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THE EFFECTS OF COST RECOVERY ON DEMAND FOR HEALTH CARE AT CAIRO'S EMBABA HOSPITAL

by

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ABSTRACT

This report summarizes two surveys conducted to understand how utilization at Embaba Hospital would be affected by the upgrading of the facility and an increase in prices. Under the hospital conversion component of the Cost Recovery for Health Project in Egypt, five public facilities, including Embaba hospital, will be given autonomy in a pilot experiment to increase the efficiency and the quality of services. Econometric results of a household survey indicate that outpatient price increases will result in a significant reduction in utilization, but have a minimal effect on inpatient utilization. An alternate provider survey identifies existing competition to Embaba Hospital. Fees range widely and the extent to which other providers refer patients to Embaba is also assessed.

The overall analysis of the surveys suggests that upgrading the quality of care at Embaba, through improvements in the infrastructure, the equipment, and the management, along with a general increase in user fees is unlikely to reduce utilization of the hospital; in fact, it is likely to increase. Differential fees are recommended to protect the poorest segments of the population who could not afford the increases.

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LIST OF EXHIBITS

LIST OF ACRONYMS AND ABBREVIATIONS

CRHP	Cost Recovery for Health Project
EDI	Economic Development Institute (of the World Bank)
IDC	Integrated Development Consultants
HFS	Health Financing and Sustainability Project
LE	Egyptian Pound
PVO	Private Voluntary Organization
USAID	United States Agency for International Development
WB	World Bank

EXECUTIVE SUMMARY

The United States Agency for International Development (USAID), Cairo, Egypt has been supporting the Cost Recovery for Health Project (CRHP) since the inception of the program in the mid-1980s. Through the Health Financing and Sustainability (HFS) project, surveys were conducted to understand how utilization at Embaba hospital would be affected by the upgrading of the facility and an increase in prices.

Three surveys were conducted: a household survey, a patient survey, and an alternate provider survey. The household and alternate provider surveys are discussed here. The patient survey did not provide substantially more data than the other two to merit discussion in this paper.[1]

Descriptive Results of the Household Survey

The household survey was conducted in the catchment area of Embaba hospital. Of the 8,012 individuals represented in the survey, 12 percent reported an illness in the two week recall period. Of these, 63 percent sought care outside the home. Survey findings included the following.

- The socio-economic status of those people who selected Embaba hospital is less than that of the catchment area in general. They are poorer, have larger families, are less well educated, and are less likely to have some form of health insurance.

- Among outpatient visits recorded, 71 percent were to private facilities, while 29 percent were to public facilities. Among inpatient stays, 27 percent were at private facilities and 63 percent at public facilities.

- Outpatient expenditures[2] averaged $3 at Embaba, compared to $4 at all general hospitals in the catchment area, and $11 at private facilities. Inpatient average expenditures at Embaba were $10 per day, compared to $6 per day at all general hospitals, and $70 per day at private hospitals. The expenditures for obstetric deliveries were $14, $17, and $165 respectively.

Econometric Results of the Household Survey

Econometric results indicate that outpatient price increases at Embaba will result in a significant reduction in utilization. For inpatient care price increases will have a minimal effect on utilization.

Increasing insurance coverage in the catchment area is expected to have a negative impact on the percent of inpatients going to Embaba hospital, in favor of private facilities. There appears to be no impact on outpatient utilization.

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[1] It is discussed in depth in Kemprecos and Oldham, 1992.

[2] Unless otherwise noted, the exchange rate is 3.3 Egyptian pounds equal to $1.00 U.S.

As educational levels rise expected outpatient and inpatient use at Embaba hospital is expected to decrease. Similarly as incomes rise fewer people in the catchment area are expected to use Embaba; the effect is greater for outpatient care than for inpatient care.

Alternate Provider Survey

The alternate provider survey sought to determine what competition exists from other hospitals in the Embaba catchment area. Additionally the extent to which other facilities and doctors refer patients to Embaba hospital was assessed.

Fees ranged widely among the different facilities, though private facilities were on average more expensive than public facilities. Obstetric delivery fees were on average $66 at private (for profit and charitable) facilities, while they were $16 at public (Ministry of Health and para-statal insurance hospitals). These compare with $14 at Embaba hospital.

