab)	0	0	0	0	0	0	80	0	80	0

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Clobazam (Tab)	0	0	0	0	0	0	0	0	0	17
Diazepam (Tab)	16	7	12	0	0	0	15	10	13	0
Frusimide (Tab)	30	0	30	0	0	0	0	30	30	0
Losartan Potassium (Tab)	0	14	14	0	0	0	0	30	30	0
Multivitamin (Tab)	0	0	0	0	0	0	0	30	30	0
Nifedipine (Tab)	30	30	30	0	0	0	0	45	45	30
Omeprazole (Cap)	0	0	0	0	0	0	0	38	38	11
Paracetamol (Tab)	6	9	7	0	0	0	0	0	0	0
Ranitidine (Tab)	0	60	60	0	0	0	0	41	41	0
Vitamin-B complex (Tab)	0	30	30	0	0	0	0	30	30	0
Mean direct cost in drugs (tk):										
Amlodipine (Tab)	0,0	0,0	0,0	0,7	1,1	0,9	0,0	12,4	8,1	0,7
Atenolol (Tab)	0,0	0,2	0,1	0,0	0,0	0,0	0,0	3,0	2,0	5,3
Aluminium Hydroxide (Tab)	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Aspirin (Tab)	0,0	0,0	0,0	0,0	0,0	0,0	0,9	0,0	0,3	0,0
Clobazam (Tab)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	7,5
Diazepam (Tab)	1,1	0,1	0,4	0,0	0,0	0,0	0,4	0,1	0,2	0,0
Furosemide (Tab)	0,5	0,0	0,2	0,0	0,0	0,0	0,0	0,5	0,3	0,0
Losartan (Tab)	0,0	24,5	16,1	0,0	0,0	0,0	0,0	203,4	133,0	0,0
Multivitamin (Tab)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,9	0,6	0,0
Nifedipine (Tab)	1,2	0,6	0,8	0,0	0,0	0,0	0,0	3,6	2,3	1,1
Omeprazole (Cap)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	105,5	69,0	13,2
Paracetamol (Tab)	0,1	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Ranitidine (Tab)	0,0	2,8	1,8	0,0	0,0	0,0	0,0	10,9	7,1	0,0
Vitamin B complex (Tab)	0,0	0,2	0,2	0,0	0,0	0,0	0,0	0,4	0,3	0,0
Total (31+...+44)	3,0	28,4	19,8	0,7	1,1	0,9	1,2	340,9	223,3	27,7
Adjusted total (45 +25%)	3,8	35,5	24,7	0,9	1,3	1,2	1,5	426,1	279,1	34,6

Source: The Authors

Table A.1.9 Breakdown of exam and laboratory costs related to Hypertension

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Mean number of exams done										
Chest x-ray, C X R	4	8	12	1	8	9	3	3	6	0
Blood CBC	1	5	6	0	5	5	2	5	7	0
Urine R/M/E	2	4	6	0	4	4	2	5	7	2
ECG	3	7	10	3	6	9	7	8	15	0
Ultrasound (USG)	0	1	1	2	2	4	2	2	4	0
Random blood sugar (RBS)	2	2	4	0	3	3	2	0	2	0
Fasting blood sugar	0	0	0	0	0	0	1	0	1	0
Hb%	0	0	0	0	0	0	1	0	1	0
S. creatinine	0	3	3	0	0	0	2	0	2	0
Blood urea	0	0	0	0	0	0	2	0	2	0
Serum electrolyte	0	0	0	0	0	0	2	0	2	0
Lipid profile	0	0	0	1	1	2	1	0	1	0
X-ray abdomen	0	0	0	0	0	0	0	1	1	0
Mean direct cost in exams (tk)										
Chest x-ray, C X R	25,7	26,5	26,2	9,0	34,8	26,4	36,2	19,1	25,0	0,0
Blood CBC	5,4	14,7	11,6	0,0	21,5	14,5	20,5	34,5	29,7	0,0
Urine R/M/E	6,4	6,3	6,3	0,0	8,3	5,6	11,7	16,0	14,5	5,3
ECG	23,6	28,4	26,7	33,4	32,0	32,5	104,0	61,5	76,2	0,0
Ultrasound (USG)	0,0	12,4	8,2	62,7	27,5	38,9	90,9	40,4	57,9	0,0
Random blood sugar (RBS)	12,7	6,5	8,6	0,0	8,6	5,8	24,0	0,0	8,3	0,0
Fasting blood sugar	0,0	0,0	0,0	0,0	0,0	0,0	8,6	0,0	3,0	0,0
Hb%	0,0	0,0	0,0	0,0	0,0	0,0	10,3	0,0	3,6	0,0
S. creatinine	0,0	15,6	10,3	0,0	0,0	0,0	38,2	0,0	13,2	0,0
Blood urea	0,0	0,0	0,0	0,0	0,0	0,0	24,4	0,0	8,5	0,0
Serum electrolyte	0,0	0,0	0,0	0,0	0,0	0,0	111,1	0,0	38,5	0,0
Lipid profile	0,0	0,0	0,0	37,5	18,0	24,3	50,0	0,0	17,3	0,0
X-ray abdomen	0,0	0,0	0,0	0,0	0,0	0,0	0,0	7,9	5,2	0,0

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Total (60+...+72)	73,7	110,4	98,0	142,6	150,7	148,0	529,9	179,4	300,7	5,3

Source: The Authors

Table A.1.10 Breakdown of costs related to C-Section

	Upazila			District			National		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Costs related to the hospitalization									
Mean duration of stay in the facility (days)	7,3	6,3	6,5	6,9	5,7	6,1	5,4	4,4	4,7
Median duration of stay in the facility (days)	7,0	7,0	7,0	7,0	5,1	6,0	5,8	4,1	5,3
Mean direct cost in building (tk)	74,8	66,1	67,1	64,5	39,8	46,5	18,9	12,1	14,4
Mean number of visits per day during stay									
Doctor	2,5	1,8	2,0	1,9	2,7	2,4	3,5	3,7	3,6
Nurse	5,9	4,8	5,0	4,9	6,0	5,6	6,6	6,9	6,8
Mean duration of visits (min)									
Doctor	12,4	6,3	7,5	7,4	7,8	7,7	4,3	5,1	4,8
Nurse	18,3	7,0	9,3	7,9	8,5	8,3	4,3	5,6	5,1
Mean direct medical labor cost for visits during stay (tk)									
Doctor	130,5	29,3	49,6	79,7	28,7	45,7	42,0	29,0	33,3
Nurse	313,4	18,2	77,3	86,4	41,0	56,1	43,7	28,5	33,6
Total	443,9	47,6	126,8	166,1	69,7	101,9	85,7	57,5	66,9
Costs related to the surgery									
Mean duration of surgery (min)	65	54	56	45	44	44	78	58	64

	Upazila			District			National		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Median duration of surgery (min)	60	50	53	43	43	43	70	43	45
Mean direct cost in building (tk)	1,6	1,3	1,3	1,9	1,2	1,4	5,2	1,7	2,9
Mean number of professionals present during operation									
Doctor	2,0	1,7	1,7	2,2	1,6	1,8	2,0	2,2	2,1
Nurse	1,9	1,2	1,3	0,3	0,6	0,5	0,0	0,5	0,3
Other	0,0	0,3	0,2	0,5	0,1	0,3	0,0	0,0	0,0
Anaesthesiologist	0,5	0,5	0,5	0,5	0,9	0,8	1,3	0,5	0,8
Total	4,4	3,6	3,8	3,4	3,3	3,3	3,3	3,2	3,2
Mean direct medical labor cost of operation (tk)									
Doctor	73,9	27,9	37,1	55,9	17,8	30,5	53,8	65,0	61,2
Nurse	49,1	5,7	14,3	2,9	2,9	2,9	0,0	3,9	2,6
Other	0,0	1,2	0,9	3,4	0,2	1,3	0,0	0,0	0,0
Anaesthesiologist	18,9	10,3	12,0	16,1	9,3	11,6	34,9	13,7	20,8
Total	141,9	45,0	64,4	78,3	30,3	46,3	88,7	82,6	84,6

Source: The authors

Table A.1.11 Breakdown of drug costs related to C-Section

	Upazila			District			National		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Mean number of drug units given:									
Amoxicillin (Cap)	0	0	0	49	0	49	21	0	21
Ascorbic Acid (Tab)	0	0	0	0	0	0	60	30	45
Allumin.Hydroxide (Tab)	0	15	15	0	0	0	0	0	0
Cephadrine (Cap)	0	22	22	28	21	25	0	27	27
Cephadrine (Inj)	0	8	8	1	3	2	1	358	314
Ciprofloxacin (Tab)	0	12	12	6	0	6	0	0	0
Ciprofloxacin (Inj)	0	1	1	0	0	0	0	0	0
Ceftriaxone (Inj)	0	2	2	0	0	0	0	1	1

