HFS Technical Report No.5

COST RECOVERY IN PUBLIC HOSPITALS IN BELIZE

Submitted to:

Health Services Division
Office of Health
Bureau of Science and Technology
Agency for International Development

By

GERARD LA FORGIA
The Urban Institute
and
CHARLES GRIFFIN
The Urban Institute

JANUARY 1992

Health Financing and Sustainability (HFS) Project
Abt Associates Inc., Prime Contractor
4800 Montgomery Lane, Suite 600
Bethesda, Maryland, 20814 USA
Tel: (301) 913-0500 Fax: (301) 652-3916
Telex: 312636

Management Sciences for Health, Subcontractor
The Urban Institute, Subcontractor
Clark Atlanta University, Subcontractor
Tillinghast, a Towers Perrin Company, Subcontractor

A.I.D. Contract No. DPE-5974-Z-00-9026-00

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

LIST OF EXHIBITS

LIST OF ANNEX EXHIBITS

ABSTRACT

The authors report options for improving the current cost recovery system. Although user fee policy implementation is legally mandated, it has not been a priority of the Ministry of Health (MOH). Pressure from the government to improve efficiency and reduce budget deficits in Belize's health care system initiated the MOH search for a workable cost recovery program. This document provides the Government of Belize (GOB) with a method for choosing the level of cost recovery. The study finds that simple adaptations of the current fee schedule could be used to develop partial and full cost-recovery simulations that assist policymakers in deciding which changes in fee structure and total revenue estimates would work best in the system.

The report concludes that enforcing the current fee schedule would recover ten percent of the costs, and the MOH should grant autonomy to the health facility managers as an incentive for fee collection. In addition, the authors recommend that means testing should be transferred to the Social Development Department of the Ministry of Social Services and Community Development. An analysis of Belize's current cost recovery system for health services reveals that user fee implementation is a viable option for successful cost recovery; but the HFS project team recommends that the GOB run demonstration projects for one or two years.

EXECUTIVE SUMMARY

This report examines the current cost recovery system for health services in Belize and provides options for improvement. Approximately two percent of recurrent costs are recovered through fee revenues. Although legally mandated, user fee policy implementation has not been a high priority for the Ministry of Health (MOH). However, in response to increasing budget deficits and pressure from government financial authorities to improve efficiency, MOH officials have begun to explore the full potential of cost recovery through user fees.

Several factors account for the poor performance of current user fee policy. First, the fee schedule has not been changed since 1967. The average fee for an inpatient stay in Belize City Hospital represents less than 10 percent of a worker's monthly salary and only four percent of the cost of care. The per diem rate in government hospitals and the price for many radiology exams are less than the price of a meal in a fast food restaurant. The prices are negligible compared to those charged in the private sector and in the country's only mission hospital. Prices for some services are even lower today than in the 1960s.

Second, means testing is ineffective as a tool to target subsidies to the poor. The law mandates a fee structure based on five income categories. Most facilities charge a single rate. The means test itself is informal and clerks rarely press a patient to pay a fee. Even private patients, who make relatively large payments to physicians for care provided in public hospitals, generally are not identified by the means test. Third, the billing and collection systems are dysfunctional. Only eight percent of inpatients and three percent of outpatients make any payment in Belize City Hospital as a result of the faulty means test, coupled with ambiguous exemption mechanisms and lax billing and collecting procedures.

This paper provides a tool for choosing the level of cost recovery. Simplified adaptations of the current fee schedule are used to develop partial and full cost-recovery revenue simulations. The simulations are conducted in a cumulative way so that policymakers can decide which incremental changes in the fee structure and associated total revenue estimates would work best for the system.

Enforcing the current fee schedule would recover 10 percent of costs. Doubling current charges and adding nominal fees for outpatient services would recover 25 percent in Belize City Hospital and 40 percent in the districts. As

a short-term goal, 25 percent cost recovery is feasible. If policymakers set full cost recovery as a goal, it can be achieved only with a comprehensive health insurance system. However, the health insurance option is currently unfeasible, and a fully-functional partial cost-recovery system is a prerequisite.

If the Government of Belize (GOB) intends to vigorously pursue cost recovery, it must provide incentives for facility staff to collect fees. This involves finding a way to leave a substantial share of the collections with the facilities raising the money. We suggest some autonomy for health facility managers as a first step to a successful cost recovery policy.

We recommend that the same rates be charged to all patients, public and private. Some MOH officials suggest eliminating private practice in government facilities. This action may result in lower utilization and reduced revenue. We recommend that admissions be monitored to prevent preferential selection (and treatment) of private patients.

Although fees should be levied on all patients, people who are too poor to pay must be accommodated. The most workable approach is to transfer means testing to the Social Development Department (SDD) of the Ministry of Social Services and Community Development. The SDD has a network of social workers responsible for means testing for the Government's welfare program. Recipients receive weekly cash subsidies. Other alternatives include reducing fees for services in lower-level facilities or during off-peak hours.

Prospects for substantial cost recovery in the health sector are good, based on relatively low fees at many places in the system. We advise, however, that because of the lack of experience with a vigorous cost recovery program in Belize, a prudent approach would be to run demonstration projects for one or two years. Hospital services, of course, have the highest potential for gaining most of the initial benefits of recovering costs and should be targeted early on. There is also considerable potential in lower-level facilities to generate small amounts of revenue that would represent a significant proportion of their relatively low costs.

1.0 INTRODUCTION

Through an analysis of the current user fee system in Ministry of Health (MOH) facilities in Belize, this report proposes a series of changes that could result in greater cost recovery. It estimates the potential revenues from user fees under a series of pricing scenarios. The purpose of the analysis and recommendations is to provide a technical basis for future policy discussions on cost recovery options for financing government health services in Belize. As a long-term strategy, the report suggests that a comprehensive health insurance system may be the most effective path to full cost recovery.[1] In the interim, short-term, partial cost recovery strategies, together with related technical assistance activities aimed at increasing revenues through charging user fees, are recommended. These include raising the current low fee levels, improving billing and fee collection practices, establishing functional means testing, and designing effective revenue-sharing schemes between participating institutions and facilities. Different fee collection strategies, price levels, and revenue retention options can be tested on a demonstration basis in various facilities.

1.1 BACKGROUND

Improving the current user fee system has been recommended in previous A.I.D.-commissioned health sector assessments and cost studies. In a detailed analysis of facility medical care expenditures, Raymond et al. (1987) proposed that the MOH establish and enforce a flat fee system in both Belize City Hospital (BCH) and district facilities as a partial cost recovery measure. Norris et al. (1988) recommended the implementation of a new fee schedule based on relative costs of services, but incorporating a sliding scale conforming to patients' ability to pay. The authors also recommended that the fee structure provide disincentives for unnecessary utilization of BCH by charging lower fees for similar services at health centers and district facilities. These recommendations are incorporated into this report. Unlike the previous studies, however, this report scrutinizes the current user fee experience and suggests a feasible set of cost recovery options. For each option, the report specifies prices, estimates revenues, and calculates the percent of recurrent cost recovery for most facility types and a large sample of services provided therein. The

[1] Comprehensive health insurance is discussed in Volume III of HFS's Belize Compendium report (La Forgia, 1991).

report also analyzes the institutional and management requirements to implement and maintain a user fee system.

1.2 METHODS

For this study, the HFS team gathered data on fee schedules, billing and collection practices, revenues, means testing, and uncollected bills in three MOH facilities: BCH, Orange Walk, and Punta Gorda. Where possible, observations of means testing and the fee collection process were made at these facilities to better grasp the mechanics of these operations. For comparative purposes, prices for medical services were collected from a number of private providers, including a non-profit mission hospital. Utilization data were gathered for the BCH, district hospitals, Belize City health centers, and the Central Laboratory from the Central Statistics Office and facility ledgers. In cases where data were unavailable (such as for drug prescriptions), a two- or three-month sample was taken from facility registers. To add greater precision to revenue estimates, the HFS team gathered public and private prices for a sample of high-volume drugs, radiology exams, and laboratory tests.

Facility and service expenditure estimates were derived from Raymond et al. (1987) and adjusted for salary increases and inflation. The "revenue cash book" of the Accountant General was the source of real user fee receipts by district. These revenues provide a basis for comparison with revenue projections presented in this report. Legislation pertaining to user fee rates, means tests, exemptions, and admission of private patients in public hospitals was obtained through the assistance of the Office of the Prosecutor General and the Supreme Court. Perspectives on current user fee practices and on the feasibility of change were gathered through interviews with nearly 40 facility officials. These included medical officers, administrators, accountants, medical records clerks, and others responsible for overseeing fee collection. The HFS team also discussed cost recovery issues with high-level government officials representing the Ministry of Finance (MOF), Ministry of Economic Development, and Ministry of Health (MOH).

1.3 ORGANIZATION OF THE REPORT

Section 2.0 of this report describes how user fees can benefit health system operations. It briefly outlines the levels of care, infrastructure, and financing of the public health system in Belize. Legislation corresponding to user fees is also reviewed. Section 3.0 analyzes current user fee practices in

Belize. Revenues and costs of a number of facilities and services are compared, and reasons for low fee revenues are examined. These include low prices, ineffective means testing, liberal exemptions, and lax billing and collection arrangements. Section 4.0 discusses different approaches to achieving greater cost recovery in MOH facilities and presents simulations of revenues under different price structures. Options regarding means testing and payment collection, revenue-sharing arrangements, and collection costs are also reviewed. Section 5.0 makes a series of recommendations and outlines technical assistance activities to complement the recommendations.

2.0 OVERVIEW

2.1 THE ROLE OF USER FEES

User fee systems can help solve a number of problems facing government-supported health services in developing countries, including the following: inadequate revenues, inappropriate allocation of public funds, inequitable subsidy systems, and poorly managed utilization. The possible functions of user fees for personal medical services in a government health system are numerous:

- Increase revenue in the health sector;
- Signal to patients that they are consuming valuable resources and discourage overconsumption of services;
- Protect the government from inadvertently subsidizing insurance companies, private physicians, and private patients;
- Indicate to central- and facility-level decision makers the resource needs of different facilities and services;
- Provide the means for better planning by forcing improved accounting of activities and regular information flows on services delivered;
- Change organizational relationships in centralized systems where user fee revenues create incentives and resources for decentralized decision making;
- Supply an additional policy tool for targeting government subsidies in the health sector to those patients least able to pay; and
- Provide resources to improve quality of care and patient satisfaction.

From a different standpoint, cost recovery for personal medical services is not a panacea. Raising the price of government services may reduce utilization by low-income groups. Implementation of a user fee system requires management skills that are often absent at government facilities. This is particularly the case regarding the administration of means testing mechanisms

to protect the poor. Finally, cost recovery is a politically sensitive issue. Because of the lack of information on cost recovery, politicians often have difficulty assessing the economic benefits vis-à-vis the political risks of these systems. A goal of this report is to provide information that will contribute to an informed public debate on cost recovery.

For the most part, current charges in the health sector in Belize play none of the advantageous roles listed above. They represent a negligible proportion of costs, accounting for less than two percent of MOH outlays for medical services. Prices tend to be so low that they have little or no connection to the cost of providing the services. Private patients who have demonstrated their ability to pay are less likely to pay a fee than lower-income, non-private patients.

User fees currently play virtually no role in strategic planning and budgeting in the health system. For example, they are not used to match patient demand--as measured through user fee revenues--with resource allocation. Nor are they considered by central MOH or facility officials as tools to achieve policy objectives, such as increasing quality of services, decentralizing managerial authority, instituting a health delivery model based on a primary health care strategy, or targeting subsidies to specific groups (e.g., the indigent and the elderly). In fact, fees appear to have little to do with the regular functioning of the health service system.

From the facility perspective, fees tend to be viewed as unwelcome and imposed from the outside. A bewildering array of laws govern fee schedules, means testing, and exemptions. Since few health officials know about current rules and laws governing user fees, charges and exemptions vary across facilities. Further, neither the health facilities nor the MOH keeps revenues from the fees; rather, they are sent to the Treasury via the Ministry of Finance. As a consequence, fees represent an additional administrative burden placed on operating units from which those units derive no apparent benefit. Indeed, billing and collection practices are so lax at most MOH facilities that even those groups that are clearly mandated to pay--such as private patients--rarely make any payment, except to the attending physician.

Targeting the poor, improving quality, or reallocating resources to be more reflective of overall health needs are goals requiring additional policy changes beyond the scope of user fee systems. Certainly, prices or a more market-oriented approach to resource allocation will not replace bureaucratic decision

making overnight. Similarly, quality improvement often is contingent upon decentralizing decision making authority to facility managers. Nevertheless, an operational user fee system can contribute to these goals and catalyze further policy change.