Policy Implications

The analysis of survey data suggest that upgrading the quality of care at Embaba hospital (through infrastructure, equipment, and management improvements) and a general increase in fees is unlikely to reduce utilization at the hospital; it is likely that utilization would actually increase.

The poorest segments of the population will have difficulty paying increased fees. Differential fees should be considered to protect this group. Means testing and amenity wards are two approaches to charging different prices for different groups of patients.

1.0 INTRODUCTION

The United States Agency for International Development (USAID), Cairo, Egypt has been supporting the Cost Recovery for Health Project (CRHP) since its inception in the mid-1980s. The project has two goals. The first is to upgrade the facilities and the quality of services at a number of government hospitals and polyclinics. The second is to convert these same institutions to a more financially autonomous status through a general increase in fees, hence the name the "Cost Recovery" project.

The Health Financing and Sustainability (HFS) project was asked to provide technical assistance to CRHP in five areas:

- Quality Improvement
- Financial Management and Facility Administration
- Economic Analysis
- Facility Management Development
- Project Planning and Management

The hospital which has been the focus of the bulk of HFS' work to date is Embaba hospital, a 335 bed general acute care hospital. Approximately 322 doctors are assigned to the hospital; the most frequent inpatient service is obstetric delivery of which there are about 500 per month. The outpatient clinic handles about 12,000 visits per month.

This paper describes the household and provider surveys which were conducted in order to estimate how utilization at Embaba hospital might be affected by the upgrading and the accompanying fee increases. Survey results are discussed in terms of how they should influence policy decisions regarding fee increases at Embaba hospital.

2.0 DESCRIPTION AND PURPOSE OF THE SURVEYS

2.1 THE THREE SURVEYS

In total three surveys were conducted as part of the economic analyses for the Cost Recovery Project[3]:

- A household survey in the catchment area of the hospital, and
- An alternate provider survey in which directors of hospitals and clinics were interviewed about the services, prices, and utilization at their facility.
- A hospital survey of inpatients and outpatients who were receiving care at Embaba hospital

The purpose of the household survey was to understand the demand behavior of the population in the catchment area of Embaba hospital. Of particular interest was obtaining measurements of the socio-economic status of the population for use in predicting what effect upgraded facilities and higher fees would have on utilization at Embaba and other nearby facilities.

The provider survey was designed to collect price and utilization data, and referral practices of other hospitals and doctors offices in the Embaba catchment area. The degree to which other hospitals compete with or refer patients to Embaba hospital was to be estimated.

The patient survey was intended as a complement to the household survey, in the event that insufficient inpatient events at Embaba hospital were recorded through the household interviews. The household survey did produce a reasonable amount of Embaba inpatient events. Thus the inpatient survey is not discussed in any detail here. A complete description of the patient survey and descriptive results can be found in Kemprecos and Oldham, 1992.

2.2 THE HOUSEHOLD SURVEY

2.2.1 Catchment Area

For the purpose of the household survey the catchment area was defined as the 10 subdistricts (in three districts) surrounding Embaba hospital. Embaba hospital is on the West side of the Nile river across from the city of Cairo, but still in the Cairo metropolitan area. According to census information updated in 1989 these 10 subdistricts are home to 957,000 people.

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[3] The survey results presented here come from two sources:

Kemprecos, L., and Oldham, L. "Economic Surveys for Health Financing and Sustainability," May 26, 1992. Integrated Development Consultants for the HFS Project.

Ellis, R., and Stephenson, E., "Analysis of the Demand for Inpatient and Outpatient Care from Embaba Hospital, Cairo, Egypt," November 19, 1992. HFS Project.

2.2.2 Sampling

The survey employed a three-stage sampling methodology resulting in 1,827 households being selected, and of these 1,652 were interviewed. These households represent 8,012 individuals, giving an average family size of 4.8 persons.

Of the 8,012 individuals, there were 2,042 episodes of illness in the 30-day recall period, or 25 percent. Of the 7,351 people who were included in the analysis of inpatient stays, 510 reported being hospitalized in the last year, or 7 percent.