	Upazila			District			National		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Ceftriaxone (Inj)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Calcium Carbonate (Tab)	0,0	9,4	7,5	0,0	0,0	0,0	0,0	22,5	15,0
Clobazam (Tab)	0,0	0,6	0,5	0,0	0,0	0,0	0,0	0,0	0,0
Diclofenac (Inj)	0,0	2,3	1,8	37,5	0,1	12,6	0,4	0,0	0,1
Diclofenac (Sup)	0,0	0,1	0,1	0,0	0,0	0,0	0,0	0,0	0,0
Diazepam (Tab)	0,0	0,1	0,1	0,1	0,0	0,0	0,0	0,0	0,0
Ergometrine (Inj)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	2,0	1,3
Ferrous Sulphate (Tab)	0,0	0,0	0,0	0,6	0,0	0,2	0,1	0,0	0,0
Ferrous Sulphate (Cap)	0,0	0,3	0,3	0,0	0,0	0,0	1,7	0,0	0,6
Furosemide (Tab)	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0
Ferrous Fumarate (Tab)	0,0	0,0	0,0	1,3	0,0	0,4	0,0	0,7	0,5
Gentamicin (Inj)	0,0	0,0	0,0	13,5	0,0	4,5	0,0	0,1	0,1
Metronidazole (Tab)	0,0	0,9	0,7	1,7	0,4	0,9	3,3	2,1	2,5
Metronidazole (Inj)	0,0	1,6	1,3	40,4	0,1	13,5	0,2	0,1	0,1
Multivitamin (Tab)	0,0	0,8	0,7	0,0	0,0	0,0	4,0	1,7	2,4
Omeprazole (Cap)	0,0	10,5	8,4	0,0	0,0	0,0	0,0	41,9	27,9
Oxytocin (Inj)	0,0	0,9	0,7	1,2	1,0	1,0	0,0	0,0	0,0
Paracetamol (Tab)	0,0	0,0	0,0	1,1	0,2	0,5	0,0	0,0	0,0
Pethidine (Inj)	4,6	3,5	3,7	4,6	0,0	1,5	7,0	12,8	10,8
Ranitidine (Tab)	0,0	6,1	4,9	0,0	0,0	0,0	2,7	23,9	16,8
Ranitidine (Inj)	0,0	8,9	7,1	0,0	0,0	0,0	0,8	4,0	3,0
Vitamin B complex (Tab)	1,9	0,0	0,4	1,9	0,0	0,6	0,0	2,8	1,9
I.V.Saline (Inj)	56,3	100,9	92,0	70,8	14,6	33,3	98,8	135,0	122,9
Total (61+...+90)	62,8	209,7	180,3	232,8	27,3	95,8	133,7	446,0	341,9
Adjusted total (91 +25%)	78,5	262,1	225,4	291,0	34,2	119,8	167,1	557,5	427,4

Source: The authors

Table A.1.12 Breakdown of exam and laboratory costs related to C-Section

	Upazila			District			Nacional		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Mean number of exams done:									
Blood CBC	2	3	5	5	11	16	0	3	3
Urine R/M/E	0	3	3	0	2	2	1	5	6
Ultrasound (USG)	2	12	14	7	12	19	0	7	7
Random blood sugar (RBS)	0	2	2	0	1	1	2	7	9
HBsAg	0	0	0	0	0	0	0	1	1
Fasting blood sugar	0	0	0	0	1	1	0	1	1
VDRL	0	0	0	0	0	0	0	1	1
Blood grouping	1	10	11	4	5	9	2	9	11
Hb%	0	1	1	0	0	0	0	6	6
Serum electrolyte	0	0	0	0	0	0	0	3	3
Lipid profile	0	0	0	0	0	0	0	1	1
ESR	0	1	1	0	0	0	0	0	0
Pregnancy test	0	0	0	0	0	0	0	2	2
Mean direct cost in exams (tk):									
Blood CBC	26,2	8,6	12,2	44,7	51,7	49,4	0,0	22,0	14,7
Urine R/M/E	0,0	4,9	3,9	0,0	4,5	3,0	6,8	16,8	13,4
Ultrasound (USG)	102,3	147,3	138,3	233,2	180,0	197,8	0,0	174,9	116,6
Random blood sugar (RBS)	0,0	5,0	4,0	0,0	4,5	3,0	13,4	30,2	24,6
HBsAg	0,0	0,0	0,0	0,0	0,0	0,0	0,0	16,3	10,8
Fasting blood sugar	0,0	0,0	0,0	0,0	4,0	2,6	0,0	5,9	4,0
VDRL	0,0	0,0	0,0	0,0	0,0	0,0	0,0	7,9	5,2
Blood grouping	10,5	23,4	20,8	26,7	15,6	19,3	17,3	39,8	32,3
Hb%	0,0	2,9	2,3	0,0	0,0	0,0	0,0	35,5	23,7
Serum electrolyte	0,0	0,0	0,0	0,0	0,0	0,0	0,0	71,3	47,5
Lipid profile	0,0	0,0	0,0	0,0	0,0	0,0	0,0	31,3	20,8
ESR	0,0	0,9	0,8	0,0	0,0	0,0	0,0	0,0	0,0
Pregnancy test	0,0	0,0	0,0	0,0	0,0	0,0	0,0	18,8	12,5

	Upazila			District			Nacional		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Total (106+...+118)	138,9	193,1	182,3	304,6	260,4	275,1	37,5	470,6	326,2

Source: The authors

Table A.1.13 Breakdown of costs related to Normal Delivery

	Upazila			District			National		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Costs related to the hospitalization									
Mean duration of stay in the facility (days)	1,7	2,5	2,2	2,7	1,7	2,0	3,2	2,5	2,7
Median duration of stay in the facility (days)	1,3	2,0	2,0	2,0	2,0	2,0	2,6	2,1	2,3
Mean direct cost in building (tk)	16,7	97,4	61,2	40,1	20,3	28,2	36,5	31,1	32,2
Mean number of visits per day during stay:									
Doctor	1,5	2,1	1,9	1,9	2,6	2,4	3,8	3,4	3,5
Nurse	4,1	5,1	4,8	5,9	4,5	5,0	6,4	5,7	5,9
Mean duration of visits (min):									
Doctor	5,0	8,1	7,0	5,5	7,5	6,8	3,4	4,5	4,1
Nurse	7,5	7,5	7,5	6,1	5,8	5,9	4,3	4,9	4,7
Mean direct medical labor cost for visits during stay (tk):									
Doctor	8,2	11,5	10,4	39,6	7,4	18,4	17,0	12,7	14,1
Nurse	16,9	6,3	10,0	17,9	4,6	9,1	21,0	12,1	15,1
Total	25,1	17,8	20,3	57,4	12,0	27,6	38,0	24,8	29,2
Costs related to the delivery:									
Mean duration of attention (min):									

	Upazila			District			National		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Doctor	17,1	20,2	19,2	17,5	22,2	20,6	33,1	31,9	32,3
Nurse	35,7	46,7	43,0	40,0	39,0	39,3	44,4	43,4	43,8
Mean number of professionals present during delivery:									
Doctor	0,6	1,0	0,9	0,4	0,6	0,6	1,6	1,6	1,6
Nurse	1,1	1,2	1,2	1,6	1,3	1,4	0,5	0,2	0,3
Other	0,3	0,2	0,2	0,3	0,3	0,3	0,5	0,3	0,3
Anaesthesiologist	0,0	0,1	0,0	0,0	0,1	0,1	0,0	0,0	0,0
Total	2,0	2,4	2,3	2,3	2,3	2,3	2,6	2,1	2,3
Mean direct medical labor cost of delivery (tk):									
Doctor	8,9	7,2	7,7	12,0	5,6	7,8	16,8	12,5	13,9
Nurse	13,3	4,6	7,5	12,3	5,5	7,8	12,3	6,6	8,5
Other	3,8	1,0	2,0	3,1	0,5	1,4	2,2	2,3	2,3
Anaesthesiologist	0,0	0,4	0,3	0,0	1,2	0,8	0,0	0,0	0,0
Total	25,9	13,2	17,5	27,5	12,8	17,9	31,4	21,5	24,8

Source: The authors

Table A.1.14 Breakdown of drug costs related to Normal Delivery

	Upazila			District			National		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Mean number of drug units given:									
Amoxicillin (Cap)	25	46	32	19	19	19	0	0	0
Ascorbic Acid (Tab)	10	0	10	0	0	0	30	30	30
Allumin.Hydroxide (Tab)	21	0	21	0	0	0	0	0	0
Cephadrine (Cap)	24	21	23	24	28	27	0	28	28
Cephadrine (Inj)	0	0	0	0	335	335	0	201	201
Ceftriaxone (Inj)	0	2	2	0	0	0	1	1	1
Calcium Carbonate (Tab)	0	21	21	0	0	0	0	30	30
Diclofenac (Inj)	0	2	2	0	1	1	0	0	0

	Upazila			District			National		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Diclofenac (Sup)	0	0	0	0	0	0	0	10	10
Ergometrine (Inj)	0	0	0	0	0	0	0	1	1
Ferrous Sulphate (Tab)	30	0	30	32	60	43	0	0	0
Ferrous Sulphate (Cap)	0	0	0	0	0	0	0	15	15
Folic Acid (Tab)	15	90	40	0	0	0	0	0	0
Frusimide (Tab)	0	2	2	0	0	0	0	30	30
Ferrous Fumarate (Tab)	0	0	0	0	0	0	0	30	30
Metronidazole (Tab)	6	0	6	14	21	17	17	19	18
Metronidazole (Inj)	0	3	3	0	0	0	0	1	1
Multivitamin (Tab)	0	50	50	0	0	0	30	35	34
Nifedipine (Tab)	0	0	0	8	0	8	60	0	60
Omeprazole (Cap)	0	0	0	0	0	0	0	28	28
Oxytocin (Inj)	4	3	3	0	3	3	0	2	2
Paracetamol (Tab)	11	7	10	15	38	32	10	14	12
Pethidine (Inj)	0	0	0	0	0	0	1	1	1
Ranitidine (Tab)	0	25	25	25	28	26	0	24	24
Ranitidine (Inj)	0	3	3	0	0	0	0	0	0
Vitamin-B complex (Tab)	57	60	58	30	90	40	0	30	30
Vitamin A (Cap)	1	0	1	0	0	0	0	0	0
I.V.Saline (Inj)	1000	0	1000	0	1000	1000	1000	1563	1474
Mean direct cost in drugs (tk):									
Amoxicillin (Cap)	22,5	10,0	14,2	25,9	3,6	11,0	0,0	0,0	0,0
Vitamin C (Tab)	0,7	0,0	0,2	0,0	0,0	0,0	8,8	11,0	10,3
Aluminium Hydroxide (Tab)	0,4	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0
Cefradine (Cap)	18,8	8,2	11,7	25,0	51,3	42,6	0,0	193,8	129,2
Cefradine (Inj)	0,0	0,0	0,0	0,0	1,6	1,0	0,0	2,4	1,6
Ceftriaxone (Inj)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Calcium Carbonate (Tab)	0,0	3,9	2,6	0,0	0,0	0,0	0,0	15,0	10,0
Diclofenac (Inj)	0,0	0,2	0,1	0,0	0,1	0,1	0,0	0,0	0,0