As suggested above, user charges could be viewed as a policy instrument rather than a policy objective. In addition to generating revenue, under proper legal and institutional conditions, fees have the potential to foster greater efficiency and equity in resource allocation by signaling to the patients the most appropriate and cost-effective level of care, decreasing frivolous utilization, and increasing the quality of care. Through effective means testing, subsidies can be channeled to special groups (e.g., the poor, women, and children) who may use medical services less than is desirable from a health standpoint.

Further, as in many developing countries, curative care consumes a large portion of the GOB health budget. Urban hospitals and outpatient facilities tend to draw resources away from public health, preventive, and rural services. In Belize these services are generally underfunded or highly dependent on irregular international funding (Norris, et al., 1988). A portion of revenues generated from fees charged to users of curative services can be used to finance preventive and public health services as well as services in poorer rural areas.

It should be understood that personal medical services--such as an outpatient visit or an inpatient stay--are the primary candidates to be considered for fees. Services with a large public health component--vector control, for example--generally are not candidates for user fees. The reason is simple. All citizens benefit from public health services, but the individual beneficiaries have little incentive to contribute voluntarily to the provision of services because if one person pays for the service, everyone else can receive it for free. Tax-financed provision is the most efficient approach for such public goods. Many types of goods and services fall into the gray area between these two extremes, such as patient-related preventive services (e.g., immunizations and prenatal care) that is more problematic. Those services provide benefits for which people may gladly pay, but governments may also view them as services that should be provided notwithstanding ability to pay or, in some cases, willingness to use the service. Although research on the demand for patient-related preventive health services has yet to quantify the relationship, it is generally accepted that patients are more price sensitive to these services

than to curative care. Thus, governments may wish to subsidize them to ensure optimal utilization.

3.0 SOCIOECONOMIC AND HEALTH SYSTEM CHARACTERISTICS

While the subject of this report is cost recovery within the Ministry of Health, it is important to examine the overall context within which the MOH and each of its facilities operate. This section first examines salient demographic, epidemiologic, and economic characteristics of Belize. The discussion on population growth, disease profile, and income levels has added significance because these factors affect the demand for health services. The discussion then turns to an overview of the organization and financing of government health services. The section concludes with a brief discussion of the private medical sector in Belize.

3.1 POPULATION CHARACTERISTICS

Belize has a relatively high rate of population increase (2.5 percent).[2] It is estimated that the country's population of nearly 190,000 (in 1990) will double in approximately 30 years. Fertility rates have been consistently moderate to high during the 1980s, with the total fertility rate ranging from 5.9 children per woman in 1980 to 5.4 in 1987, the most recent year for which estimates are available (CSO, 1989). Migration is a powerful force in Belizean population dynamics. Immigration from other countries in Central America, primarily Honduras and El Salvador, constitutes an important though undercounted source of population growth. Estimates of the size of the refugee population range from 15,000 to 40,000. Because of continued economic decline and civil strife, immigration from Central America is expected to continue during the 1990s. In any case, even if migration to Belize stopped today, the 40,000 migrants in the country today would increase the population by close to 100,000 people in a generation.

Belize also experiences high levels of out-migration: approximately 70,000 Belizeans are said to be living in the United States. Again, reliable current data are scarce, but more than 12 percent of Belizean residents reportedly emigrated in the past decade (MSO, 1989).

Age structure also affects the demand for services. Over the next 25 years, women of child-bearing age and the over-55 population will be the fastest-

[2]World Development Report, 1990.

growing population groups. These age groups tend to consume the most health services.

3.2 EPIDEMIOLOGIC CHARACTERISTICS

Epidemiologic data is scarce in Belize, partly due to the absence of surveillance studies. Underreporting of infant deaths in rural areas is of particular concern. Despite these problems, some clues about the leading causes of morbidity and mortality can be garnered from utilization data.

Overall, the age pattern of mortality reported by the MSO is as follows: moderately high infant mortality (21.3 per 1,000 births), but low compared to elsewhere in Central America; low death rates among older children and young to middle-aged adults (0.5 to 6.0 per 1,000); and much higher rates (41.3 per 1,000) among the elderly. Life expectancy at birth was estimated to be 71.2 years in 1987 (MSO, 1989).

Among infants, diseases originating in the perinatal period, respiratory diseases, and infectious diseases accounted for 40, 21, and eight percent of deaths respectively in 1987. According to the Medical Statistics Office (1989), measles, pertussis, and tetanus currently are negligible causes of death in infants. In 1988, only 19 cases of measles were reported among children under five years of age; no cases of tuberculosis, diphtheria, pertussis, or polio were reported.

Among older individuals, Belize appears to have relatively high mortality associated with heart disease, hypertension, diabetes, cancer, and accidents. Maternity and other female-specific conditions accounted for a total of 38 percent of all hospital discharges in 1989. Other major causes of hospitalization nationally include respiratory disease, gastrointestinal ailments, perinatal conditions, trauma, and hypertension. Not surprisingly, this picture matches well the leading causes of death in the country.

3.3 ECONOMIC CHARACTERISTICS

Real per capita income has increased substantially in Belize during the past decade. Between 1982 and 1990, real GNP per capita increased by nearly 60 percent, from US $1,080 to $1,717 (World Bank, 1990a). In 1989, the GDP per capita of US $1,609 was one of the highest in the region. Inflation has been low, averaging 6.1 percent annually between 1980 and 1989. Driven by projected rapid growth in tourism, it is estimated that real growth will continue during the 1990s, although at a slower pace than in the 1980s (World Bank, 1990a).

The 1980 census and a 1984 labor force survey showed an unemployment rate of 14 percent (CSO, 1984). The Central Statistics Office estimated a 15 percent unemployment rate in 1987 (World Bank, 1989). The 1984 survey reported that nearly two-thirds of the employed population were salaried employees and 22 percent were self-employed, but one-third of the employed worked fewer than 40 hours per week. Government workers represented 31 percent of the employed population, while agricultural workers represented 30 percent. Many of these are migrant workers. Although data on wages is unavailable, based on interviews with employers representing a wide wage of industries and services, the authors estimate that few urban and rural workers earn less than BLZ $100 (BLZ $2 = US $1) per week.

3.4 ORGANIZATION OF GOVERNMENT HEALTH SERVICES

For administrative and political purposes, Belize is divided into six districts, each with a district headquarters in the major town or city. In general, the health services are organized by district. The MOH administers all government health services in Belize. The health system consists of four levels of care: (1) national or referral hospital, (2) district hospital, (3) urban health center, and (4) rural health center and post. All hospitals are located in urban centers. Exhibit 1 shows the estimated population, percent urbanization, and MOH infrastructure by district. The remainder of this subsection centers on personal medical services provided in hospitals and urban health centers. As noted earlier, these services--the focus of this report--are regarded as representing the greatest potential for cost recovery.

EXHIBIT 1
POPULATION AND HEALTH FACILITIES BY DISTRICT, 1990

DISTRICT (URBAN CENTER)	1990 POPULATION		HEALTH FACILITIES			
	NUMBER	% URBAN	HOSPITAL	URBAN HEALTH CENTER[1]	RURAL HEALTH CENTER	RURAL HEALTH POST[2]
Belize (Belize City)	56,131	77.7	1	3	5	0
Corozal (Corozal Town)	28,217	25.8	1	1	4	0
Orange Walk (Orange Walk Town)	29,462	35.3	1	1	3	1
Cayo (San Ignacio)	35,194	47.0	2	2	2	2
Stann Creek (Dangriga)	18,061	37.8	1	1	7	3
Toledo (Punta Gorda)	17,275	15.0	1	1	3[3]	11
TOTAL	184,340	47.3	7	9	24	17

1. Urban health centers in all districts except Belize are located on hospital grounds.
2. Stand-alone facilities only.
3. One facility is closed.

Source: CSO, 1990; population estimates based on 1980 census.

Belize City Hospital (BCH), a 180-bed facility serving Belize District, is the referral hospital for the rest of the country. BCH is Belize's principal inpatient facility, but is also the site for outpatient general medicine, dental, and specialty clinics. Specialty services include pathology, obstetrics, gynecology, pediatrics, internal medicine, ophthalmology, and general surgery. The BCH bed occupancy rate in 1989 was 63 percent. BCH and the Central Laboratory share responsibility for laboratory services. The Central Laboratory, located in Belize City, is a referral facility for the district's hospitals. Belize City is also served by two stand-alone health centers providing a combination of public health and general medical care.

Six district hospitals are located in the five interior districts. Inpatient services are generally limited to delivery cases and, to a lesser extent, simple surgery. District hospitals have from 30 to 50 beds, and their occupancy rates are less than 50 percent. Each facility also contains a health center that provides ambulatory care. They also have limited pharmacy, laboratory, and radiology services. Preventive and public health services also are provided in the urban health centers, but these activities are physically, organizationally, and financially separate from curative services. They are administered and provided by public health nurses.

The health system also operates 24 rural health centers in which rural nurses provide preventive and first aid services. In remote rural areas, 180 trained community health workers provide first aid and treatment for diarrhea and malaria. Most are chosen by the community and work from their homes. The Government has recently constructed 17 rural health posts that are staffed by community health workers.

3.5 FINANCING OF GOVERNMENT HEALTH SERVICES

The MOH is financed through general revenue transfers from the Ministry of Finance. Facility budgets are set at the central level, but BCH and district officials are responsible for all expenditures. Be that as it may, these officials have little control over personnel hiring and assignment, salary levels, or the purchase of drugs and medical supplies. For the most part, these functions are controlled centrally or through the BCH. District officials have even less participation in allocation decision making. For example, the BCH accountant manages fuel and vehicle maintenance expenditures for health facilities throughout the country.

In 1990, expenditures for personal medical services accounted for over two-thirds of the MOH's BLZ $14.6 million budget.[3] According to expenditure estimates for 1990, approximately 11 percent of MOH spending goes toward general ministry administration, 18 percent to preventive and primary care programs, 17 percent to staffing and other recurrent costs of district facilities, 29 percent to recurrent costs at BCH; and 15 percent to Central Medical Stores (CMS). The CMS purchases and distributes drugs and medical supplies to all MOH facilities. But CMS managers state that over 75 percent go to BCH. In 1990, MOH expenditures represented about 9.5 percent of total government outlays, a decrease of five percent since the early 1980s. Between 1983 and 1990, real MOH spending per capita increased from BLZ $41 to $50 (base year is 1980).

Unlike its Central American neighbors, Belize's social security fund (SSB) provides mainly for income loss (due to sickness, old age, maternity, invalidity, etc.) and does not offer comprehensive medical care coverage. Only medical care for work-related accidents and illnesses is covered, and insured workers are required to seek attention in MOH facilities. The SSB pays the MOH--via the Ministry of Finance--an annual lump sum of BLZ $50,000 for services to injured workers.

Finally, since the late 1980s, the MOH has been unable to stay within budget limits. MOH officials acknowledge that in 1990 the MOH faced a BLZ $1.3 million deficit, representing 10 percent of the MOH budget and 16 percent of budgeted medical care outlays. By mid-year, the MOH had already spent its budget allocation for drugs and supplies for fiscal 1990-91. Despite recent increases in outlays for supplies, MOH facilities commonly experience shortages and stock-outs of drugs and medical and non-medical supplies.

The deteriorating situation has prompted officials at the MOF to attempt to impose greater "fiscal discipline" on the MOH. One measure under discussion involves transferring responsibility for drug procurement, inventory, and distribution to the MOF. Both MOH and MOF officials are searching for alternative financing mechanisms that ensure adequate access and service provision and, at the same time, stimulate greater efficiency in facility operations. As part of the efficiency imperative, the MOH's Five-Year Plan (1990-1994) calls for greater autonomy at the district and facility levels. The plan does not discuss whether decentralization will mean the "deconcentration" of authority and allocation decision making to facility medical officers.

---

[3] Exchange rate: BLZ $2 = $1 US.

3.6 THE PRIVATE SECTOR

Unlike in other countries in the Caribbean Basin, the private medical sector in Belize is limited in terms of the number of providers and range of services. Approximately 25 physicians are exclusively private practitioners. Another 17 are specialists, generally located in Belize City, who practice in both public and private settings. Because of the lack of a private hospital, the (exclusively) private medical sector is for the most part limited to outpatient services provided by solo practitioners in store-front clinics. During the last 12 years, physicians established modest inpatient facilities on at least four occasions. These short-lived endeavors were unsuccessful in part because of the low volume of patients and lack of organized practice among physicians. Factors contributing to the relatively underdeveloped private sector include restrictions on physician licensing for private practice, lack of health insurance, the high utilization of hospitals in nearby Mexico and Guatemala by Belizeans, and the widespread practice among government-contracted specialists of admitting private inpatients to public facilities. This latter factor is discussed in Section 4.5.1.