To put these statistics in perspective a comparison with other countries is presented in Exhibit 1 below.

Exhibit 1
Percentage of People Reporting a Health Problem and Seeking Medical Treatment Outside the Home, Selected Countries.

	Did you have a health problem in the last two weeks?	
Region or Country	Yes	No
San Salvador, El Salvador[a]	48%	52%
Santo Domingo, Dominican Rep.[b]	37	63
Peru[c]	37	63
Colombia[d]	35	65
Cairo, Egypt	12	88
Health Zone of Kikimi, Zaire[e]	11	89
	Did you seek medical care outside the home?	
Region of Country	Yes	No
Kisantu and Bokoro, Zaire[f]	89%	11%
Cairo, Egypt	63	37
Santo Domingo, Dominican Rep.[b]	31	69
San Salvador, El Salvador[a]	17	83

Sources (a) Bitrán, 1990; (b) Bitrán, 1989. (c) Encuesta Nacional de Nutrición y Salud INE & MOH, Peru, 1984; (d) Reported by Luis Carlos Gomez from the Colombian Ministry of Health's Health Care Utilization Survey, (e) Projet Santé Pour Tous, 1985, (f) Bitran, 1989*

The results from the Embaba survey indicate that the Cairo sample population reports an illness much less often than several Latin American countries, but about the same frequency as a sample in Zaire. When it comes to actually seeking care when one is ill the Cairo sample are more likely to seek outside help than two samples in Latin America.

2.2.3 Socio-economic Status

Most of the subdistricts which make up the Embaba catchment area are considered poorer sections of Cairo. The following exhibit (Exhibit 2) provides per capita household expenditures in quintiles. It should be noted that both income and expenditure data were collected but it was felt that the expenditure data more accurately reflected true "income" than what people reported as their income. In many cases reported monthly income was significantly less than reported monthly expenditures.

Exhibit 2
Per Capita Annual Household Expenditures (US $)

QUINTILE	ANNUAL EXPENDITURE PER CAPITA[4]
1	7 - 252
2	220 - 306
3	294 - 393
4	378 - 543
5	567 - 4,951
Mean	453
Median	342
GNP per capita (1990, WB)	600

Source Kemprecos and Oldham, 1992

As is shown from the mean and median, this population appears to be poorer than the population of Egypt in general, as indicated by the World Bank statistic of GNP per capita of $600.

When one compares the socio-economic indicators of the catchment-wide population with the subset who used Embaba hospital, one sees that those who use Embaba are poorer, in general, than the catchment area population (Exhibit 3).

[4] An exchange rate of 3.3 Egyptian Pounds (LE) per $1.00 U.S. is used throughout this paper.

Exhibit 3
Comparison of Hospital Patients with Catchment Population
Various Socio-Economic Indicators

	Catchment	Inpatient	Outpatient
Mean Annual Household Expenditure	2,176	1,960	2,343
Mean Per Capita Household Expenditure	507	380	386
Mean Family Size	4.8	5.9	6.4
Mean Years of Education	7.3	4.6	3.1
No Health Insurance in Household	50%	68%	62%

Source: Kemprecos and Oldham, 1992

Exhibit 3 indicates that on a per capita basis Embaba patients (both inpatients and outpatient) are poorer, on average, than the catchment population; they come from larger families, have less education, and are less likely to have a family member with health insurance, than the general catchment population.

These results are not surprising given that Embaba hospital charges very low or no fees for most services, and has a reputation of being a poor quality facility. However for those without much money it may be the only alternative to not getting any formal health care.

2.2.4 Choice of Provider: Public versus Private

Where do residents of the Embaba catchment area seek care? For outpatient care the majority go to private[5] facilities. Exhibit 4 shows that 71 percent utilized private facilities compared to just 29 percent for public facilities. For inpatient services, however, the percentages are roughly reversed with 63 percent choosing public facilities, and 27 percent choosing private facilities. The dramatic difference of choice of provider for outpatient and inpatient care appears to be related to prices, as will be discussed later.

[5] For the Embaba surveys this includes charitable facilities as well as private for-profit facilities.