	Upazila			District			National		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Diclofenac (Sup)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,2	0,1
Ergometrine (Inj)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	1,7	1,1
Ferrous Sulphate (Tab)	0,4	0,0	0,1	0,9	0,6	0,7	0,0	0,0	0,0
Ferrous Sulphate (Cap)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,3	0,2
Folic Acid (Tab)	0,2	0,4	0,3	0,0	0,0	0,0	0,0	0,0	0,0
Furosemide (Tab)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,5	0,4
Ferrous Fumarate (Tab)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,7	0,5
Metronidazole (Tab)	0,2	0,0	0,1	0,9	0,4	0,6	1,6	2,4	2,1
Metronidazole (Inj)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Multivitamin (Tab)	0,0	0,8	0,6	0,0	0,0	0,0	0,7	2,3	1,8
Nifedipine (Tab)	0,0	0,0	0,0	0,4	0,0	0,1	5,0	0,0	1,7
Omeprazole (Cap)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	20,9	14,0
Oxytocin (Inj)	2,3	0,7	1,3	0,0	1,0	0,6	0,0	4,6	3,1
Paracetamol (Tab)	0,8	0,1	0,4	0,2	0,8	0,6	1,1	0,8	0,9
Pethidine (Inj)	0,0	0,0	0,0	0,0	0,0	0,0	4,6	1,2	2,3
Ranitidine (Tab)	0,0	4,7	3,2	19,4	1,8	7,7	0,0	20,5	13,7
Ranitidine (Inj)	0,0	0,6	0,4	0,0	0,0	0,0	0,0	0,0	0,0
Vitamin B complex (Tab)	2,7	0,5	1,2	3,1	0,9	1,7	0,0	1,9	1,3
Vitamin A (Cap)	0,2	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0
I.V.Saline (Inj)	6,3	0,0	2,1	0,0	2,9	1,9	23,8	101,3	75,4
Total (58+...+85)	55,6	30,2	38,7	76,0	65,0	68,7	45,7	381,5	269,6
Adjusted total (86 +25%)	69,4	37,8	48,3	95,0	81,3	85,9	57,1	476,9	337,0

Source: The authors

Table A.1.15 Breakdown of exam and laboratory costs related to Normal Delivery

	Upazila			District			National		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Mean number of exams done:									
Chest x-ray, C X R	0	0	0	0	0	0	0	1	1
Blood CBC	1	6	7	0	0	0	4	0	4
Urine R/M/E	2	0	2	1	0	1	2	4	6
ECG	1	0	1	0	0	0	0	0	0
Ultrasound (USG)	1	7	8	0	3	3	0	3	3
Random blood sugar (RBS)	2	2	4	0	0	0	2	4	6
HBsAg	2	2	4	1	0	1	0	0	0
VDRL	2	1	3	0	0	0	0	0	0
Blood grouping	3	14	17	3	5	8	1	11	12
Hb%	0	1	1	3	1	4	0	1	1
Blood urea	0	1	1	0	0	0	0	0	0
Mean direct cost in exams (tk):									
Chest x-ray, C X R	0,0	0,0	0,0	0,0	0,0	0,0	0,0	6,8	4,5
Blood CBC	7,3	17,3	14,0	0,0	0,0	0,0	57,1	0,0	19,0
Urine R/M/E	6,8	0,0	2,3	4,5	0,0	1,5	13,6	13,6	13,6
ECG	8,1	0,0	2,7	0,0	0,0	0,0	0,0	0,0	0,0
Ultrasound (USG)	25,6	83,4	64,1	0,0	48,4	32,3	0,0	68,5	45,7
Random blood sugar (RBS)	6,7	5,9	6,2	0,0	0,0	0,0	16,8	13,4	14,5
HBsAg	12,0	13,7	13,1	8,0	0,0	2,7	0,0	0,0	0,0
VDRL	7,5	2,9	4,4	0,0	0,0	0,0	0,0	0,0	0,0
Blood grouping	15,7	35,5	28,9	17,3	15,6	16,2	8,7	47,6	34,6
Hb%	0,0	3,1	2,1	24,6	4,1	10,9	0,0	6,2	4,1
Blood urea	0,0	3,4	2,3	0,0	0,0	0,0	0,0	0,0	0,0
Total (100+...+110)	89,7	165,1	140,0	54,5	68,1	63,6	96,2	156,0	136,1

Source: The authors

Table A.1.16 Breakdown of costs related to Severe Diarrhea hospitalization

	Upazila			District			nacional		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Mean direct cost in building per day (tk)	6,0	10,4	8,9	11,0	6,5	8,0	3,5	4,1	3,9
Mean number of professionals present during initial examination:									
Doctor	1,2	0,9	1,0	1,1	1,0	1,0	0,9	1,0	1,0
Nurse	0,9	0,6	0,7	0,8	0,5	0,6	0,4	0,8	0,7
Other	0,1	0,3	0,3	0,3	0,2	0,2	0,3	0,0	0,1
Anaesthesiologist	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Total (7+8+9+10)	2,3	1,8	2,0	2,1	1,7	1,8	1,5	1,8	1,7
Mean nurse dedication per day (min)	12,1	12,6	12,4	16,1	14,4	15,0	11,9	18,1	16,0
Mean direct medical labor cost for initial examination (tk):									
Doctor	2,7	1,6	2,0	3,6	1,6	2,3	1,5	2,4	2,1
Nurse	2,0	0,3	0,9	1,1	0,3	0,5	0,5	0,6	0,6
Other	0,1	0,2	0,1	0,3	0,0	0,1	0,2	0,0	0,1
Anaesthesiologist	0,2	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0
Total (13+14+15+16)	5,0	2,1	3,0	5,0	1,9	2,9	2,2	3,0	2,8
Mean direct medical labor cost of nurse dedication per day (tk):	4,4	1,3	2,3	6,3	2,1	3,5	3,4	2,8	3,0
Total direct costs related to the hospitalization (tk) (6+17)	15,3	13,7	14,3	22,3	10,5	14,4	9,1	9,9	9,6

Source: The authors

Table A.1.17 Breakdown of drug costs related to Severe Diarrhea

	Upazila			District			National		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Mean number of drug units given:									
Ciprofloxacin (Tab)	12	10	11	14	0	14	0	14	14
Ciprofloxacin (Inj)	0	0	0	0	0	0	0	2	2
Ceftriaxone (Inj)	0	1	1	1	0	1	0	0	0

	Upazila			District			National		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
Erythromycin (Sus)	9	48	32	28	0	28	0	0	0
Gentamicin (Inj)	0	0	0	0	1	1	0	0	0
Metronidazole (Tab)	10	0	10	0	0	0	0	0	0
Metronidazole (Inj)	0	0	0	12	0	12	0	0	0
Paracetamol (Sus)	11	18	13	5	20	10	21	21	21
Salbutamol (Sus)	0	0	0	0	0	0	0	21	21
Tetracycline (Cap)	20	20	20	32	0	32	0	0	0
Vitamin A (Cap)	0	0	0	0	0	0	0	14	14
Zinc Sulphate (Sus)	0	0	0	0	7	7	0	42	42
I.V.Saline (Inj)	1250	1060	1187	1250	1000	1167	1500	1682	1654
Oral Saline (Oth)	20	8	15	12	0	12	0	0	0
Mean direct cost in drugs (tk):									
Ciprofloxacin (Tab)	22,1	17,7	20,6	24,8	0,0	24,8	0,0	27,2	27,2
Ciprofloxacin (Inj)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	1,3	1,3
Ceftriaxone (Inj)	0,0	0,1	0,1	0,2	0,0	0,2	0,0	0,0	0,0
Erythromycin (Sus)	9,3	49,5	33,4	28,9	0,0	28,9	0,0	0,0	0,0
Gentamicin (Inj)	0,0	0,0	0,0	0,0	2,7	2,7	0,0	0,0	0,0
Metronidazole (Tab)	2,5	0,0	2,5	0,0	0,0	0,0	0,0	0,0	0,0
Metronidazole (Inj)	0,0	0,0	0,0	3,9	0,0	3,9	0,0	0,0	0,0
Paracetamol (Sus)	2,0	3,5	2,5	0,9	3,9	1,9	4,1	4,1	4,1
Salbutamol (Sus)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	7,3	7,3
Tetracycline (Cap)	8,9	9,0	8,9	14,4	0,0	14,4	0,0	0,0	0,0
Vitamin A (Cap)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	18,3	18,3
Zinc Sulphate (Sus)	0,0	0,0	0,0	0,0	3,2	3,2	0,0	19,3	19,3
I.V.Saline (Inj)	75,0	63,6	71,2	75,8	70,0	73,9	90,0	100,9	99,2
Oral Saline (Oth)	0,1	0,0	0,1	0,1	0,0	0,1	0,0	0,0	0,0
Total (34+...+47)	29,6	33,7	31,0	37,8	36,6	37,4	61,4	67,5	66,6
Adjusted total (48 +25%)	37,1	42,2	38,8	47,2	45,8	46,8	76,7	84,4	83,3