Based on a 1980 survey of general household expenditures, it is estimated that the private sector accounts for approximately 45 percent of Belize's health care expenditures (Central Planning Unit, 1980). Indirect evidence suggests that demand for private services is high. Managers of relatively large hospital facilities in Chetumal, Mexico--three hours by bus from Belize City--estimate that one-third of inpatients and one-half of outpatients are Belizeans.

In sum, Belizeans have three choices when deciding to seek medical attention. They can receive generally free inpatient and outpatient services at MOH facilities; for outpatient services, they can consult with a private physician in Belize or across the border; and for inpatient care, they can leave the country or pay a specialist for services provided in MOH facilities. Specialists generally pay more attention to private patients admitted to MOH hospitals than to non-paying, "government" patients.

4.0 USER FEES: THE CURRENT SITUATION

4.1 THE LEGAL FRAMEWORK

Since 1958, the Government of Belize has enacted a series of laws regulating the charging of fees in government facilities. Exhibit 2 outlines the chronology and principal features of this legislation. The laws stipulate an unambiguous policy toward user fees, granting government facilities the authority to charge for most inpatient and outpatient services. The current fee schedule

EXHIBIT 2
LAWS REGULATING USER FEES AND PRIVATE PRACTICE IN MOH FACILITIES

LAW	YEAR	DESCRIPTION
No. 20 Ch.79	1958	Establishes user fees in government hospitals for inpatient and outpatient services. Assigns responsibility to facility medical officer for rate setting.
No. 31	1967	Sets fees for specific services by income category of patient. Creates five income categories. Sets drug fees (cost plus 15 percent) and x-ray fees (single fee). Sets bed-day fee for patients in private rooms. Forbids private practice in government facilities and during normal working hours for government-contracted physicians. Sets physician fees for private practice.
No. 40	1967	Requires that physicians who provide emergency treatment to a private patient during normal working hours keep a written record of the treatment.
No. 21	1973	Stipulates that any patient whose treatment is covered by insurance or by his employer be classified in Category I (the highest income category).
No. 29	1973	Specifies a new set of charges for x-ray exams that correspond to income categories.
No. 6	1975	Eliminates charges for outpatient visits.

No. 2	1977	Physicians are granted permission to practice privately in government facilities as long as services provided are unavailable in private facilities. Specifies that physicians who use government facilities for private consultations must pay rent. Establishes fees for private inpatients and makes physicians responsible for ensuring patient payment of fees to the government facility.

dates to Law No. 31 of 1967 that specifies prices for all services according to a sliding income scale.[4] This law establishes five income categories for means testing of patients' ability to pay. A patient classified in Category V, corresponding to the lowest income bracket, receives free services, while a Category I patient pays the highest rate. In 1975, Law No. 6 eliminated charges for outpatient general medicine visits. Patients with private insurance are required to pay the top rates (Law No. 21 of 1973).

Several laws attempt to control prices for private medical services, but it appears they have never been enforced. Significantly, specialists are permitted to perform surgery on private patients in MOH facilities as long as suitable private facilities are unavailable (No. 2 of 1977). This statute also sets the specialist fees (for surgical services) and requires that they pay rent to the facility if outpatient consultations are provided to private patients. Physicians who admit private patients are responsible for ensuring that they pay fees due the facility for accommodations, drugs, tests, etc. Private surgical patients also are required to pay a fee for use of the operating theater.[5]

---

[4] Health officials with many years of experience recall that during the 1950s and 1960s, fees were actually higher than charges registered in the 1967 law. Also, they were collected from all patients. At that time, however, facility medical officers set prices.

[5] Although not explicitly stated in the law, the itemization of physician fees and additional charges for private inpatients, coupled with the requirement that they pay for drugs, suggests that they should be placed in the highest income category when computing the institutional bill. According to the fee schedule, drugs are provided free to inpatients who are classified in the three lowest income categories (III, IV, V). Category II patients pay a flat rate, while Category I patients pay cost.

Government administrative regulations dating from 1964 exempt certain categories of civil servants from paying fees. In general, non-professional government employees (e.g., office and blue-collar workers) are exempted from fees under the Government Workers' Rules (Article 15). Female workers are also entitled to free maternity care (Article 29). Professional employees, who may include public officers, department heads, and foremen, are not exempted from fees. Although the previously mentioned laws, enacted in the late 1960s and 1970s, clearly mandate that charges be levied on all users according to income category, government workers continue to receive free care at MOH facilities. Finally, health officials claim that school children are exempt from paying fees for some outpatient services, but HFS could find no supporting regulatory or legal documentation.

The original 1958 statute requires that all revenues generated through user fees be paid to the Government's Consolidated Fund. Article 114 of the Belize Constitution also mandates that revenues raised by the Government be paid into the Fund. The article allows for exceptions, however, through the establishment of special purpose "public funds" through legislation. Currently, several government agencies retain their revenues earned through special taxes and user fees, including the Tourist Board, some national parks, and the new airport authority in Belize City.

4.2 REVENUES

Revenues from user fees currently represent a fraction of the costs of service provision in MOH facilities. Exhibit 3 compares revenues with estimated expenditures--recurrent and total--for BCH, district hospitals, and two health centers in Belize City. It is important to note that these expenditure estimates are for facility-based personal medical (and some preventive) services and exclude outlays for public health and primary health care services. Moreover, since the facility-based estimates displayed in Exhibit 3 are based on a study of real expenditures, they differ from government-budgeted expenditure estimates.[6] [7]

According to the Treasury Department, a total of BLZ $215,300 was collected from user fees in MOH facilities in 1989, representing 1.6 percent of the MOH estimated operating budget (BLZ $1.3 million). Exhibit 3 shows that the MOH recovers approximately 2.4 percent of estimated expenditures for facility-based services. BCH, representing two-thirds of MOH facility-based expenditures,

---

[6] The cost estimates in Exhibit 3 are based on 1985 expenditures (from Raymond, et al., 1987), adjusted for salary increases and inflation. Salaries were increased by 27 percent based on a comparison of a sample of 1985 and 1989 salary levels for several categories of government health workers including nurses, porters, seamstresses, record clerks, typists, and others. Supplies were adjusted by 8.3 percent, corresponding to inflation over the four-year period (CSO, 1989). Actual expenditures in 1989 were probably higher due to higher-than-inflation increases in the price of drugs and supplies since 1985. Also, over this period the volume of drugs and supplies purchased by MOH expanded by an undetermined amount. It is important to note that the Raymond study estimated "unit costs" based on allocated budget expenditures by dividing each facility into cost centers and analyzing how resources are distributed. The authors did not measure resource use in service production. Thus, in an economic sense, they measured the distribution of funds among services, not the costs of the inputs to produce them. The adjusted "cost" estimates are used throughout the report. Although costs and expenditures are used interchangeably, the reader should keep in mind that the latter is the more proper label.

[7] Raymond et al. (1987) estimated BCH total expenditures to be BLZ $6.3 million in 1985. This contrasts with the GOB's budgeted expenditure estimate of BLZ $2.9 million for this facility. The report did not compare total MOH expenditures with total budgeted expenditures.

EXHIBIT 4
PERCENTAGE OF RECURRENT HEALTH EXPENDITURES RECOVERED BY USER FEES BY FACILITY TYPE AND LEVEL OF ADMINISTRATION
(Selected Countries)

COUNTRY	YEAR	FACILITY OR LEVEL OF ADMINISTRATION	PERCENT RECOVERED
China	1986	Hospitals: Type I Type II Type III	90 88 97
Niger	1986/87	National Hospital	15
Bolivia	1988	PROSALUD Health Centers: urban: rural:	 89 61
Zaire	1985/88	Health Zone Hospitals	66-90
Jamaica	1985/86	St. Ann's Bay Reg. Hospital	9
Dominican Rep.	1989	National Laboratory	42

Source: Jamaica: Lewis, 1990
Dominican Republic: La Forgia, 1989
Bolivia: Rosenthal, et al., 1988

recovers only 2.1 percent of recurrent expenses. User fee revenues represent between one and seven percent of recurrent expenditures at district hospitals. Fees are not collected at stand-alone health centers in urban and rural areas. Moreover, while estimated MOH budgeted expenditures increased by 33 percent between 1985 and 1989 (from BLZ $10 to $13.3 million [GOB, 1991]), fee revenues

EXHIBIT 3
USER FEE REVENUES, RECURRENT COSTS, AND TOTAL COSTS, 1989
DISTRICT HOSPITALS, BELIZE CITY HOSPITAL, BELIZE CITY HEALTH CENTERS
(BLZ $)

				PERCENT COST RECOVERY	
DISTRICT HOSPITALS	**REVENUES**	**ESTIMATED RECURRENT EXPENDITURES[a]**	**ESTIMATED TOTAL EXPENDITURES[b]**	**RECURRENT**	**TOTAL**
COROZAL	$19,081	$391,500	$493,096	4.9%	3.9%
ORANGE WALK	$28,799	$422,283	$536,850	6.8%	5.4%
SAN IGNACIO	$7,105	$416,130	$520,612	1.7%	1.4%
DANGRIGA	$9,172	$442,051	$527,791	2.1%	1.7%
PUNTA GORDA	$4,121	$390,002	$491,598	1.1%	0.8%
BELMOPAN	$15,066	$559,479	$661,075	2.7%	2.3%
SUBTOTAL	$83,343	$2,621,443	$3,231,022	3.2%	2.6%
BELIZE CITY HOSPITAL AND CENTRAL LABORATORY					
BCH lab and Central Lab[e]	$13,176	$370,891	$599,726	3.6%	2.2%
BCH Radiology[f]	$5,972	$222,639	$315,985	2.7%	1.9%
BCH - inpatient[g]	$56,421	$4,514,886	$5,222,012	1.2%	1.1%
BCH - outpatient[g]	$56,421	$1,071,128	$1,173,091	5.3%	4.8%
SUBTOTAL	$131,990	$6,179,544	$7,310,815	2.1%	1.8%
BELIZE CITY HEALTH CENTERS					
M. ROBERTS/C. WHITE[c d]	$0	$166,517	$166,517	0.0%	0.0%
TOTAL	**$215,333**	**$8,967,504**	**$10,708,354**	**2.4%**	**2.0%**

(a) Represent expenditures for personnel, drugs, supplies, dietary, vehicle, and central administration. Based on 1985 cost estimates, adjusted by 27% for salaries and 8.3% for all other costs.
(b) Includes capital expenditures.
(c) Fees not collected at health centers.
(d) Based on estimates of personnel and drug expenditures. Capital expenditures were unavailable.
(e) Revenues estimated based on six-month sample.
(f) Revenues estimated based on two-month sample.
(g) Excludes revenues from laboratory and radiology. Distribution based on two-month sample of revenues, March-April.

Source: Raymond et al., 1987.
Revenue Cash Book, Treasury Dept.

rose by less than two percent (from BLZ $212,220 to $215,300) over the same period.

As evidenced in Exhibit 4, collections as a share of recurrent expenditures at Belizean facilities compare poorly with fee revenues at comparable institutions in poorer countries. In the countries listed in the table, fee revenues at the regional and facility levels represent a much larger share of expenditures than is the case in Belize. In sum, user fee revenues have little impact on overall MOH financing of health services and appear insignificant in relation to the financial needs of the facilities. The following five sections detail the reasons for low user fee revenues. The themes include prices, means testing, exemptions, private patients, and billings and collections. We turn first to an examination of current fee schedules.