Exhibit 4
Utilization of Public and Private Health Care Facilities in Three Cities: Cairo (Egypt), Santo Domingo (Dominican Republic), and San Salvador (El Salvador)

	TYPE OF CARE	PUBLIC	PRIVATE
CAIRO[a]	Outpatient	29%	71%
	Inpatient	63%	27%
SANTO DOMINGO[b]	Outpatient	42%	58%
SAN SALVADOR[b]	Outpatient	42%	58%

Sources: (a) Ellis and Stephenson, 1992
(b) Bitran and McInnes, 1992

For comparison, data from two other urban areas are also shown in Exhibit 4. In both Santo Domingo and San Salvador private providers are preferred for outpatient care, just as in the Embaba catchment area, with 58 percent selecting private providers.

2.2.5 Patient Expenditures

While it was mentioned earlier that Embaba Hospital charges very low or no fees, when total patient expenditures of an outpatient or inpatient visit are added up the amount is no longer insignificant. For example survey respondents reported outpatient out-of-pocket expenditures for exams, drugs, diagnostic tests, tips, personal transportation, and "other".

Outpatient Expenditures

At Embaba hospital the mean total visit expenditure was found to be 11 Egyptian pounds or $3.33. Exhibit 5 summarizes the average total expenditures for outpatient care in a variety of different hospitals, as found by the household survey.

Exhibit 5 indicates that public facilities are, on average, the least expensive, with Embaba the least expensive. Public Teaching hospitals appear to be relatively expensive. A possible explanation is that patients at teaching hospitals have more acute conditions than patients at other facilities.

Exhibit 5
Mean Total Expenditure on Outpatient Visits by Type of Facility

TYPE OF FACILITY	MEAN TOTAL EXPENDITURE PER VISIT (US $)
Embaba	$3
Public General	4
Public Specialty[a]	6
Public Insurance	11
Public Teaching/University	20
Private	11
Private Voluntary Organization	6

Source: Kemprecos and Oldham, 1992
Notes: (a) E.g. cancer, chest, fever, etc.

Inpatient Expenditures

When inpatient expenditures are examined the results are similar, that is public facilities being less expensive than private facilities (again not controlling for quality of care or severity of illness). The rank in which facilities fall in terms of expenditure depends on what is compared, as is seen in the Exhibit 6 below. Expenditures per bed day are lowest at public specialty hospitals, but expenditures for obstetric delivery are lowest at Embaba Hospital.

Exhibit 6
Mean Total Expenditure Per Bed Day and Per Delivery (US $)

TYPE OF FACILITY	MEAN TOTAL EXPENDITURE PER BED DAY (US $)	MEAN TOTAL EXPENDITURE PER DELIVERY (US $)
Embaba	$10	$ 14
Public General	6	17
Public Specialty[a]	3	17
Public Insurance	11	22
Public Teaching/University	10	17
Private	70	165
Private Voluntary Organization	b	b

Source: Kemprecos and Oldham, 1992
Notes: (a) E.g. Fever Hospital, Heart Hospital, etc.
(b) Insufficient data.

The expenditures include many of the same cost categories as in the outpatient expenditures: hospital charge, doctor's fee, diagnostic tests (both within and outside the facility), drugs, supplies, transportation, tips, and other. Embaba is consistently one of the least expensive facilities. It has the lowest mean expenditure for obstetric delivery, and third lowest mean expenditure per bed day. Again it is clear that private facilities are on average much more expensive than the public facilities, not controlling for the severity or the quality of care (or any other factors for that matter).

3.0 ECONOMETRIC ANALYSES OF SURVEY DATA

The descriptive analysis of survey data presented above provides useful information about how people behaved in response to illness episodes. One limitation, however, is that it does not help explain what influenced people's behavior. In order to improve the chances of making appropriate policy decisions, it is important to understand what determines health care demand seeking behavior. The HFS Project therefore performed a multivariate analysis (econometric analysis) to identify factors (such as income, education, age, etc.) which motivated people's choice of health care provider. This section presents some of the findings[6].

3.1 UTILIZATION

Exhibit 7 compares the utilization at Embaba hospital with utilization at other public and private/charitable hospitals.