Source: The authors

Annex 2. Input unit costs

Table A.2.1 Input unit costs

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Number of observations	8	16	24	4	8	12	2	4	6	8
Mean surface of facility (square feet)	4.213	1.859	2.644	33.906	5.114	14.711	229.287	17.887	88.354	703
Distribution by construction materials (%)										
Brick and concrete	100	88	94	100	99	100	100	98	100	89
Brick with CI roof	0	5	2	0	1	0	0	2	0	11
Pucca with CI walls and roof	0	5	2	0	0	0	0	0	0	0
Other	0	3	1	0	0	0	0	0	0	0
Total	100	100	100	100	100	100	100	100	100	100
Distribution by use (%)										
Waiting/Reception Room	3	11	6	0	6	2	4	3	2	17
Diagnostic Facilities Area	2	1	2	0	0	0	5	6	7	0
Consultations (with dressing rooms)	14	8	11	23	11	20	16	7	14	25
Emergency/Casualty Dept	2	4	3	2	3	2	2	1	2	0
Inpatient Wards and Cabins	33	32	30	60	32	50	42	39	40	0
Delivery/Labor/Post delivery	5	10	7	2	4	3	3	3	3	0
Surgical/Post surgical	7	11	8	9	25	14	10	12	10	0
Pathological Lab/Radiology/X-Ray/CT Scan/MMR	6	10	7	2	13	5	10	9	10	25
Pharmacy/Dispensary	3	3	3	1	2	1	5	1	4	4
Kitchen & Laundry	6	3	8	1	3	2	4	6	5	6
Other	18	7	16	0	1	0	0	12	2	23
Total	100	100	100	100	100	100	100	100	100	100
Mean surface of inpatient wards and cabins area (square feet)	1.831	897	1.209	21.169	2.269	8.569	100.827	8.107	39.014	na
Mean number of beds in inpatient wards (2)	32,9	15,9	21,5	138,5	53,0	81,5	1.035,5	227,3	496,7	na
Mean surface per bed in inpatient wards (square feet)	55	67	63	180	58	99	90	64	73	na
Mean surface of delivery/labor/post delivery area (square feet)	110	156	135	353	152	232	2.830	445	922	na

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Mean number of beds in delivery rooms (2)	1,4	1,0	1,2	1,5	1,3	1,4	4,0	2,5	3,0	na
Mean surface per bed in delivery room (square feet)	83	156	122	309	118	195	472	211	263	na
Mean surface of surgical/post surgical area (square feet)	244	199	214	2.440	635	1.236	24.355	2.412	9.726	na
Mean number of operating rooms (2)	1,3	1,0	1,1	2,5	1,8	2,0	9,5	4,8	6,3	na
Mean surface per operating room (square feet)	217	199	205	1.217	350	639	2.749	553	1.285	na
Mean surface of consultations area (with dressing rooms) (square feet)	772	168	398	7.846	697	3.297	39.324	1.488	14.100	266
Mean number of consultation boxes (2)	4,5	2,2	3,0	9,0	6,1	7,2	46,0	26,3	32,8	1,4
Mean surface per consultation box (square feet)	174	98	127	471	108	240	752	105	321	195
Mean monthly cost per square feet (tk) (1)	3,4	5,0	4,5	2,1	3,7	3,2	1,2	2,4	2,0	6,9
Mean monthly cost per bed in inpatient wards (tk)	181,6	315,6	270,9	333,2	197,1	242,5	107,6	123,9	118,5	na
Mean monthly cost per bed in delivery room (tk)	281,9	889,3	605,9	586,0	362,5	451,9	527,4	468,9	480,6	na
Mean monthly cost per operating room (tk)	736,0	996,0	909,4	2.209,9	1.138,0	1.495,3	3.398,6	1.289,2	1.992,3	na
Mean monthly cost per consultation box (tk)	565,3	457,7	498,7	803,0	344,9	511,4	871,5	265,8	467,7	1.241,3
(1) Cost imputed from rental value										
(2) Maximum between number of rooms and number of beds										

Source: The authors

Table A.2.2 Labor Cost

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Doctors (except interns):										
Number of observations	29	8	37	15	12	27	11	19	30	6
Mean monthly salary (tk)	12.316	9.706	11.011	16.129	5.110	10.619	12.231	13.279	12.755	27.000
Percentage of time spent on direct medical services (%)	92	96	94	76	84	80	94	88	91	85
Mean eligible vacations per year (days)	28	3	15	25	0	13	26	28	27	19
Mean eligible sick days per year (days)	10	0	5	14	0	7	5	0	3	3
Cost per 10 minutes of direct medical services (tk)	5,6	3,5	4,5	9,4	1,6	5,5	5,1	4,7	4,9	10,3
Nurse (except assistants):										
Number of observations	15	8	23	10	9	19	5	11	16	1
Mean monthly salary (tk)	9.192	2.770	5.981	9.601	4.719	7.160	7.629	4.557	6.093	6.014
Percentage of time spent on direct medical services (%)	94	100	97	100	100	100	100	100	100	100
Mean vacations per year (days)	27	0	14	25	6	15	22	20	21	30
Mean eligible sick days per year (days)	14	13	14	10	0	5	10	0	5	0
Cost per 10 minutes of direct medical services (tk)	3,8	0,9	2,4	3,6	1,6	2,6	2,8	1,6	2,2	2,2
Other medical staff:										
Number of observations	50	61	111	21	33	54	15	23	38	18
Mean monthly salary (tk)	7.263	1.947	4.605	4.274	2.498	3.386	5.318	4.454	4.886	2.009
Percentage of time spent on direct medical services (%)	80	76	78	93	59	76	68	60	64	68
Mean vacations per year (days)	31	3	17	10	2	6	15	30	22	5
Mean eligible sick days per year (days)	14	16	5	10	2	0	1	6	0	3
Cost per 10 minutes of direct medical services (tk)	3,1	0,6	1,8	1,4	0,6	1,0	1,3	1,2	1,3	0,8
Senior administrative staff:										
Number of observations	1	5	6	2	2	4	4	5	9	na
Mean monthly salary (tk)	15.148	2.100	8.624	18.129	478	9.303	22.058	15.052	18.555	
Percentage of time spent on direct medical services (%)	na	na	na	na	na	na	na	na	na	na
Mean vacations per year (days)	36	0	18	10	0	5	23	15	19	na
Mean eligible sick days per year (days)	20	2	11	18	0	9	10	0	5	na

	Upazila			District			National			NGO
	Public	Private	Total	Public	Private	Total	Public	Private	Total	
Cost per 10 minutes of direct medical services (tk)	na	na	na	na	na	na	na	na	na	na
Other administrative staff:										
Number of observations	24	23	47	10	29	39	7	19	26	15
Mean monthly salary (tk)	6.006	2.517	4.261	3.715	2.564	3.140	6.315	4.357	5.336	4.094
Percentage of time spent on direct medical services (%)	na	na	na	na	na	na	na	na	na	na
Mean vacations per year (days)	27	1	14	11	2	5	31	18	22	12
Mean eligible sick days per year (days)	14	2	8	10	0	5	4	0	2	11
Cost per 10 minutes of direct medical services (tk)	na	na	na	na	na	na	na	na	na	na

Source: The authors

Table A.2.3 Drug costs

Unit price of the drugs most frequently observed (covering 80% of the prescriptions)				International Drug Price Guide						Bangladesh						Imputed by the authors					
				Concentration (mg/unit)			Price per unit (tk = 1/61 US)			Concentration (mg/unit)			Price per unit (tk)			Concentration (mg/unit)			Price per unit (tk)		
Co de	Drug name	Format	Unit	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
1, 2	Amoxicillin	Cap	capsule	250	500		1,05	2,28		250	500		3,50	6,00		250	500		1,05	2,28	
1, 5	Amoxicillin	Sus	ml	25	50		0,29	0,44		250	500		45,00			25	50		0,29	0,44	
2, 1	Vitamin C	Tab	tablet	250	500		0,46	1,18					0,80			250	500		0,46	1,18	
5, 1	Amlodipine	Tab	tablet	5			0,88			5	10		3,90	7,00		5			0,88		
6, 1	Atenolol	Tab	tablet	50	100		0,57	1,85		50	100		0,80	1,50		50	100		0,57	1,85	
7, 1	Aluminum Hydroxide	Tab	tablet	500			0,34						0,60			500			0,34		
8, 1	Aspirin	Tab	tablet	75	300		0,22	0,10		75	100		0,37	1,00		75	300		0,22	0,10	