4.3 LOW PRICES: THE FEE SCHEDULE

The fee schedule currently in use dates from 1967. Exhibit 5 compares prices for a sample of high-volume services provided by government, church mission, and private providers. Annex Exhibits 1, 2, and 3 compare government, mission, and private prices for a selection of high-volume prescription drugs, laboratory tests, and x-ray exams. Because prices have not been adjusted since 1967, they represent a fraction of private sector and church mission charges for comparable services. Facility personnel with many years of experience report that in the early 1960s, fees

EXHIBIT 5
PRICE COMPARISONS FOR A SAMPLE OF SERVICES: GOVERNMENT, CHURCH MISSION, AND PRIVATE PROVIDERS (IN BLZ$)

SERVICE		TYPICAL GOVERNMENT CHARGE[a]	CHURCH MISSION	PRIVATE SECTOR
PHYSICIAN FEES	normal delivery	$25	$130	$300-600
	caesarian section	$50	NP	$400-800
	appendectomy	$65	NP	$400-500
	cataracts	$65	NP	$400-800
	GP visit	$0	$7	$25
	specialist visit	$5	NP	$35
	dental visit	$1	NP	$20
FACILITY FEES	per diem	$2.50	$25	$95
	laboratory tests: "routine"[b]	$0-4[c]	$5-15	$4-8
	x-ray exams: extremities[d]	$4-6	$10-24	$25

Notes: BLZ $1 = US $.50
NP means service is not provided.
(a) Refers to charges to patients who are classified in "income category II" through an informal means test. Most patients are charged the "Category II" rate.
(b) FBC, ESR, blood sugar, BUN, cholesterol, bilirubin, SGO-T, GGP-T, uric acid.
(c) Tests for non-private outpatients are free. Inpatients pay approximately $1 per test at BCH.
(d) Foot, ankle, hand, wrist, finger, and elbow.

were charged for prescription drugs (BLZ $1.00 to $2.00) and for outpatient and emergency visits (BLZ $0.50). These services are now provided for free. By comparison, charges for several costly medical services are lower than prices for many common household goods. For example, the prices of a bottle of beer (BLZ $1.75), a pound of laundry soap (BLZ $1.50), a meal at a fast-food restaurant (BLZ $4.00), or a pound of chicken (BLZ $2.10) are greater than the fees charged for an inpatient bed day (BLZ $2), most laboratory tests (BLZ $0-1), an outpatient visit (BLZ $0), a dental visit (BLZ $1), or a filled drug prescription (BLZ $0) at government facilities. Charges for most radiology exams at BCH are less than the price of a bottle of local rum. Further, it is interesting to note that in 1975, the price of a bottle of Coca-Cola and an MOH outpatient physician visit was BLZ $0.50 and the price of a prescription in the public sector was BLZ $1.00 to $2.00. Currently, the price of the soft drink is BLZ $0.75, while an outpatient visit and prescription drugs at any MOH facility are free.

Although the law specifies a single set of prices according to a person's level of income (discussed below), in practice, facilities ignore the sliding-fee scale, and charge a single price to all patients, depending on the service. However, the typical charge for equivalent services varies among facilities. For example, outpatient specialist visits at Orange Walk Hospital are free, while they are priced at $5.00 at Belize City Hospital. The price of tooth extractions at Orange Walk is BLZ $2.00 compared to BLZ $1.00 at Belize City and Punta Gorda Hospitals. In BCH, inpatients are charged a flat daily fee for medicines, while in Punta Gorda medicines are provided free of charge. Prices for laboratory exams also vary among facilities.

All inpatients at BCH are charged a flat fee for laboratory exams, while no fee is charged except for private inpatients at Orange Walk and Punta Gorda Hospitals. As suggested by Exhibits 3 and 5, prices do not reflect expenditures. A simple exercise will demonstrate just how low fees are when compared to costs. Adjusting Raymond et al.'s (1987) 1985 expenditure estimates for inflation,[8] we estimate that in 1989, an inpatient stay in Belize City, Punta Gorda, and Orange Walk Hospitals cost BLZ $904, $380, and $197 respectively. Yet based on a sample of collected and uncollected bills in each facility,[9] the average total bill presented to inpatients was BLZ $40, $8, and $20, respectively. (As discussed in a later section, most inpatients do not make any payment).

---

[8] See footnote 6 for an explanation of the costing methodology.

[9] See Exhibit 8 for number included in sample.

With this in mind, we can estimate percent cost recovery under optimal conditions. That is, all inpatients are charged and pay an average of BLZ $40. This being the case, the facility would recover only 4.4 percent of costs. From a different standpoint, the Government is essentially providing catastrophic insurance by covering almost the entire cost of a stay. If the Government's contribution is viewed as insurance, the patient's payment of BLZ $40 on a BLZ $904 inpatient bill at BCH is in effect a small (4.4 percent) co-payment.

4.4 LOW CHARGES: APPLICATION OF THE SLIDING FEE SCALE

The means test is a fairly ineffective tool to ascertain a patient's ability to pay. According to current laws, fees are charged according to five income categories. The highest category (I) is based on a weekly household salary of $100 or more, while the lowest category (V) is based on a weekly salary of $15 or less. In practice, most patients are charged fixed fees that correspond to Category II rates.

EXHIBIT 6
A COMPARISON OF FEES BY INCOME CATEGORY

SERVICE	CATEGORY I $100+/week	CATEGORY II $50-99/week	CATEGORY III $25-50/week	CATEGORY IV $15-25/week	CATEGORY V <$15/week
Specialist clinic	$10	$5	$2	$1	$0
Dental clinic	$3	$2	$1	$0	$0
Outpatient drugs	at cost	$1.50	$.25	$0	$0
Inpatient per diem	$5	$2	$1	$.50	$0
Maternity	$40	$25	$15	$5	$0
Major surgery	$50-150	$25-65	$10-40	$5	$0

BLZ $2 = US $1

Source: Law No. 31 of 1967

These categories are listed in Exhibit 6, together with the corresponding charges for a sample of services. If we assume that the fees were considered affordable to most households in 1967, those same fees are even more affordable today. The income categories for the most part are meaningless in terms of current income levels. Most Belizean families with at least one working member make more than BLZ $100 per week and thus should be charged Category I rates,

according to this schedule.[10] Yet Category II charges (for patients earning between BLZ $50 and $100 per week) are the de facto rates charged to almost everyone. Moreover, the fee schedule is loosely applied in MOH facilities. Flat fees corresponding to the highest income classification (Category I) are charged for all x-ray exams and laboratory tests; yet for most other services, lower (Category II) prices are charged. As previously mentioned, prescription drugs are provided free, yet the official fee schedule calls for charges of BLZ $1 for Category II and full cost for Category I patients.

Why is this so? The HFS team observed the means test applied to several patients in three hospitals, and looked at the income statements on medical records for a small sample (60) of specialist clinic patients at Belize City Hospital. As performed by medical records officers, the means test consisted of asking the patient for a simple declaration of weekly, household income. In BCH and the district hospitals, as observed by the HFS team, the clerks classify nearly all patients in Category II with few questions asked. Verification of a patient's household income is based on an honor system and the clerk's memory. Records containing income data are irregularly kept and infrequently updated. There is no attempt to independently confirm household earnings. Rarely do clerks challenge a patient's declaration of income. Housewives and retired persons might respond that income is zero, even though they live in a household with substantial disposable income. Medical records clerks sometimes probe for a more accurate statement of household (as opposed to personal) income, but this is not done consistently. Experienced medical records clerks apparently discount the income statement almost entirely and put patients in Category II so that they at least are charged something.

The clerks who are responsible for applying the means test are uncomfortable with their gatekeeper role, resist pressuring the patients, and

---

[10] According to employers interviewed for this study, few workers in 1990 -- including agricultural laborers -- make less than BLZ $100 weekly. In 1985, the International Labour Organization (ILO, 1986) estimated that the average weekly wage for salaried workers was BLZ $125. Forty percent of salaried workers earned more than BLZ $125 per week; 40 percent earned between BLZ $63 and 124, and 20 percent earned less than BLZ $63. Salaried workers represent approximately 60 percent of the workforce. As discussed in the previous section, wages for government workers have increased by nearly one-third since that time. No data are available on household income or the earnings of the self-employed and informal sector workers.

view the entire process as a burden. Since the test is at best informal, they can be placed in a vulnerable position. Denying services to an individual can result in accusations of favoritism or discrimination. According to one clerk, "I don't want to hear my name on the radio or see it in a headline for refusing services to someone [purportedly] without money."

4.5 FEW PATIENTS ARE CHARGED: THE EXEMPTIONS

Who is completely exempted from paying fees? According to the means test, only Category V patients--the indigent--are totally exempt from fees. In the past, the procedure for such patients was to ask them to present an identification card or letter from the Government's Social Development Department (SDD), or they were referred to the Social Development Department (Ministry of Social Services and Community Development) for certification.[11] This policy was abandoned several years ago for the same reasons the sliding fee scale is not enforced: clerks receive few incentives and unclear upper-level support to enforce current rules regarding means testing and charges. When patients declare that they are unable to pay anything, clerks tend to avoid the cumbersome procedure of referral to the SDD or applying the means test and make the decision themselves, usually in favor of the patient.

As mentioned in a previous discussion, several other categories of patients are exempted from fees, including non-professional government employees[12] and schoolchildren, although practices vary. Government workers receive free services in Belize City Hospital, but they are charged for inpatient medicines in Orange Walk. All school-age children receive free outpatient specialist care in Orange Walk. In Belize City Hospital, however, they must pay for specialist care, but they can be exempted from dental fees if they bring a letter from the school principal confirming their status as bona fide students. In Punta Gorda, all patients must pay dental fees, including BLZ $15 for fillings and BLZ $5 for prophylaxis. These fees are not part of the official fee schedule. In Punta Gorda, it also appears that all inpatients receive bills regardless of occupational status. In all facilities, fees often are waived for the facility

---

[11] Means testing, as performed at the Social Development Department, is discussed in Section 5.2.

[12] Government workers represented 31 percent of the workforce in 1984 (CSO, 1984).

staff's relatives and friends, who are often able to jump the queue, a practice the HFS team observed.

Under the current system, people who know the informal rules of the game--that if they leave the hospital without paying, no one will ever collect from them--are also exempted. Medical officers and clerks in the sample facilities concur that most patients could afford to pay significantly higher fees. One clerk cogently summarized the problem: "The people know the system. They know that no one will pressure them to pay, so they come to the hospital without money . . . most would pay if they had to." Patients who are not formally exempt from paying or who are unfamiliar with the informal rules--such as rural residents and the very poor--are most likely to follow the formal procedures and are thus penalized by the system. It is entirely possible that the combination of the formal and informal rules governing the sliding fee scale, exemptions, and enforcement results in negative equity effects. (See Exhibit 7 on equity, next page.)

4.5.1 A Few Patients are Charged: Private Patients

Specialists who staff Belize City Hospital are permitted to admit private patients, treat them during regular working hours, and charge a fee. They are not permitted to charge "government" patients. Prospective private inpatients generally consult with the specialist in his or her private clinic before admission.

Private practice in government hospitals is a highly politicized issue, and few Ministry of Health officials or hospital staff are willing to discuss it openly. Physicians charge fees for procedures that are similar to the private sector charges listed in Exhibit 5. For example, private BCH inpatients pay a surgeon BLZ $400-800 for a surgical procedure or a gynecologist BLZ $300-600 for a normal delivery. We have already seen that the facility charges fees for inpatient per diem, supplies, drugs, and diagnostic exams. While a comparison of physician charges and facility fees is invalid, it is instructive to compare patient fee payments with facility costs. The average payment by an inpatient to the BCH is only BLZ $40, representing less than five percent of estimated expenditures for accommodations, drugs, supplies, and tests.[13] In effect, the MOH is subsidizing private medical practice in BCH.

[13] As described in the following section, most pay nothing at all.

According to the law, the admitting physicians are obligated to ensure that private patients pay fees due the hospital. But most physicians maintain their own appointment books and surgical records and do not make known the number of private admissions. Sources within the hospital estimate that between one-third and one-half of surgical and maternity cases are private. Some hospital staff report that private patients receive preferential treatment by physicians--usually in terms of greater physician contact and expedited admittance to the hospital. Government patients receive less physician care and are placed on waiting lists.

EXHIBIT 7

THE QUESTION OF EQUITY: WHO BENEFITS FROM PUBLIC SUBSIDIES

The combination of formal and informal exemptions and admissions of private patients results in inequities. Civil servants and other government employees are well off compared to other Belizeans with irregular incomes, yet their care is free. People who live in urban areas tend to be well aware of the informal rules and know how to use them to get around paying fees. In contrast, people from rural areas and those who do not have friends in the right places tend to pay a bill when it is presented and thus are penalized by this system. True indigents in Belize tend to be the elderly, according to experienced employees in Belize City Hospital, so possibly the only effective means test is the age-related exemption of pre-school and school-age children from paying for some services and, informally, of the aged who say they cannot pay.