Exhibit 7
Percent Utilization and Average Fees by Type of Facility

		Embaba	OTHER PUBLIC	PRIVATE CHARITABLE
Outpatient	Percent	6	23	71
	mean fees	$3	$6	$9
Inpatient	Percent	16	57	27
	mean fees[a]	$29	$53	$182

Source: Ellis and Stephenson, 1992
Notes. (a) Per hospitalization

For outpatient care, private and charitable facilities are much preferred over Embaba and other public facilities (71 percent versus 29 percent). For inpatient care the utilization is reversed. Embaba and public facilities receive 73 percent of hospitalizations, while private facilities receive 27 percent. This reversal may be related to the much higher expenditures normally required for an inpatient stay. While most people are willing and able to pay the higher fees for outpatient private care for which total expenditures are relatively low ($9.00 for private care), only a small number are willing to pay for much more expensive inpatient care at private facilities where expenditures were reported as $182, on average.

[6] The findings presented here are from Ellis and Stephenson, 1992.

3.2 DETERMINANTS OF DEMAND

Other studies, both in the U.S. and in other developing countries have demonstrated that the demand for health care is influenced by, among other things, price of care, income, education, employment status, gender, and quality of care.[7] As has already been shown, Embaba seems to be considered of lower quality. Those with money tend to visit other facilities, especially private ones.

3.3 SIMULATIONS OF DEMAND RESPONSE TO CHANGE IN VARIABLES

Using statistical techniques, Ellis and Stephenson, simulate how the demand for care at Embaba and other facilities may change as prices, insurance coverage, education levels, and incomes change.

3.3.1 Price Change Simulation

A change in outpatient prices at Embaba hospital has little effect on the likelihood that a person will seek care at a health facility, though it does have a substantial impact on the likelihood that the person will go to Embaba hospital. Exhibit 8 shows how the probability of seeking care and the probability of choosing a particular type of provider changes with a simulated increase in price from one to five Egyptian pounds. There is no change in the probability of seeking care (refer to "Decision to Seek Care" column, Exhibit 8), with 78.2 percent of people who report an illness seeking care whether the price at Embaba is 1 or 5 pounds. The probability that patients who report an illness will select Embaba drops as the price of care increases. At a price of one pound 11.5 percent of those who seek care choose Embaba, while at a price of five pounds only 2.7 percent select Embaba.

In economic terms the price elasticity of demand for care at Embaba hospital is -1 (actually -0.95), which means that a 50 percent increase in price results in a 50 percent decrease in utilization[8].

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[7] Gertler, 1987; Ellis and Mwabu, 1991.

[8] See Appendix for calculations of elasticity.

Exhibit 8
Decision to Seek Outpatient Care and Choice of Provider as a Function of Price at Embaba Hospital

		CAIRO	
		Decision to Seek Care	Provider Choice
Price=1	No Care	21.8%	
	Care	78.2%	
	Embaba		11.5%
	Other Public		23.8%
	Private/Charitable		64.7%
Price=5	No Care	21.8%	
	Care	78.2%	
	Embaba		2.7%
	Other Public		26.2%
	Private/Charitable		71.1%

Source: Ellis and Stephenson, 1992

For inpatient care, econometric simulations suggest that price changes at Embaba have almost no impact on utilization at Embaba. Simulated price increases of 50 percent result in only a 0.2 percent drop (from 12.3 percent to 12.1 percent) in utilization of Embaba, as shown in Exhibit 9. The price elasticity is -0.04, meaning that it would take a 100 percent increase in price before utilization even dropped four percent[9].

[9] See Appendix for calculations of elasticity.

Exhibit 9
Choice of Inpatient Provider as a Function of Price at Embaba Hospital

PRICES (LE)	TYPE OF FACILITY	CAIRO Provider Choice
Embaba Prices[a] = 40, 100, 140	Embaba Other Public Private/Charitable	12.3% 61.2% 26.3%
Embaba Prices[a] = 60, 150, 210	Embaba Other Public Private/Charitable	12.1% 61.4% 26.4%

Source: Ellis and Stephenson, 1992
Notes: Percents may not sum to 100 due to rounding.
(a) "Prices" are average total patient expenditures for delivery, general surgery, and "other", respectively.