Unit price of the drugs most frequently observed (covering 80% of the prescriptions)				International Drug Price Guide						Bangladesh						Imputed by the authors					
				Concentration (mg/unit)			Price per unit (tk = 1/61 US)			Concentration (mg/unit)			Price per unit (tk)			Concentration (mg/unit)		Price per unit (tk)			
18,1	Bromazepam	Tab	tablet										2,90						2,90		
20,5	Cefpodoxime	Sus	ml										98,00	195,00					1,61	3,20	
22,2	Cefradine	Cap	capsule						250	500			6,50	12,50		250	500		6,50	12,50	
22,4	Cefradine	Inj	ml	500			0,04			250	500	10000	31,00	53,40	73,20	500			0,04		
22,5	Cefradine	Sus	ml						250				80,00			250			1,31		
24,1	Ciprofloxacin	Tab	tablet	250	500		1,77	1,94		250	500		7,64	12,25		250	500		1,77	1,94	
24,4	Ciprofloxacin	Inj	ml	2			0,67			250			128,50			2			0,67		
26,1	Cotrimoxazole	Tab	tablet	24	96		0,24	0,52		normal	DS		1,50	2,00		24	96		0,24	0,52	
26,5	Cotrimoxazole	Sus	ml	48			0,22			normal			21,50			48			0,22		
27,4	Ceftriaxone	Inj	ml	250	500	1000	0,07	0,06	0,16	250	500	10000	130,00	200,00	370,00	250	500	1000	0,07	0,06	0,16
28,1	Calcium Carbonate	Tab	tablet							250	500		1,00	2,00		250	500		1,00	2,00	
31,1	Clobazam	Tab	tablet										2,84						2,84		
32,5	Chlorpheniramine	Sus	ml										13,00						0,21		
43	Diclofenac	Inj	ml	25			2,90						29,6			25			2,90		

Unit price of the drugs most frequently observed (covering 80% of the prescriptions)				International Drug Price Guide						Bangladesh						Imputed by the authors			
				Concentration (mg/unit)			Price per unit (tk = 1/61 US)			Concentration (mg/unit)			Price per unit (tk)			Concentration (mg/unit)		Price per unit (tk)	
,4	nac												0						
43,6	Diclofenac	Sup	suppository	50			0,30						7,25	13,20		50		0,30	
44,1	Domperidone	Tab	tablet										2,00					2,00	
45,1	Diazepam	Tab	tablet	5	10		0,21	1,46					0,22			5	10	0,21	1,46
52,4	Ergometrine	Inj	ml	0,2	0,5		9,69	6,26					10,50			0,2	0,5	9,69	6,26
53,5	Erythromycin	Sus	ml	50			1,03			250			54,60			50		1,03	
60,1	Ferrous Sulphate	Tab	tablet	200			0,12						2,66			200		0,12	
60,2	Ferrous Sulphate	Cap	capsule	200			0,12						24,00			200		0,12	
61,1	Folic Acid	Tab	tablet	5			0,13						0,26			5		0,13	
64,1	Furosemide	Tab	tablet	40			0,29						0,55			40		0,29	
65,1	Ferrous Fumarate	Tab	tablet										0,19					0,19	
68,4	Gentamicin	Inj	ml	10	40		3,38	2,03					6,00	9,50		10	40	3,38	2,03
86,1	Losartan	Tab	tablet	50			57,64			25	50		3,50	6,00		50		57,64	
90,1	Metronidazole	Tab	tablet	250	500		0,23	0,26		200	400		0,66	1,06		250	500	0,23	0,26
90,4	Metronidazole	Inj	ml	5			0,32			200			47,40			5		0,32	
94,1	Multivitamin	Tab	tablet				0,18						27,50					0,18	
100,	Nifedipine	Tab	tablet	10			0,67						0,34			10		0,67	

Unit price of the drugs most frequently observed (covering 80% of the prescriptions)				International Drug Price Guide						Bangladesh						Imputed by the authors				
				Concentration (mg/unit)			Price per unit (tk = 1/61 US)			Concentration (mg/unit)			Price per unit (tk)			Concentration (mg/unit)		Price per unit (tk)		
1																				
101,7	Normal Saline	Oth	ml				0,06						7,00						0,06	
103,2	Omeprazole	Cap	capsule	20			11,96			20	40		5,00	9,00		20			11,96	
104,4	Oxytocin	Inj	ml	2,5			4,62						8,35			2,5			4,62	
107,1	Paracetamol	Tab	tablet	500			0,18						0,80			500			0,18	
107,5	Paracetamol	Sus	ml	24	100		0,20	0,05					12,87			24	100		0,20	0,05
112,4	Pethidine	Inj	ml	50			18,58						11,00			50			18,58	
118,1	Ranitidine	Tab	tablet	150	300		1,52	5,26		150	300		2,00	4,00		150	300		1,52	5,26
118,4	Ranitidine	Inj	ml	25			6,46						6,00			25			6,46	
123,5	Salbutamol	Sus	ml	2			0,35			2			15,00			2			0,35	
128,2	Tetracycline	Cap	capsule	250			0,45						1,20			250			0,45	
136,1	Vitamin B complex	Tab	tablet				0,25						20,00						0,25	
13	Vitamin	Sus	ml										21,0	38,00					0,34	0,62

Unit price of the drugs most frequently observed (covering 80% of the prescriptions)				International Drug Price Guide						Bangladesh						Imputed by the authors			
				Concentration (mg/unit)			Price per unit (tk = 1/61 US)			Concentration (mg/unit)			Price per unit (tk)			Concentration (mg/unit)		Price per unit (tk)	
6,5	B complex											0							
137,2	Vitamin A	Cap	capsule				1,31					2,00						1,31	
139,2	Zinc Sulphate	Cap	capsule									2,25						2,25	
139,5	Zinc Sulphate	Sus	ml									28,00						0,46	
140,2	Z.Sul+ Fe.Sul+ F.Acid	Cap	capsule	200			0,16					2,93			200			0,16	
150,4	I.V.Saline	Inj	ml									35,00	50,00					0,07	0,05
160,7	Oral Rehydration Salts	Oth	ml	1000			0,004					4,00			1000			0,004	

Sources: the authors

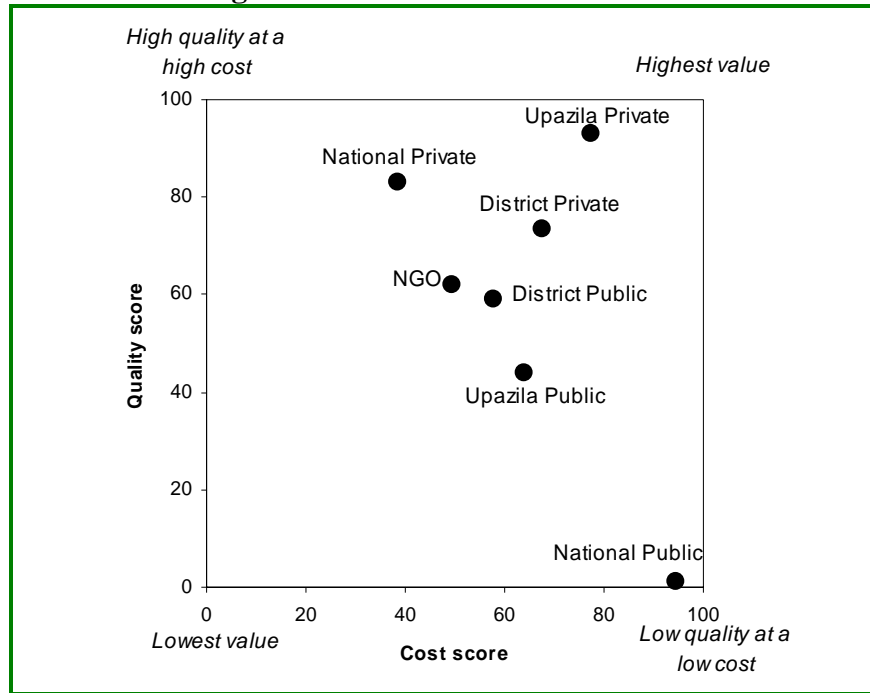
Table A.2.4 Exam and laboratory costs

Exam		Number of exams done			Mean price charged (tk)		
Cod	Name	Facility	Outside	Total	Facility	Outside	Total
1	Chest x-ray, C X R	32	17	49	108,03	109,41	108,51
2	Blood CBC	48	37	85	117,46	92,16	106,45
3	Urine R/M/E	53	30	83	54,4	50,67	53,05
4	ECG	15	19	34	130	135,26	132,94
5	Ultrasound (USG)	40	46	86	343,75	409,13	378,72
6	Random blood sugar (RBS)	21	14	35	53,48	108	75,29
7	HBsAg	5	7	12	96	260	191,67
8	Fasting blood sugar	2	5	7	95	77	82,14
9	Stool R/M/E	10	6	16	46,6	30,83	40,69
10	BA Meal for X ray	1	0	1	300	na	300
11	VDRL	5	7	12	59,6	125,71	98,17
12	Blood grouping	39	33	72	69,21	83,64	75,82
13	Hb%	13	7	20	98,46	92,86	96,5
14	S. creatinine	0	5	5	na	172	172
15	Blood urea	0	2	2	na	110	110
16	Serum electrolyte	5	2	7	380	500	414,29
17	Lipid profile	1	2	3	500	450	466,67
18	ESR	1	0	1	30	na	30
19	Pregnancy test	3	2	5	76,67	150	106
20	Blood C/S	0	2	2	na	150	150
21	X-ray abdomen	1	0	1	134	na	134
	Total	295	243	538	126,47	164,41	143,61