The preferential treatment of private patients in BCH probably results in less and lower-quality care for government patients. One interviewee noted an older patient from a rural district who arrived at Belize City Hospital on two occasions for scheduled procedures and was told each time that the procedure would have to be rescheduled because the specialist was unavailable. It would not take long for patients to learn how to avoid such a delay: visit the physician in his private clinic. Private patients receive more personal care from their physicians, while government patients receive more attention from nurses. Sometimes there is no bed space for emergency surgical cases because of the high volume of private patients. Private patients also consume scarce public resources (such as drugs, supplies, and physician time) without paying, to the detriment of public patients, who are least able to pay. When the hospital runs out of drugs and supplies (such as syringes, intravenous solutions, and blood test sets), patients or their families are forced to purchase these items in private pharmacies. Inevitably, the burden of these arrangements falls heavily on the very population that the government seeks to serve in MOH facilities: persons who can least afford private practitioners. The winners are private patients and their physicians. Despite their demonstrated ability to pay specialist fees, the Government subsidizes the provision of all other services to private patients. By paying physicians a salary while they practice privately, the Government also subsidizes physician income.

As with classification of patients in income categories, it is nearly impossible to classify patients as private unless they identify themselves as such. Both the patients and their physicians have little incentive to do so. If patients acknowledge their private status, they are charged higher Category I rates, a higher fee schedule for laboratory tests, and a flat BLZ $50 fee for the operating theater, but they are not charged for the procedure. If, by virtue of their silence, private patients are classified as Category II patients, paying even full price for surgical procedures as if they were regular "government patients" would probably result in a lower total bill, *assuming it is ever collected*.

Why do physicians resist declaring their private patients? One reason involves the physician's legal responsibility to guarantee that private patients pay for all hospital services. As revealed below, this is a difficult task. Another reason pertains to physicians' perception of a patient's ability to pay both physician fees and higher hospital charges. If upon discharge a patient has to make additional payments to the hospital, he or she may be unable to afford the total physician fee. In a sense, the physicians' private earnings may depend on the free or near free provision of hotel, nursing, and ancillary services in BCH. Furthermore, acknowledging the true volume of private patients would allow the Government to monitor the proportion of its staff physicians' time spent on public work relative to private practice. Keeping the Government ignorant of true time allocation patterns serves physicians' interests if they are spending a disproportionate amount of time in private practice.

4.6 FEW PATIENTS PAY: BILLING AND FEE COLLECTION

As suggested earlier, MOH facilities have a difficult time distinguishing among categories of patients for billing purposes. Categories include private patients (who should pay full charges), civil servants (who should receive free services), and all others who, according to existing rules, should be charged rates commensurate with income levels. This situation is compounded by a billing system that functions only during normal governmental office hours. In Belize City, Punta Gorda, and Orange Walk Hospitals, according to a sample of records tabulated by the authors, a relatively small proportion of patients are billed. Exhibit 8 demonstrates that only 27 percent of BCH inpatients receive a bill. The corresponding figures for Punta Gorda and Orange Walk hospitals are 109 percent[14] and 50 percent, respectively. Patients who are discharged from a ward or use the emergency room after regular working hours rarely receive a bill. In Orange Walk, no inpatient is billed unless he or she requests a bill at discharge or returns to the hospital at a later date. Remarkably, about half the patients in Orange Walk do attempt to make a payment.

Considerably fewer patients are billed for outpatient services, due in part to the free provision of general medicine services that was mandated in a 1975 law (No. 6). Exhibit 8 shows that under current rules, only 20 percent and four percent of outpatients should have been billed at BCH and Punta Gorda Hospitals,

[14] This percentage includes bills written for patients discharged in December 1989 and all of 1990.

respectively. That is, these percentages represent the proportion of total outpatients who received chargeable services, usually dental and specialist visits.

In addition to a lax billing process, the fee collection system appears equally deficient. Based on samples of paid and unpaid bills,[15] Exhibit 8 shows that in Belize City and Punta Gorda Hospitals less than one-third of inpatients who received a bill paid it. As mentioned, only those patients who desire to make a payment receive a bill in Orange Walk Hospital. If we consider all inpatients, more striking is the estimate that only eight percent make any payment at Belize City Hospital, while 30 percent and 50 percent of Punta Gorda and Orange Walk inpatients pay fees. For Punta Gorda Hospital, the volume of inpatient bills is greater than the number of discharges because the sample includes bills written in 1990 for patients discharged in late 1989. Ledgers from early 1990 did not permit a precise separation of patients' discharge dates from billing dates.

[15]BCH: 287 bills; Punta Gorda: 1,348 bills; and, Orange Walk: 245 bills.

EXHIBIT 8
USER FEE BILLINGS AND PAYMENTS, 1990
BELIZE CITY, PUNTA GORDA, AND ORANGE WALK HOSPITALS

	BCH[a]	PUNTA GORDA[b]	ORANGE WALK[c]
INPATIENT			
Total number of discharges	1050	1227	487
Total number of bills	287	1348[d]	245
Total number of payments	85	374	245
Total amount billed	$11,405	$11,158	$4,991
Total amount paid	$3,011	$4,106	$4,991
Average amount of bill	$39.74	$8.28	$20.37
Average amount of payment	$35.42	$10.98	$20.37
Percent of inpatients billed	27.3%	109.9%[e]	50.3%
Percent of billings collected	29.6%	27.7%	100.0%
Percent of inpatients making any payment	8.1%	30.5%	50.3%
OUTPATIENT			
Estimated total outpatients[f]	10,607	18,670	6,908
Estimated no. of outpatients who should have been billed under current rules[g]	2,115	690	NA
Estimated number of patients who paid	328	221	NA
Estimated amount billed[g]	$48,469	$1,380	NA
Total amount paid	$7,509	$441	$1,714
Estimated percent outpatients billed	19.9%	3.7%	-
Estimated percent billings collected	15.5%	32.0%	-
Est. percent outpat. making any payment	3.1%	1.2%	-

(a) Two-month sample, March-April, 1990
(b) Twelve-month sample, 1990
(c) Three-month sample, July-September, 1990

Turning to outpatient services, payments were collected from 16 percent and 32 percent, respectively, of Belize City and Punta Gorda patients for dental and specialist services. These are the only outpatient services requiring fees (from most adult patients). From a more global perspective, exemptions, legally mandated free services, and lax billing and collection systems combine to make it a rare occurrence for a facility to receive a fee from an outpatient: three percent of Belize City outpatients pay a fee, compared to only one percent in Punta Gorda.

Most patients and their families arrive at the hospital without money because they are either unaware of the fee system or they know that even if they receive a bill, they will not be obliged to pay it. As noted earlier, clerks have little leverage to force patients to pay and can only suggest that the patients pay something.

The Belize City Hospital employs a bailiff to collect unpaid bills, but he expends little or no effort to follow up on unpaid bills. Hospital medical officers and administrators have little incentive to enforce the regulations since they are legally prohibited from retaining the revenues, which are deposited in the Government's Consolidated Fund. Medical records officers attempt to collect from former inpatients when they return to the specialist clinic for a post-surgical visit. However, based on the team's observations in the specialist clinic, former inpatients were provided the service despite unpaid hospital bills. Medical staff obviously are inclined to provide needed services whether or not past due bills are paid. Further, this process fails to capture private inpatients who visit physicians in their private clinics and use the public system only for inpatient care or other free services (such as x-rays through the casualty department or subsidized tests at the Central Laboratory).

4.7 COST OF USER FEE ADMINISTRATION

This section examines administrative costs of the user fee system in Belize City Hospital. Here, as in the rest of this report, cost estimates are based on a 1985 expenditure study (Raymond et al., 1987), adjusted for salary increases and inflation. From the outset, it is important to note that if fees were no longer collected, all clerks would still be needed. Generally, the clerks perform essential functions related to admitting patients, maintaining records, and other duties, some of which are jointly carried out with means testing. In brief, under current practices, means testing and fee collection involve sunk costs; it is difficult to argue that the marginal costs of the process are high. On the other hand, if the hospital adopts a policy of full verification of patient income, this probably would result in additional costs to the facility.

In Belize City Hospital, the administrative costs of means testing, billing, and collection are distributed among several departments. As previously mentioned, the Medical Records Department is responsible for means testing and fee billing. The five medical records clerks have other responsibilities in preparing and filing medical records for patients treated at the hospital.

Based on observations of the clerks' daily routine, we estimate that collectively they spend no more than 20 percent of their time in activities related to user fees, including means testing, billing, and recordkeeping. They spend approximately one-quarter of that amount applying the means test; most of this time relates to visiting inpatients on the wards. Two clerks in the Central Laboratory and Radiology Department also perform some billing and means testing. The means tests mostly consist of inquiring about the private or public status of a patient. We estimate that these clerks spend about five percent of their time applying some form of means test, and another five percent making out bills and maintaining a ledger.

A cashier who is assigned to the Accounting Department staffs the fee collection window, but performs other duties occupying at least 75 percent of her time. The hospital employs a bailiff who is responsible for collecting unpaid bills, but senior hospital administrators report that no unpaid bills have been collected in several years. The bailiff occasionally performs other tasks, but his principal duty remains bill collection. Consequently, the bailiff's full salary is considered an administrative cost related to fee collection.

Exhibit 9 displays administrative costs of the user fee system sorted by billing, collection, and means testing costs. In 1989, the hospital spent nearly BLZ $25,000 administering the user fee program; 14 percent of this amount (BLZ $3,560) relates to means testing. The administrative costs are insignificant in terms of total operational expenditures (Exhibit 3), representing 0.4 percent of total (BLZ $6.2 million) expenditures in 1989.

In 1989, administrative costs of the user fee system represented 19 percent of total fee revenues (BLZ $131,990; See Exhibit 3). However, in 1990 it appears that revenues were declining. For example, during April and May 1990, BCH ledgers indicated that 85 inpatients and 329 outpatients paid fees totaling BLZ $10,520. Assuming that administrative costs did not increase from 1989, during this period it cost the hospital approximately BLZ $4,152 (0.167 X $24,910), or 40 percent of revenues to administer the fee system.

EXHIBIT 9
BELIZE CITY HOSPITAL AND CENTRAL LABORATORY,
ADMINISTRATIVE COSTS OF USER FEE SYSTEM, 1989
(BLZ $)

COST CATEGORY	VARIABLE/DIRECT		FIXED/	TOTAL
	PERSONNEL	SUPPLIES	INDIRECT	
BILLING AND COLLECTION	17,800[a]	100[b]	3,450[c]	21,350
MEANS TESTING	2,700[d]	0	860[e]	3,560
TOTAL	20,500	100	4,310	24,910

(a) Full salary of Bailiff; 20 percent of medical records clerks' time; 10 percent of laboratory and radiology clerks' time; 25 percent of clerk/cashier's time.
(b) Estimated.
(c) 20 percent of fixed costs (maintenance, administration, cleaning, etc.) allocated to Medical Records Department.
(d) Five percent of time of medical records, laboratory, and radiology clerks.
(e) Five percent of fixed costs (maintenance, administration, cleaning, etc.) allocated to Medical Records Department.

5.0 WHAT CAN BE DONE?

5.1 SIMULATED REVENUE EFFECTS OF CHANGES IN FEE STRUCTURE

This section describes four revenue simulations, which present examples of possible pricing options corresponding to the level of cost recovery desired. The simulations should be seen as reference points. Policymakers are encouraged to test different pricing scenarios and projections.

Two simulations involve partial cost recovery pricing structures. The remaining are full recovery schemes. Exhibits 12 through 15 present the price structure, estimated revenue, and percent cost recovery for selected high-volume services for the different simulations. Exhibit 16 compares the price structure for each simulation as a percent of the lowest private sector prices. For reference, the name, objective, and assumptions corresponding to each simulation are outlined in Exhibit 10.

EXHIBIT 10
CHARACTERISTICS AND ASSUMPTIONS OF SIMULATIONS

SIMULATION	PURPOSE	ASSUMPTIONS	EXHIBITS
Baseline	Partial Cost Recovery (current rate structure)	10% pay Category I prices 70% pay Category II prices Provide free care to 20%	7-BCH/ Central Lab 8-Districts
Incremental	Partial Cost Recovery (modified rate structure)	Increase Category II prices Add outpatient fees Provide free care to 20% Lose 10% utilization	7-BCH/ Central Lab 8-Districts
Comprehensive Health Insurance	Full Cost Recovery	Approximate avg. cost pricing 100% pay	9-BCH/ Central Lab 10-Districts

5.1.1 A Brief Overview

For this exercise to provide precise estimates of the revenue potential of the various alternatives, it would be necessary to characterize how the number of visits, prescriptions, length of stay, and mix of providers would change as prices vary. It would be difficult to develop those parameters for any country, but for Belize it has been impossible because there is no knowledge of demand behavior in the system, and prices have not been changed for many years. The only way to handle this problem is to run the simulations under different assumptions.