3.3.2 Insurance Simulation

What would be the effect on utilization of care, and the selection of Embaba if insurance coverage were increased to a greater percent of the population? The short answer is little effect on outpatient care, and a small effect on inpatient care.

As insurance coverage increases there is almost no change either in the probability of seeking care or in the probability of choosing Embaba as the facility for care.

On the other hand, for inpatient care, as insurance coverage increases, the demand for Embaba decreases. This may be another indication of the perceived quality differential between Embaba and other facilities, especially the more expensive private ones. As insurance increases it in effect lowers the price of all providers. Thus private facilities, which are perceived to offer higher quality care than public facilities, are more often chosen.

3.3.3 Education Level Simulation

For outpatient care, as educational levels increase there is a tendency for people to visit other public providers instead of Embaba, and a substantial increase in the percent expected to visit private providers (from 52 to 57 percent) as people move from all having a primary school eduction, to all having a college eduction[10].

[10] Ellis and Stephenson, 1992, p. 43.

The same holds true for inpatient care. *As educational levels increase individuals are less likely to visit Embaba and more likely to visit other public and private providers.*

3.3.4 Income Simulation

Changes in income have little effect on the overall probability of seeking outpatient care. However income does have an impact on the choice of Embaba. *As income rises people are less likely to choose Embaba for outpatient care, instead choosing other public and private facilities.*

A similar, though less pronounced impact is observed in inpatient care. As people become wealthier they prefer to be treated at private facilities. With increasing incomes there is a slight drop in the percent of people visiting Embaba and a slight increase in the percent visiting private facilities.

4.0 ALTERNATE PROVIDER SURVEY

4.1 DESCRIPTION AND PURPOSE

Another component of the economic analyses was the alternate provider survey. It consisted of interviewing representatives from 20 hospitals and doctors offices in the Embaba catchment area. The purpose of the survey was to better understand the services which competing hospitals provide, and to estimate to what extent referrals were occurring between other facilities and Embaba hospital.

For the other hospitals the goal of the interviews was to describe their capacity, utilization, price structure, and referral policy. Would they be a good source of referrals to Embaba hospital, or would they primarily be a competitor?

Ten doctors were also interviewed. The primary purpose was to understand their referral practices. Again a key question was: would they refer patients to Embaba hospital, or would they act more as a competitor to Embaba's outpatient services?

4.2 BED CAPACITY

Exhibit 10 below lists the six hospitals from which good data were obtained. The facilities are grouped into private, PVO, public general, and insurance (para-statal) hospital. Number of beds are provided.

Exhibit 10
Hospitals in Alternate Provider Survey: Number of Beds by Class

TYPE AND NAME OF FACILITY		NUMBER OF BEDS BY CLASS			
		FIRST	SECOND	FREE[a]	PAY[a]
PRIVATE[b]	Hospital A	7	18		
	Hospital B	7	14		
PVO[b]	PVO A			70	
	PVO B				6
PUBLIC	Tahrir General	30	20	118	
	Boulaq General			219	55

Source: Kemprecos and Oldham, 1992

Notes: (a) "Free" and "Pay" are terms used in public and PVO facilities - both types of bed require a payment, though a free bed is generally substantially less than a pay bed

(b) These facilities wished their names to remain anonymous

The six hospitals listed above are quite different in terms of number of beds, ranging from six beds in PVO B, to 274 beds in Boulaq General hospital.

4.3 PRICES

Price data for the same set of hospitals is provided in Exhibit 11. Obstetric delivery fees have been selected for comparison, though where these were not available "moderate surgery" fees were used instead.