Source: the authors

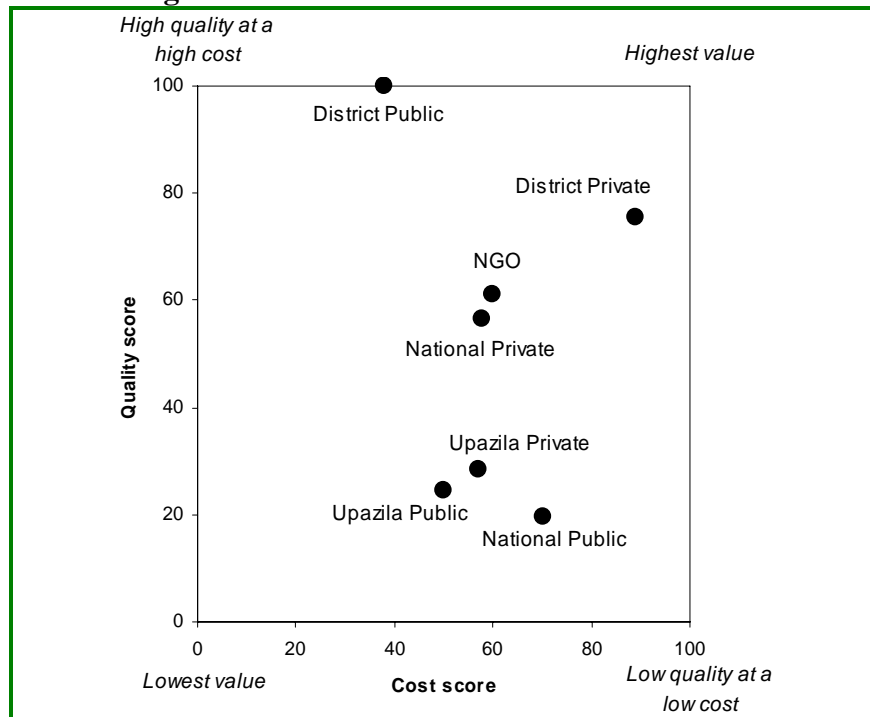
Annex 3. Value derived for six selected services