The simulations are based on 1989 utilization data collected from the Central Statistics Office and the facilities themselves. Exhibit 10 describes the changes that take place from simulation to simulation. Moreover, it is worth repeating that the cost estimates are based on an expenditure study conducted in 1985, adjusted for salary increases and inflation (Raymond et al., 1987). It is important to note that the 1985 study relied on allocations of budgeted expenditures (or full cost accounting) to estimate unit costs. Resource use in the production of services was not measured. In a strict sense, then, the estimated percent of costs recovered in the simulations (described below) actually refers to the estimated percent of expenditures recovered. For discussion purposes, costs and expenditures are used interchangeably.

In the case of the first partial cost recovery simulation, called the baseline simulation, we have assumed no loss of utilization.[16] The prices are so low, it is reasonable to assume that little change in patient utilization will occur if the government charges the fees already on the books. For larger price changes, as is the case in the second partial cost recovery simulation (called the incremental simulation), a decline in utilization is likely.

Here, we assume a 10 percent reduction in use. A 10 percent reduction is also assumed for the second full cost recovery simulation, called the cost-based user fee system simulation. However, it is important to note that this may not hold for "necessary" services such as non-elective surgical inpatient stays. Nevertheless, the 10 percent reduction may be too small over the long run as both

[16] All utilization rates used in the scenarios are based on actual utilization in 1989. The baseline simulation employs the unadjusted utilization rates from that year (see column 2 of Exhibits 12 and 13).

patients and the private sector adjust to the price changes. For example, raising the price of x-rays will probably have little immediate effect on the quantity of exams demanded but may have a long-run effect. That is, as the price rise sparks greater private sector participation in this market, demand for MOH radiology services may ebb.

Putting a fee on prescriptions will probably have a significant effect on the quantity of drugs used. If prices are raised in only one part of the system, such as hospital outpatient facilities, patients are more likely to use other parts of it, such as health centers. However, if prices are raised everywhere simultaneously, demand is less likely to be redistributed. Exhibit 11 summarizes the hypothetical effects of higher government prices on the demand for health services in the public and private sectors.

EXHIBIT 11
EFFECT OF RAISING GOVERNMENT PRICES ON DEMAND FOR HEALTH SERVICES

EFFECT ON HEALTH SECTOR		EFFECT ON DEMAND[a]	
		SHORT-TERM[b]	LONG-TERM[c]
DIRECT	GOVERNMENT	Decrease in quantity demanded due to higher prices.	(1) Decrease in demand if private sector price increases; (2) Increase in demand if quality of govern. services increases; or (3) - Most likely - Indeterminate combination of (1) and (2).
INDIRECT	PRIVATE	Increase in demand and higher prices.	Increase supply and downward pressure on prices.
	(NON-USE)	Increase due to higher prices.	Falls back toward original level (because supply is increasing).

[a]May not hold for "necessary" services such as emergency care and non-elective surgery.
[b]Assumes no change in physical capacity of public or private systems.
[c]Assumes some adjustment in physical capacity takes place.

In sum, we are highlighting two issues: (1) patients' reactions to prices are vital to the validity of the revenue projections, and (2) our assumptions may be arbitrary, but are likely to be more accurate in the short term. Be that as it may, the simulations are designed to allow policymakers to adjust both prices and utilization according to alternative sets of assumptions.

Under a hypothetical comprehensive health insurance scheme, we have assumed the scheme pays the full price for each patient and there is no reduction in utilization (100 percent pay). Of course, in real life an insurance scheme probably will include copayments or deductibles. Finally, for all simulations

involving user fees (e.g., excluding comprehensive health insurance), we assume that 20 percent of patients will receive free care through some type of means testing that targets those who are unable to pay.

Exhibits 12 through 15 contain the results of the simulations and follow a similar format. The first column lists the services. The second column contains the 1989 utilization rates for such services, and estimated costs (in shaded areas). The other columns display the prices, projected revenues, and estimated percent cost recovery for a particular simulation.

A policymaker can choose a target share of costs to be recovered by fees and see the approximate adjustments in prices required to achieve it, or a feasible set of adjustments can be chosen and the adjusted percent of expenditures recovered from fees can be read from the table. Since utilization data are included, additional sets of prices can be applied to individual breakdowns generated by Raymond et al. (1987), the simulations are disaggregated for inpatient, outpatient, and diagnostic services at the BCH/Central Laboratory only.[17] Global projections are presented for the district facilities.

5.1.2 Results: Partial Cost Recovery

Exhibits 12 and 13 show the results of the two partial cost recovery simulations, baseline and incremental, for BCH/Central Laboratory and district hospitals. The first simulation assumes that the Government enforces the current rate structure as stipulated in the law, and eliminates exemptions for special groups (e.g., civil servants). Under the previously described assumptions (70 percent pay Category II rates, 10 percent pay Category I rates, and 20 percent receive free care), the MOH could recover 10 percent of costs, a nearly fivefold increase in revenues (from BLZ $131,990 to $611,943). It is interesting to note that under the current fee structure, over half of recurrent costs for laboratory tests could be recovered, and revenues from them would be four times greater than in outpatient departments.

Doubling most Category II inpatient fees, quadrupling the Category II bed-day rate, and adding outpatient charges for physician visits and drugs, as in the

[17] Since the Central Laboratory performs a large number of tests for the BCH laboratory, utilization, cost, and revenue projections are combined.

case of the incremental simulation, would raise revenues by another 150 percent to BLZ $1.5 million, or 12 times current collections. Interestingly, the simple doubling of lab fees may turn a slight profit in terms of operating expenses, suggesting the possibility for cross-subsidization of other, more costly services.

Since expenditures are lower in the district hospitals, as is evident in Exhibit 13, the baseline and incremental simulations would render 13 percent and 41 percent cost recovery, respectively. The lower expenditures at district facilities would allow policymakers to impose lower fees than in BCH, but offer these facilities a similar level of cost recovery. In other words, to achieve 25 percent cost recovery system-wide would require a lower fee schedule in district facilities than in BCH. Upon reviewing the incremental simulations of Exhibits 12 and 13, we see that the same price structure results in 41 percent cost recovery in the districts compared to 25 percent in BCH.

If increased revenues are the most important objective, BCH may be a good place to start more aggressive cost recovery policies, since it represents such a large proportion of the MOH medical care budget. For example, if BCH begins to recover 25 percent of costs (incremental simulation) instead of the current two percent, as would be done potentially in moving from the current fee structure to a modified price structure, revenue in the whole system would increase from two percent to 14 percent of costs. However, moving district hospitals from the current level of three percent cost recovery to recovering an equivalent of 25 percent of their costs improves the overall system's performance by six percent. Adding to this array, 25 percent cost recovery at Belize City health centers would increase revenues by less than one percent.[18] Significantly, in these latter facilities, this can be accomplished with a BLZ $1 "gate" fee entitling

[18] See Annex Exhibit 4 for simulations of Cleopatra White and Matron Roberts.

EXHIBIT 12
PRICES AND REVENUES UNDER TWO PARTIAL COST RECOVERY SIMULATIONS
BELIZE CITY HOSPITAL AND CENTRAL LABORATORY, 1989
(BLZ $)

SERVICE	PATIENTS, TESTS, AND MEDICINES (1989)	BASELINE (current rate structure, enforced) (7O% Cat.II, 10% Cat.I, 20% free) PRICE Cat. II PATIENTS	PRICE Cat. I PATIENTS	ESTIMATED REVENUES	INCREMENTAL (modified rate structure) (20% free, lose 10%) SINGLE PRICE	ESTIMATED REVENUES
INPATIENT						
Discharges	8,121					
Patient Days	41,682	$2.50	$5.00	$93,785	$10.00	$300,110
Surgery						
-Major operations	967	$65.00	$100.00	$53,669	$130.00	$90,511
-Minor operations	1,348	$25.00	$40.00	$28,982	$50.00	$48,528
Deliveries	2,363	$25.00	$40.00	$50,805	$50.00	$85,068
Medicines	125,046[a]	$2/day[b]	$3/day[b]	$70,859	$3/drug/day	$270,099
Medical Supplies	41,682[c]	$0.00	$0.00	$0	$3/day	$90,033
Inpatient - Subtotal				$298,099		$884,350
Cost/Percent Recovery	$4,514,886[d]			6.6%		19.6%
OUTPATIENT						
Gen. Medicine visits	19,149	$0.00	$0.00	$0	$2.00	$27,575
Specialist visits	10,491	$5.00	$10.00	$47,210	$10.00	$75,535
Emergency visits	28,132	$0.00	$0.00	$0	$2.00	$40,510
Dental visits	5,670	$2.00	$3.00	$9,639	$4.00	$16,330
Injections	11,876	$0.00	$0.00	$0	$1.50	$12,826
Prescriptions	18,946	$0.00	$0.00	$0	$1.00	$13,641
Outpatient - Subtotal				$56,849		$186,417
Cost/Percent Recovery	$1,071,128[d]			5.3%		17.4%
TESTS						
Laboratory tests	93,440[e]	flat fee[f]	flat fee[f]	$208,397[f]	2xflat fee[f]	$375,115[f]
Cost/Percent Recovery	$370,891[d]			56.2%		101.1%
X-ray exams	8,648[g]	flat fee[h]	flat fee[h]	$48,599[h]	2xflat fee[h]	$87,479[h]
Cost/Percent Recovery	$222,639[d]			21.8%		39.3%
ESTIMATED TOTAL REVENUES				**$611,943**		**$1,533,361**
TOTAL COST/PERCENT RECOVERY	**$6,179,544**			**9.9%**		**24.8%**

All figures in BLZ $: BLZ $2 = US $1

(a) Assumes three different medicines per patient day; based on sample of medical charts.
(b) Charge is levied per patient day regardless of number or types of medicines applied.
(c) Number of patient days.
(d) From Exhibit 2.
(e) Represent all tests performed at BCH and Central Laboratory.
(f) From Annex Exhibit 5.
(g) Represent exams performed at BCH.
(h) From Annex Exhibit 7.

EXHIBIT 13
PRICES AND REVENUES UNDER TWO PARTIAL COST RECOVERY SIMULATIONS
DISTRICT HOSPITALS, 1989
(BLZ $)

SERVICE	PATIENTS, TESTS, AND MEDICINES (1989)[a]	BASELINE (current rate structure, enforced) (7O% Cat.II, 10% Cat.I, 20% free) PRICE Cat. II PATIENTS	PRICE Cat. I PATIENTS	ESTIMATED REVENUES	INCREMENTAL (modified rate structure) (20% free, lose 10%) SINGLE PRICE	ESTIMATED REVENUES
INPATIENT						
Discharges	8,195					
Patient Days	26,401	$2.50	$5.00	$59,402	$10.00	$190,087
Surgery						
- Major operations	18	$65.00	$100.00	$999	$130.00	$1,685
- Minor operations	1,662	$25.00	$40.00	$35,722	$50.00	$59,814
Deliveries	2,793	$25.00	$40.00	$60,050	$50.00	$100,548
Medicines	79,203[b]	$2/day[c]	$3/day[c]	$44,882	$3/drug/day	$171,078
Medical Supplies	26401[d]	$0.00	$0.00	$0	$3/day	$57,026
OUTPATIENT						
Physician Visits[e]	95,759	$0.00	$0.00	$0	$2.00	$137,893
Dressings[e]	13,964	$0.00	$0.00	$0	$2.00	$20,108
Minor surgery[e]	1,416	$0.00	$0.00	$0	$2.00	$2,039
Dental Visits	8,114	$2.00	$3.00	$13,794	$4.00	$23,368
Injections	23,143	$0.00	$0.00	$0	$1.50	$24,994
Prescriptions	83,838	$0.00	$0.00	$0	$1.00	$60,363
TESTS						
Lab tests	50,511	flat fee[f]	flat fee[f]	$84,423[f]	2xflat fee[f]	$151,961[f]
X-ray exams	6,659	flat fee[g]	flat fee[g]	$36,813[g]	2xflat fee[g]	$66,264[g]
ESTIMATED REVENUES				**$336,085**		**$1,067,230**
COST/PERCENT RECOVERY	**$2,621,443[h]**			**12.8%**		**40.7%**

All figures in BLZ $: BLZ $2 = US $1

(a) See Annex Exhibit 8 for utilization data by facility.
(b) Assumes three medicines per patient day; based on sample of medical charts.
(c) Charge is levied per patient day regardless of number or types of medicines applied.
(d) Number of patient days.
(e) Specialist and general medicine. Represent separate visits.
(f) From Annex Exhibit 6.
(g) From Annex Exhibit 7.
(h) From Exhibit 2.

the patient to a physician consultation and prescription drug.[19] In short, if all facilities were required to recover 25 percent of costs, or more precisely, expenditures, the system as a whole would achieve approximately 21 percent cost recovery, but would require that prices vary across facility types to reflect differences in costs.