Exhibit 11
Reported Fees for Delivery[a] - Alternate Provider Survey

TYPE AND NAME OF FACILITY			REPORTED FEE FOR DELIVERY ($US)		
			BY HOSPITAL	BY TYPE OF HOSPITAL	BY PUBLIC PRIVATE
PRIVATE	Hospital B[b]	Min.	106	106	66
		Max.	106		
PVO	PVO A[b]	Min.	67	46	
		Max.	133		
	PVO B[b]	Min.	26		
		Max.	26		
PUBLIC	Tahrir General	Min.	11	10	16
		Max.	11		
	Boulaq General	Min.	9		
		Max.	12		
INSURANCE	Agouza	Min.	30	30	
		Max.	76		

Source Kemprecos and Oldham, 1992

Notes (a) For some facilities delivery fees were not available "Moderate surgery" fees are used instead These hospitals include Boulaq, and Agouza

(b) These facilities wished their names to remain anonymous

Before discussing the differences in fees it must be emphasized that this represents a very small sample of hospitals, so generalizations must be made with caution. That said, the provider survey data supports the findings of the household survey. Private and PVO facilities are the most expensive, averaging $106 and $46 per delivery, while insurance (para-statal) and public general hospitals are the least expensive, averaging $30 and $10 respectively. Aggregating even further, private (including private and PVO) facilities average $66 per delivery compared to $16 per delivery for public (public general and insurance) hospitals.

5.0 POLICY IMPLICATIONS OF THE HOUSEHOLD AND PROVIDER SURVEYS

The results from the household and provider surveys have a number of implications for the ongoing changes at Embaba hospital, namely the facility upgrading and the change in fees.

First, increases in outpatient fees are unlikely to result in greater revenues, given the current perceived quality level. People are likely to stop using Embaba in proportion to the increase in fees. Of course the quality improvements are likely to affect this, probably by attracting more patients who might otherwise have gone elsewhere. This should at least partially offset the loss of clients due to price increases.

For inpatient care, on the other hand, an increase in fees is unlikely to result in large decreases in utilization. This suggests that revenue will increase with price increases. Given the very low price elasticity of demand for inpatient care, a 20 percent increase in prices will result in nearly a 20 percent increase in inpatient revenues.

To what extent can or should Embaba raise its fees? Both the household survey and the provider survey indicate that Embaba is one of the least expensive facilities for inpatient care. Even with a doubling, on average, of fees, Embaba would remain substantially cheaper than private facilities, and approximately equal to public insurance hospitals. A concomitant increase in quality of care (obtained through an upgrading of the facility) is likely to offset any reduction in total utilization which might be caused by the fee increases.

What will happen to the poorest during and after the quality improvements and price increases? First of all the analyses have shown that the percent of people seeking care does not drop substantially with price increases. People may shift to other providers, but in general they are not prevented from seeking care from some provider.

Inevitably there will be some who at the new fee levels (or even now) are unwilling to pay for care at Embaba, one of the least expensive facilities in the catchment area, and they will forego care. In such a situation it is desirable to have different fees for different types of patients. Two methods of achieving this are through means testing and amenity rooms/wards. Through means testing the hospital would attempt to distinguish lower income groups from higher income groups, and charge lower fees for the former group. This might be accomplished through some kind of document from the social security agency or other agency responsible for social affairs. In addition Embaba can have separate wards, semi-private, or private rooms where those who want extra comforts pay a higher fee. These wards or rooms, in addition to being more private, might have private bathrooms, televisions, special meals, or special decor.

The higher fees paid by patients in the amenity wards or rooms can help subsidize the care for poorer patients who will be content with shared rooms, as long as they feel they are receiving more or less the same quality of technical medical care.

APPENDIX 1: PRICE ELASTICITY CALCULATIONS

1. Outpatient Care

Sample = 7983. At price equal to 1, probability of choosing Embaba is 0.09. At price equal to 5, probability of choosing Embaba is 0.02. Multiplying the probability times the samples size gives the following quantities (and prices).

$Q_1 = 718$ $P_1 = 1$
$Q_2 = 160$ $P_2 = 5$

The elasticity is calculated as follows.

(718-160/718+160)/(1-5/1+5) = .636/-.667 = -0.95

2. Inpatient Care

Sample = 7777. At price equal to 40, probability of choosing Embaba is 0.123. At price equal to 60, probability of choosing Embaba is 0.121. Multiplying the probability times the samples size gives the following quantities (and prices).

$Q_1 = 957$ $P_1 = 40$
$Q_2 = 941$ $P_2 = 60$

The elasticity is calculated as follows.

(957-941/957+941)/(40-60/40+60) = .008/-.2 = -0.04

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