Figure A.3.1 Value derived for ARI



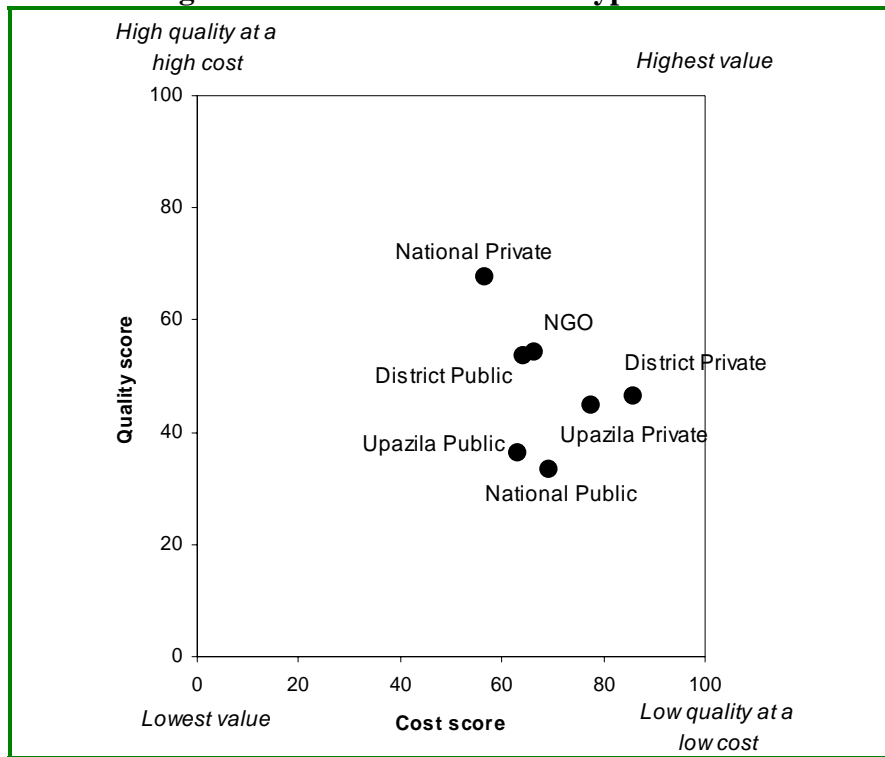
Source: Authors

Figure A.3.2 Value derived for antenatal care



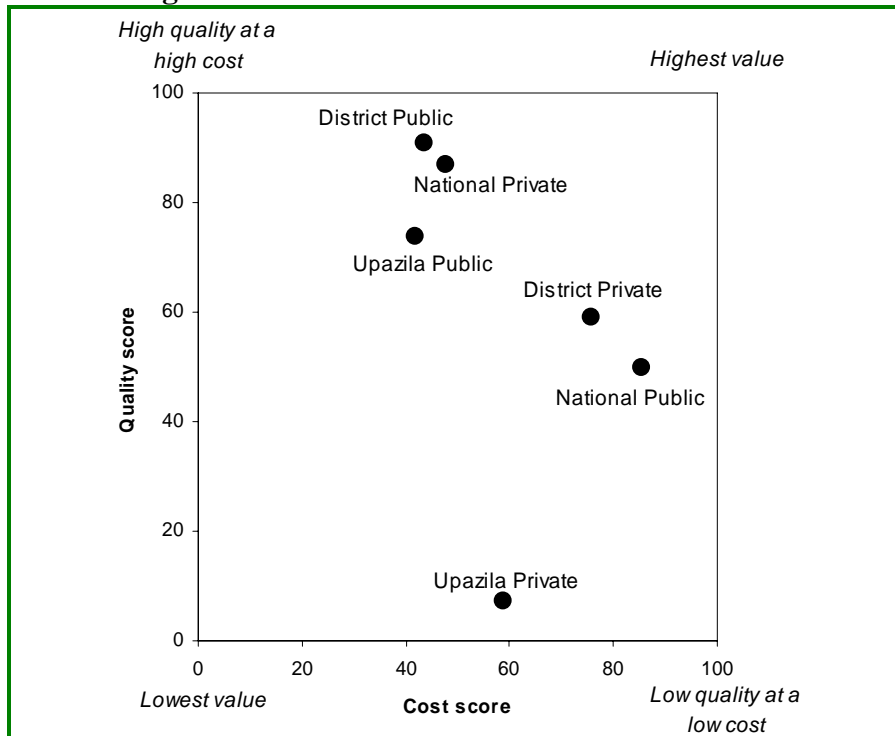
Source: Authors

Figure A.3.3 Value derived for hypertension



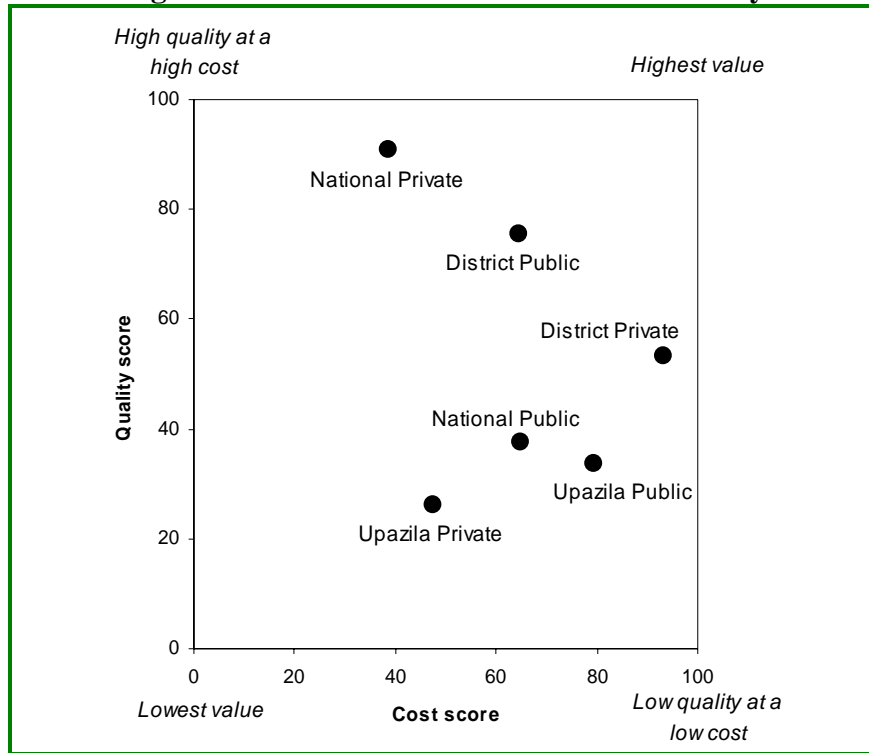
Source: Authors

Figure A.3.4 Value derived for cesarean section



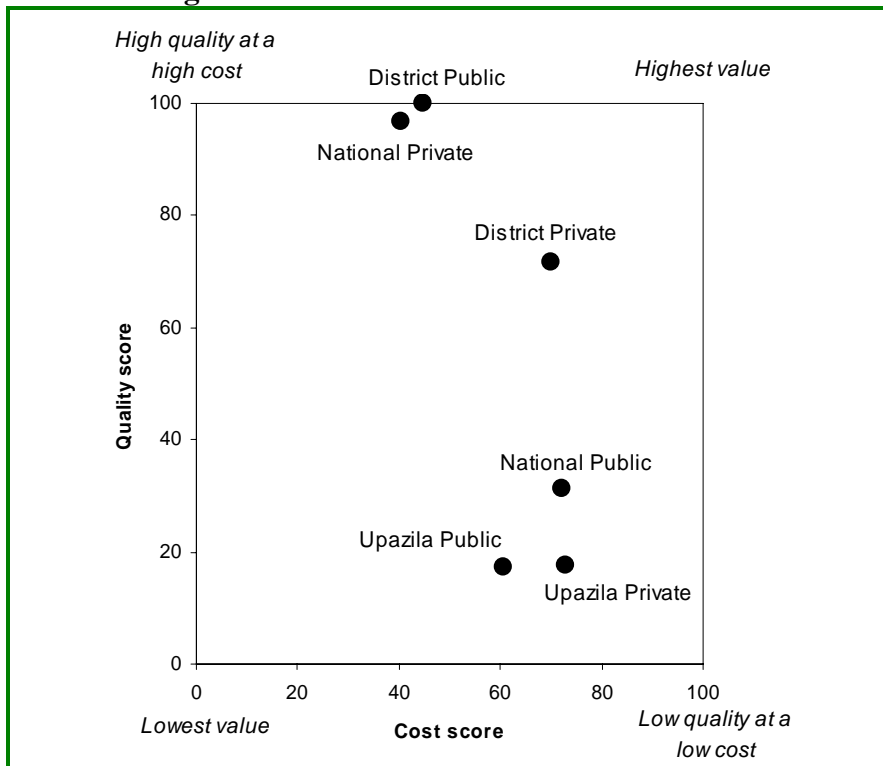
Source: Authors

Figure A.3.5 Value derived for normal delivery



Source: Authors

Figure A.3.6 Value derived severe diarrhea



Source: Authors

Annex 4. Questionnaires

(Included in the web-site: www.health-swap2.com)

Facility Survey

Exit Poll Outpatients

Exit Poll Inpatients

Direct Observation: Antenatal Care

Direct Observation: ARI

Direct Observation: Hypertension

Direct Observation: Normal Delivery

Direct Observation: C-Section

Direct Observation: Severe Diarrhea

Annex 5. Calculation of Performance Scores

LEGEND



Aggregation: surveys' basic units of observation (patient, facility or direct observation) are averaged through larger analytical domains (level and type of facility).



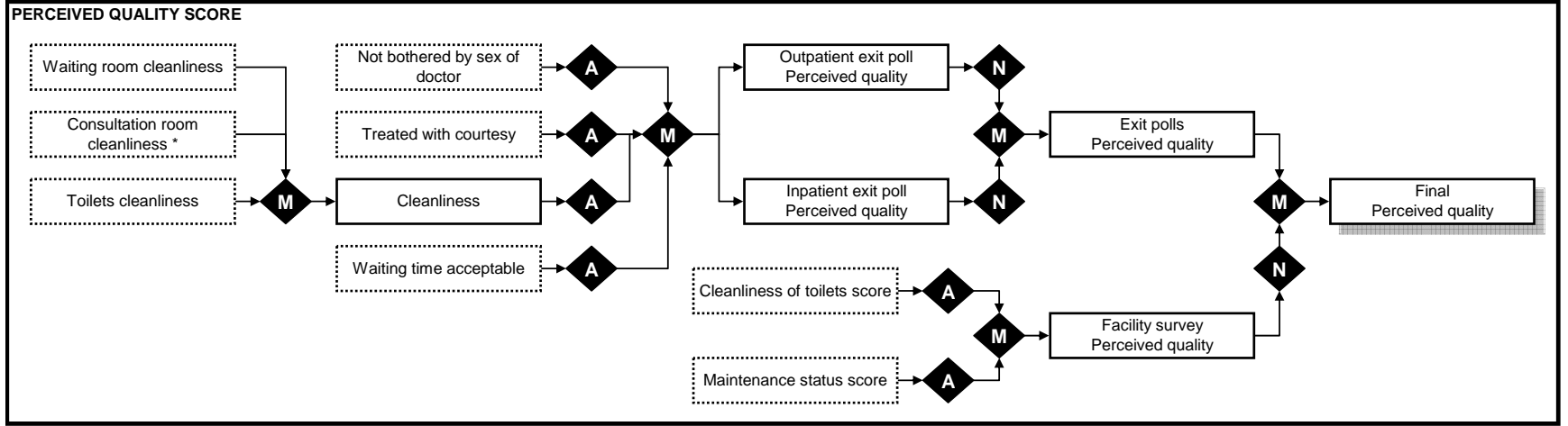
Mean: output indicator is the arithmetic mean of input indicators.