[19] Planners often assume that lower-level facilities have little potential for cost recovery, but this tends to be a mistake. The simple reason is that costs are lower, so small fees at lower levels represent a large offset against costs. (See Annex Exhibit 4.)

As suggested earlier, lower fees in district facilities (and perhaps urban health centers) could signal patients to make greater use of these underutilized facilities.[20] Based on the 1985 expenditure study, the facilities also appear less costly than BCH. This probably results from a case mix that for the most part is limited to general medicine consultations, simple surgeries, and normal deliveries. Charging higher prices at BCH (and lower fees elsewhere) could improve equity. Higher-income urbanites, representing the majority of BCH users, would be paying a greater share of BCH costs. Poorer rural residents would be providing less of a subsidy to BCH through their taxes.

At this time, without an insurance market and with a history of only low charges for health care in government facilities, 25 percent cost recovery may represent an upper limit, especially for inpatient care.[21] Even 25 percent exceeds current revenue levels by orders of magnitude and could be achieved with relatively low fees -- the "simple fees" incorporated into the incremental simulation. This is evident in Column C of Exhibit 16, which demonstrates BCH's incremental rate structure as a percent of the lowest private sector fee for selected services. The nominal fees are still substantially less than the lowest private sector prices. Most fees are less than one-third of private prices. For example, this option would require BLZ $2 and $10 per outpatient visit in general medicine and specialty clinics, compared to BLZ $20 and $35 in the private sector. Inpatient bed-day charges would rise to BLZ $10, compared to BLZ $95 in private hospitals.

5.1.3 Results: Full Cost Recovery

Exhibits 14 and 15 present the results of two full cost recovery simulations: a cost-based user fee system and a comprehensive health insurance scheme. Prices for these simulations were set to recover the estimated full cost of service provision based on the adjusted 1985 expenditure estimates (Raymond, et al., 1987). With the exception of laboratory prices, which are double current fees, under the cost-based scenario, BCH would have to charge on the average four to five times current charges for procedures and medicines, and over 30 times the current bed-day rate to recover recurrent expenditures. As can be seen from prices listed for the cost-based user fee system, an inpatient stay at full cost

---

[20] Reducing the flow of patients to BCH is a current MOH priority.

[21] This statement is speculative. Exhibit 4 shows that rural hospitals recover up to 90 percent of costs in Zaire, one of the poorest countries in the world.

would be truly catastrophic for most Belizeans. With the exception of laboratory services, the hospital would have to charge four to five times current fees to recover the full (recurrent) expenditures for services. The bill for a typical maternity stay in BCH could be over BLZ $400, while major surgery requiring four days of inpatient care would cost the patient more than BLZ $1,000. Exhibit 16 (column D) shows that the prices for the cost-based scenario in BCH would approximate private sector prices.

These cost-based simulations provide an indirect measure of inefficiency in public sector delivery of services. Prices for some services, such as radiology, would be higher than at private facilities. Most inpatient services would be priced at 88 to 93 percent of private prices. Unless the Government could deliver considerably improved services at those prices, it undoubtedly would lose many patients. Given the current conditions of BCH, it is likely that even clients who can pay the high prices under a cost-based system would be unwilling to do so at that facility. It is also worth noting that the average cost per inpatient day at BCH (BLZ $125)[22] is greater than the private sector price (BLZ $95). These higher prices probably will result in a greater reduction in utilization than the 10 percent decrease assumed for the cost-based scenario (see Exhibit 14). Again, the simulation allows the reader to postulate other utilization rates, and measure their effect on prices and revenues.

Exhibit 15 shows that under a cost-based, full recovery system, charges for most services in district hospitals would be half the BCH price. But these prices are probably still high for many rural inhabitants. For example, a bill for a normal delivery (with three bed-days) in a district hospital could be BLZ $350, representing nearly three-quarters of the average annual wage (in 1985). We can safely assume that rural wages are lower than the national average (BLZ $500 in 1985).

Without a third-party payment system, fees set at a level high enough to cover those costs would impose a great hardship on almost all patients. Attempts to collect unpaid bills would tend to go unheeded. However, given the high cost of inpatient services, the Government could reasonably expect a contribution even by public patients sufficient to cover one day in the hospital. In this case the subsidy would still be enormous. Under the comprehensive health insurance scenario displayed in Exhibits 14 and 15, the facilities would recover full cost, but charges would be 30 percent less than the cost-based option. This

[22] Calculated from Exhibit 8.

scenario assumes minimal copayments.[23] Lower charges are possible with comprehensive health insurance, because there is no need to make up for losses incurred in the provision of free care, or due to lower utilization, as is the case for the cost-based scenario.[24] As seen in Exhibit 16, prices under comprehensive health insurance in BCH would range from one-half to two-thirds of private prices for most services, significantly lower than the cost-based simulation. However, under the assumption of minimal copayments, these prices are relevant only to insurers, not to consumers.

[23] For example, a 10 percent copayment for hospital services would result in out-of-pocket expenditures lower than the current price structure (baseline scenario, Exhibits 12 and 13). Here, we assume that copayments will not reduce utilization from current levels.

[24] Our orientation is the percentage of costs recovered more than the changes in total costs or total revenues. We implicitly assume constant costs if utilization expands, so our percent cost recovery estimates would be unaffected by increased quantity demanded. Assuming constant unit costs, higher utilization would generate revenues to cover the additional total costs. Percent cost recovery would remain unchanged. However, from an insurer's and consumer's perspective, higher utilization may result in higher premiums or increases in copayments.

EXHIBIT 14
PRICES AND REVENUES UNDER TWO FULL COST RECOVERY SIMULATIONS
BELIZE CITY HOSPITAL AND CENTRAL LABORATORY, 1989
(BLZ $)

SERVICE	PATIENTS, TESTS, AND MEDICINES (1989)	COST-BASED USER FEE SYSTEM (20% free, lose 10%)		COMPREHENSIVE HEALTH INSURANCE (100% pay)	
		SINGLE PRICES	ESTIMATED REVENUES[a]	SINGLE PRICES	ESTIMATED REVENUES[a]
INPATIENT					
Discharges	8,121				
Patient Days	41,682	$84.00	$2,520,927	$60.00	$2,500,920
Surgery					
-Major operations	967	$350.00	$243,684	$250.00	$241,750
-Minor operations	1,348	$70.00	$67,939	$50.00	$67,400
Deliveries	2,363	$280.00	$476,381	$200.00	$472,600
Operating/birthing room	4,678[b]	$70.00[c]	$235,771	$50.00[c]	$233,900
Medicines	125,046[d]	$8/drug/day	$720,265	$6/drug/day	$750,276
Medical Supplies	41,682[e]	$8/day	$240,088	$6/day	$250,092
Inpatient - Subtotal			$4,505,056		$4,516,938
Cost/Percent Recovery	$4,514,886[f]		99.8%		100.0%
OUTPATIENT					
Gen. Medicine visits	19,149	$16.80	$231,626	$12.00	$229,788
Specialist visits	10,491	$35.00	$264,373	$25.00	$262,275
Casualty visits	28,132	$21.00	$425,356	$15.00	$421,980
Dental visits	5,670	$14.00	$57,154	$10.00	$56,700
Injections	11,876	$7.00	$59,855	$5.00	$59,380
Prescriptions	18,946	$3.50	$47,744	$2.50	$47,365
Outpatient - Subtotal			$1,086,108		$1,077,488
Cost/Percent Recovery	$1,071,128[f]		101.4%		100.6%
TESTS					
Laboratory tests	93,440[g]	2xflat fee[h]	$375,115[h]	1.5xflat fee[h]	$390,744[h]
Cost/Percent Recovery	$370,891[f]		101.1%		105.4%
X-rays	8,648[i]	5.5xflat fee[j]	$240,566[j]	4xflat fee[j]	$242,996[j]
Cost/Percent Recovery	$222,639[f]		108.1%		109.1%
ESTIMATED TOTAL REVENUES			**$6,206,845**		**$6,228,166**
TOTAL COST/PERCENT RECOVERY	**$6,179,544[f]**		**100.4%**		**100.8%**

All figures in BLZ $: BLZ $2 = US $1

(a) Assumes 100% pay.
(b) Total number of surgeries plus maternity cases.
(c) Anesthesia.
(d) Assumes three medicines per patient day; based on sample of medical charts.
(e) Number of patient days.

(f) From Exhibit 2.
(g) Total tests performed at BCH and Central Laboratory.
(h) From Annex Exhibit 5.
(i) Total exams performed at BCH.
(j) From Annex Exhibit 7.

EXHIBIT 15
PRICES AND REVENUES UNDER FULL COST RECOVERY SIMULATIONS
DISTRICT HOSPITALS, 1989
(BLZ $)

SERVICE	PATIENTS, TESTS, AND MEDICINES[a] (1989)	COST-BASED USER FEE SYSTEM (20% free, lose 10%)		COMPREHENSIVE HEALTH INSURANCE (100% pay)	
		SINGLE PRICES	ESTIMATED REVENUES[a]	SINGLE PRICES	ESTIMATED REVENUES[a]
INPATIENT					
Discharges	8,195				
Patient Days	26,401	$40.00	$760,349	$30.00	$792,030
Surgery					
-Major operations	18	$175.00	$2,268	$125.00	$2,250
-Minor operations	1,662	$35.00	$41,870	$25.00	$41,538
Deliveries	2,793	$140.00	$281,534	$100.00	$279,300
Operating/birthing room	4,473[b]	$35.00[c]	$112,707	$25.00 (c)	$111,813
Medicines	79,203[d]	$4/drug/day	$316,812	$3/drug/day	$237,609
Medical Supplies	26401[e]	$4/day	$105,604	$3/day	$79,203
OUTPATIENT					
Physician Visits[f]	95,759	$8.00	$551,572	$6.00	$574,554
Dressings[f]	13,964	$8.00	$80,433	$6.00	$83,784
Minor surgery[f]	1,416	$8.00	$8,156	$6.00	$8,496
Dental Visits	8,114	$7.00	$40,895	$5.00	$40,570
Injections	23,143	$3.50	$58,320	$2.50	$57,858
Prescriptions	83,838	$1.75	$105,636	$1.25	$104,798
TESTS					
Lab tests	50,511	1.5xflat fee[g]	$113,971[g]	1xflat fee[g]	$105,528[g]
X-ray exams	6,659	3xflat fee[h]	$99,396[h]	2xflat fee[h]	$92,033[h]
ESTIMATED REVENUES			**$2,679,522**		**$2,611,362**
TOTAL COST/PERCENT RECOVERY	**$2,621,443[i]**		**102.2%**		**99.6%**

All figures in BLZ $: BLZ $2 = US $1

(a) Assumes 100% pay.
(b) Total number of surgeries plus maternity cases.
(c) Anesthesia.
(d) Assumes three medicines per patient day; based on sample of medical charts.
(e) Number of patient days.
(f) Specialist and general medicine. Represent separate visits.
(g) From Annex Exhibit 6.
(h) From Annex Exhibit 7.
(i) From Exhibit 2.

EXHIBIT 16
PRICES OF FOUR COST RECOVERY SIMULATIONS AS A PERCENT OF LOWEST PRIVATE SECTOR PRICES, BELIZE CITY
(BLZ $ and percentages)

	(A) LOWEST PRIVATE PRICE[a]	(B) BASELINE	(C) INCREMENTAL	(D) COST-BASED USER FEE SYSTEM	(E) COMPREHENSIVE HEALTH INSURANCE
INPATIENT					
Patient Day	$95	3%	11%	88%	63%
Surgery					
-Major operation	$400	16%	33%	88%	63%
-Minor operation	$75	33%	67%	93%	67%
Delivery	$300	8%	17%	93%	67%
OUTPATIENT					
Gen. medicine visit	$25	0%	8%	64%	48%
Specialist visit	$35	14%	29%	100%	71%
Dental visit	$20	10%	20%	70%	50%
TESTS					
Laboratory test	$19[b]	16%	31%	24%	16%
X-ray exam	$31[c]	23%	46%	125%	91%

All figures in BLZ $: BLZ $2 = US $1
(a) Prices based on sample of private providers in Belize City.
(b) Based on weighted average of a sample of tests performed at Belize City Hospital and Central Laboratories. See Annex Exhibit 5 for tests.
(c) Based on weighted average of exams performed at Belize City Hospital. See Annex Exhibit 7 for exams.