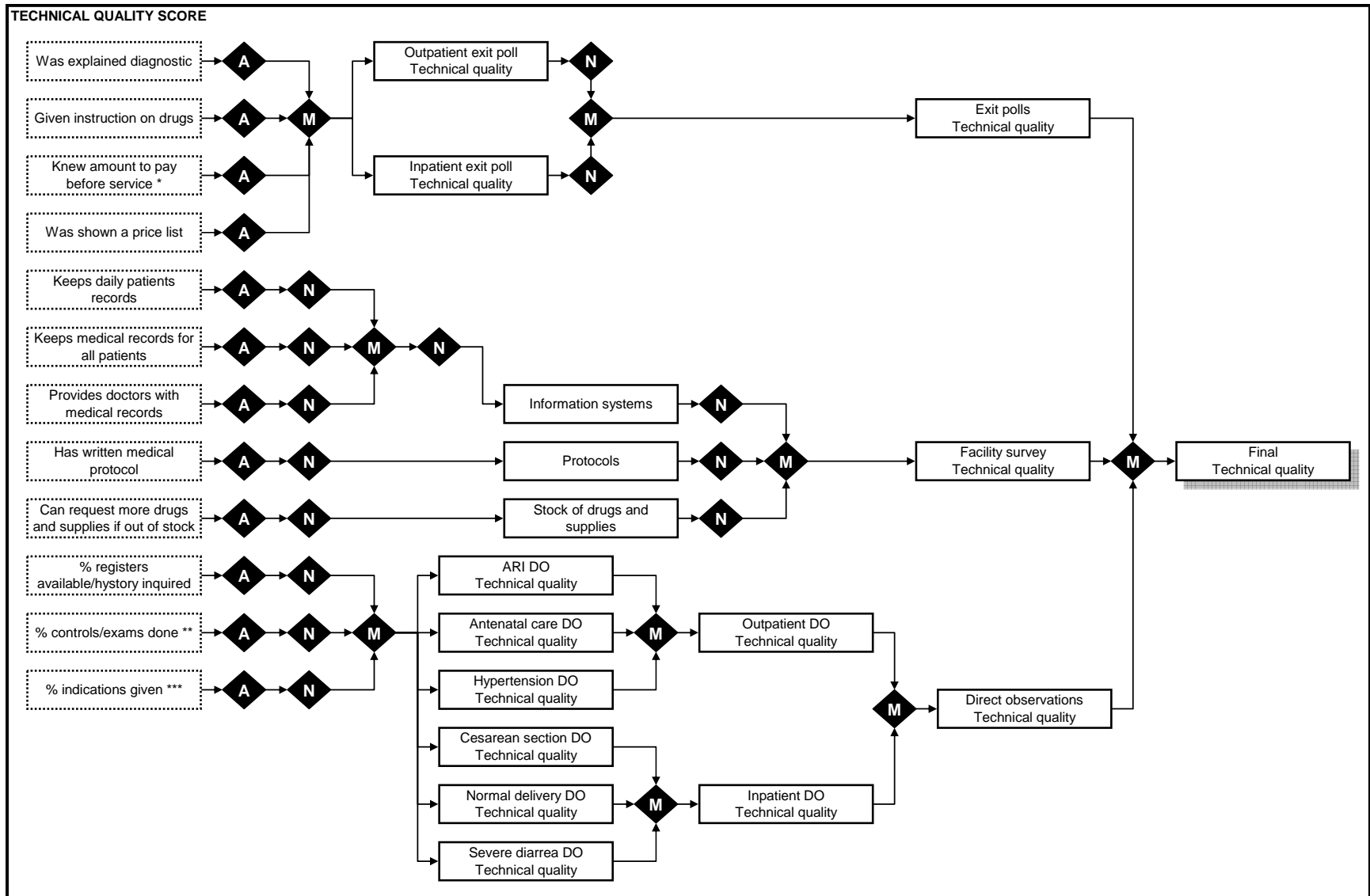


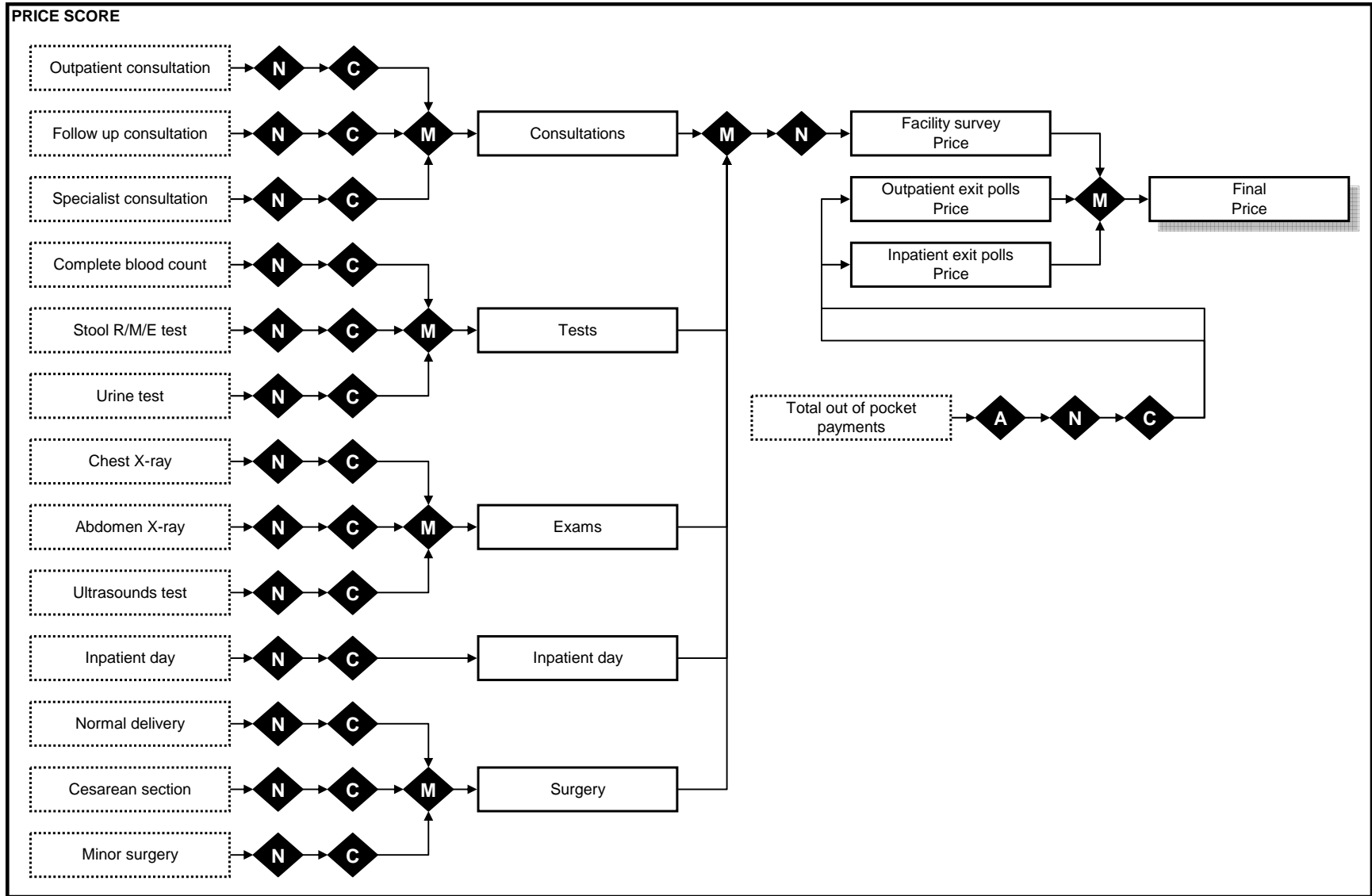
Normalization: input indicator is linearly transformed into a score from 0 to 100. The analytical domains (level and type of facility) with the lowest and highest indicator values receive a score of 0 and 100, respectively.

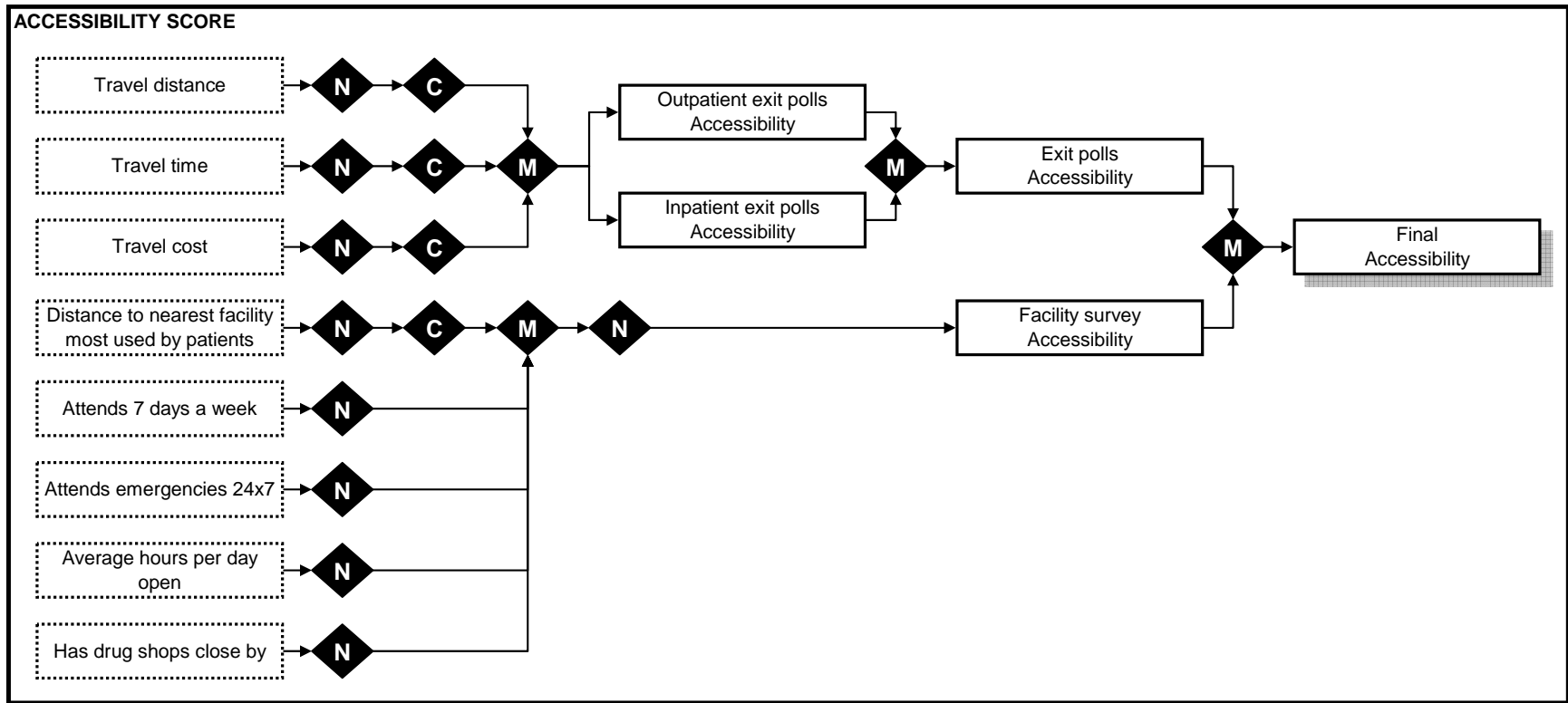


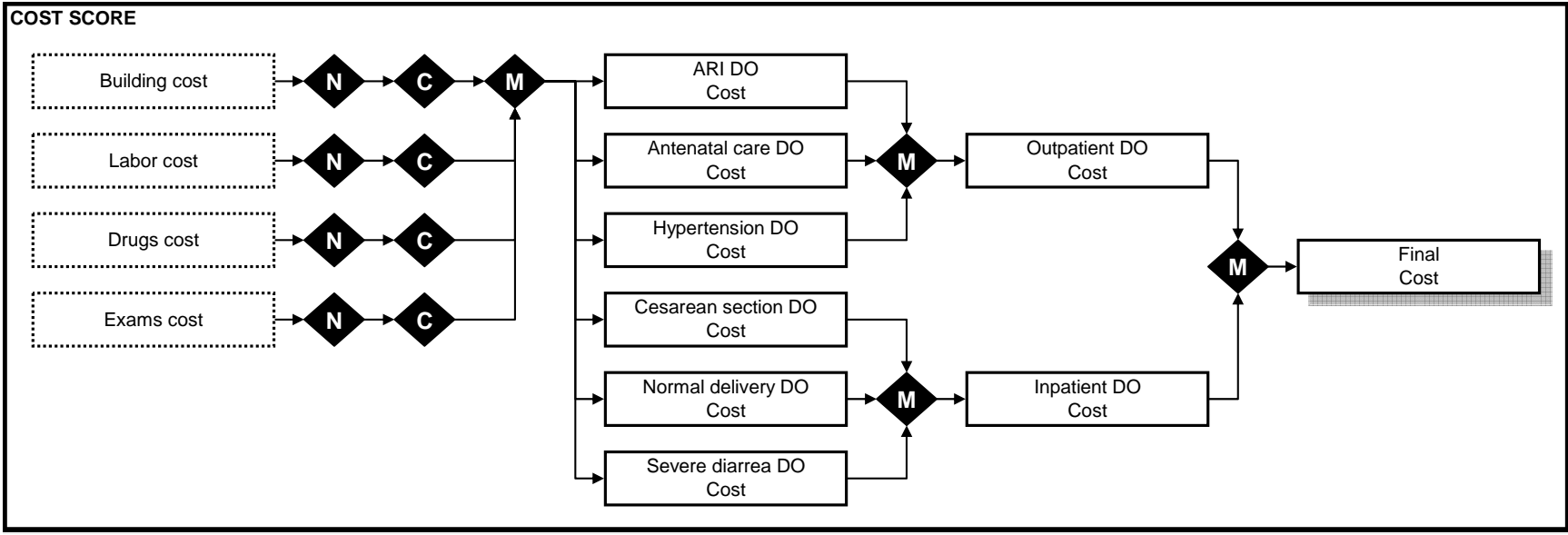
Complement: always preceded by a normalization process. The input score is flipped with the formula $Output = 100 - Input$, so that a "bad" score becomes a "good" score, and vice-versa. This way, for example, a high cost would receive a low score.











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