5.1.4 Simulations: Summary

As a short-term strategy, it is simple to raise large amounts of money using small, all-encompassing fees on high-volume services. Essentially, doubling the current prices and imposing nominal fees for outpatient services, as demonstrated in the incremental simulation, increases total collections under the current system by thirteen-fold (from BLZ $0.2 to $2.7 million), assuming the fees are enforced. Such a change is also unlikely to reduce patient volume significantly because the prices are still quite low. In contrast, moving to full cost recovery through a cost-based user fee system would drive large numbers of patients into the private sector, thus reducing the probability that the additional revenues would actually materialize. From a revenue-enhancing standpoint, small price increases on high-volume services represent the most attractive short-term strategy for the public sector.

To achieve the greatest degree of cost recovery, however, a comprehensive health insurance system may be the best option. It is beyond the scope of this report to outline all the possible elements of a comprehensive health insurance scheme.[25] The costs and benefits of that approach must be carefully compared before drawing conclusions. However, at a minimum, a scheme would contain four features: (1) the entire population participates; (2) a person pays a fixed amount on a monthly or weekly basis (a premium) to a third party such as a health insurance fund; (3) the payment entitles the person to coverage of a predetermined package of services; and (4) when the person seeks medical care for a covered service, the fund can reimburse (or pay on a prospective basis) the facility for services rendered to the patient. Although fees may be negotiable, they generally can approximate average costs. It is not necessary under such an approach that all services be financed, administered, or delivered by the Government.

As evident in the cost-based simulation (Exhibits 14 and 15), full-cost fees, particularly for inpatient care, are unaffordable for large segments of the population. In effect, the Government will still have to provide large subsidies for hospital care.

For basic services delivered at outpatient facilities, collecting user fees may result in nearly full cost recovery. The case of outpatient drugs provides a good example.

Exhibit 17 compares government costs with private retail prices for 30 high-volume drugs distributed to outpatients in MOH facilities. MOH pharmacists identified these drugs as representing approximately 75 percent of outpatient volume in seven facilities. The MOH currently purchases two-thirds of drugs and

[25] Comprehensive health insurance has advantages and disadvantages. Equity, efficiency, and overall cost considerations should be weighed carefully before proceeding with such a system. These issues are discussed in an HFS Technical Note on Belize (La Forgia, 1991).

EXHIBIT 17

A COMPARISON OF GOVERNMENT COSTS WITH PRIVATE SECTOR PRICES FOR SELECTED HIGH-VOLUME OUTPATIENT DRUGS, AUGUST 1990

(BLZ $)

DRUG[a]	GOVERNMENT COST[b] (p/unit)	GOVERN. COST AS PERCENT OF PRIVATE RETAIL PRICES[c]	
		LOWEST PRICE	HIGHEST PRICE
Acetominophen	$0.02	50%	12%
Ampicillin	$0.08	62%	44%
Ampicillin	$1.55	69%	38%
Aspirin	$.004	20%	6%
Chlorpheniramine Maleate	$0.01	11%	8%
Chlorpropamide	$0.02	29%	13%
Choloraphenicol	$0.01	10%	4%
Cloxacillin	$0.10	53%	50%
Diazepam	$0.06	150%	86%
Erythromycin	$0.07	29%	19%
Ferrous Sulfate	$0.004	13%	10%
Folic Acid	$0.001	3%	1%
Frusemide	$0.01	33%	11%
Gentamycin	$0.12	24%	12%
Hydrochlorthiazide	$0.01	33%	25%
Ibuprofen	$0.03	27%	19%
Indomethacin	$0.01	9%	4%
Mg Trisilicate	$0.01	10%	10%
Mebendazole	$0.05	45%	23%
Mebendazole	$1.48	74%	23%
Methyldopa	$0.06	40%	30%
Metronidazole	$0.02	17%	15%
Nefedipine	$0.08	15%	9%
Penicillin Ben.	$0.86	47%	8%
Penicillin Pro.	$0.69	22%	18%
Propranolol HCL	$0.01	9%	8%
Ranitidine	$0.32	26%	15%
Salbutamol	$0.01	10%	3%
Tetracycline	$0.02	33%	29%
Trimetoprim Sulfameth.	$0.05	39%	12%

[a] Represents 70-80% of outpatient drug volume in MOH facilities.
[b] PAHO-FORMED prices; includes 23% shipping charge.
[c] Based on sample of prices from four private pharmacies in Belize City.

Source: Annex Exhibit 3

medical supplies from international sources through the PAHO/FORMED program.[26] Exhibit 17 shows that if the MOH set fees according to purchase and shipping costs, the prices for most drugs would still be significantly less than the lowest private sector prices. The Government estimates that expenditures for drugs and medical supplies represent one-fourth of total outlays for medical services at all facilities (GOB, 1991).

If the Government maintained the health budget near the current level (for approximately two years) and encouraged facilities to invest a substantial proportion of initial revenue collections in improving services, repairing their physical plants, and replacing equipment, patients would observe an instant benefit directly attributable to the new fees. Because of improved working conditions, staff would realize the benefit of collecting the money. In the short term, levels of cost recovery far exceeding the historical experience may be feasible in Belize. In sum, a carefully thought-out cost recovery program could be used to upgrade curative services at each level so that patients would see improvements connected to the payment of the fees.

To be conservative, given the many assumptions required to produce the revenue figures in Exhibits 12 through 15, these figures should be viewed as high estimates, probably by as much as 20 percent. The estimates are useful, however, because they are comparable to each other (they are based on the same 1989 utilization data), and the experience of other countries (see Exhibit 4) suggests that if prices are raised and services are improved, use is likely to rise after an initial reduction, especially if quality is improved.

In addition, demand studies done in a variety of countries suggest that the demand for outpatient care is extremely price inelastic (quantity demanded is virtually unaffected by modest changes in prices), and we must keep in mind that fees in Belize are only a fraction of what they were in the 1960s in real terms. Since that time, per capita income has approximately doubled. While the revenue estimates may be close to the mark, they should not be taken as much more than a reference point.

The high level of uncertainty in the estimates suggests that a good strategy would be to experiment with price changes in "test markets" and

---

[26] FORMED (Fondo Rotario de Medicamentos Esenciales) is a revolving drug fund operated by PAHO (Pan American Health Organization) to provide low-cost drugs to Central American countries. Prices are generally 40 to 50 percent lower than local purchases. The Government is planning to purchase a larger volume of drugs through the program.

accompany those experiments with population-based demand surveys before and after. Finally, any change in pricing practices in the public sector must be accompanied by a major public education effort and must demonstrate quick improvements in quality of health care services that can be directly associated with the price changes.

5.2 MEANS TESTING: PROTECTING THE POOR

In a number of developing countries where the resources devoted to health are declining, the presumption that all patients should receive free services has been replaced by the belief that all patients should contribute to the cost of their care. Given that Belize has one of the highest per capita income levels in Latin America and the Caribbean, it is difficult to argue that many people would be unable to pay the price of an inpatient admission or outpatient visit in MOH facilities at even twice the current low rates. Given the price comparisons made earlier, arguing that people cannot pay these prices is tantamount to arguing that the price of beer, soft drinks, or chicken should be waived for a large segment of the population. Small fees represent a reasonable tool to discourage frivolous use, but they are unlikely to impede use of essential services.

As noted in Section 1, means testing in MOH facilities is dysfunctional. Attempting to identify the poor directly at the point of admission is an onerous task. Many problems can be avoided by developing a reasonable set of affordable fees, such as the prices listed in the incremental simulation, and enforcing them strictly for all patients at all locations.

Nevertheless, some cannot afford even the low fees. In the past, the Social Development Department (SDD) of the Ministry of Social Services and Community Development worked with the MOH to identify those who could not pay. During the 1980s, this relationship ceased to exist because of unenforced rules and lax upper-level support. The SDD has social workers in all districts who are trained to perform means tests for the Government's welfare program. The recipients are mostly the elderly, the unemployed, and children in families with no stable source of income. They receive weekly cash subsidies or vouchers for food and clothing purchases. With the exception of the elderly, most cases are reviewed biannually to evaluate eligibility. The means test entails an interview and a home visit. An estimated 3,000 to 5,000 Belizeans, representing about three percent of the population, receive some kind of social assistance on a permanent or temporary basis. Case records of all social assistance recipients are kept at SDD district offices.

Belizeans receiving social assistance are easily identified because they carry a card or can produce a check stub. Clearly, this group could be granted free access to MOH services. SDD officials claim that in the past, means test forms were completed at BCH and then sent to the SDD for investigation. This practice could be reestablished. All patients desiring a fee waiver can seek certification from the SDD. The SDD also has procedures for waiving medical fees on a one-time basis through the Immediate Assistance Program.

A case can be made that the Government should subsidize certain preventive services for women and children from low-income families not receiving social assistance. Fees may unduly affect their access to and utilization of services. However, these groups are difficult to target. For example, children under five years of age can receive free well-baby care. Since poorer families tend to have more children than non-poor families, this strategy will indirectly target children in the former group. Similarly, pre-natal and post-partum care for women at risk also may be subsidized. Perhaps the best strategy for preventive services is to reduce prices for those services that are more price elastic and raise them for services that are less price elastic.[27] Preventive services are generally found to be more price elastic than curative care.

Another strategy for protecting the poor is to build into the system low-cost alternatives that allow a patient to choose an adequate but lower-priced service that would fulfill his or her needs. An example would be to charge a higher fee at the BCH outpatient department to reduce congestion, cut frivolous use, and raise needed revenues while charging lower prices at urban health centers. Referrals to BCH from the urban health centers and district facilities would, of course, have a lower charge or might be included in the fee at the health center. Rural health centers--usually staffed by nurses who provide primary health care--could represent a free alternative to more costly urban health center visits, which in turn could provide an alternative to even more costly hospital visits.

Of course, some people always fall through the cracks, emergencies occur during which care cannot be denied, and some people continually test the system for ways to avoid fees. If the facilities make a concerted effort to collect fees, and charge fees in such a way that low-cost alternatives are always

---

[27] For a price elastic service, an increase in price will disproportionately reduce the amount purchased. An inelastic service will experience little reduction in quantity purchased with an increase in price.

available, these problems will be minimized, but not eliminated. The SDD Immediate Assistance Program provides a formal basis for handling such problems.

5.3 PRIVATE PATIENTS

Policymakers may want to charge higher fees for private patients in BCH. However, without the cooperation of the specialists, it will be difficult to identify private patients. This problem has no easy solution. Some MOH officials suggest outlawing private practice in MOH facilities, but this would drive many patients to the private sector (in Belize and Mexico), reducing revenue potential for the hospital. It also may compel some specialists to abandon the public service. From the standpoint of strengthening the private medical sector in Belize, this is a preferable option. The MOH may experience a shortfall in specialists, however, unless changes are made in physician licensing legislation.

One short-term measure would be to establish the same fee schedule for all patients, private and public. In this way, the patient would have no incentive to conceal his or her status, allowing the hospital to monitor private admissions. Through administrative regulation, BCH administrators can limit the number of private admissions (in each service) as a means to reduce discriminatory practices against non-private patients.

Two long-term solutions would be to establish private wards in the new BCH or develop comprehensive health insurance. Regarding the latter option, it would make little difference to a hospital or physician whether a patient was private or public, as they would collect the same payment for each.

5.4 FEE RETENTION, DECENTRALIZATION, AND QUALITY

Under current fee collection practices in Belize, in which all fees are forwarded through the Ministry of Finance to the Treasury, a user fee becomes essentially a tax on illness episodes. The inability of the facilities to retain fee revenues creates disincentives to managers to bill patients and collect payments. Indeed, the inefficient billing and collecting systems observed in the sampled facilities can be seen as a logical response to a user fee system that converts facility clerks into tax collectors.

The basic principle distinguishing a fee from a tax is that the person paying the fee benefits proportionately from the services provided in return for paying the fee. Since there is no direct link between what a consumer would pay

and the amount of funds available to the MOH to provide services, the proportionality of benefits to fees paid may not hold. This could be remedied, in part, by allowing the MOH (and the facilities) to retain fee revenues to use in providing services.

5.4.1 Quality

In addition to providing collection incentives, allowing facilities to retain revenues is important to staff and public acceptance of a user fee system. It is unlikely that user fees can be imposed successfully without concomitant quality improvements. Generally, people would resist paying for the services that they previously received free of charge. Quality--or perceived quality--may influence utilization more than price does. Econometric models based on data from household demand surveys in Nigeria, for example, suggest that if the quality of government services improves as prices rise, demand for services will increase. User fee revenues will not translate into improved quality unless, in one way or another, the fees represent a net increase in the budget that facility managers spend on improving the quality of service delivery.

5.4.2 Decentralization

A brief discussion of a few approaches can reveal policy options for revenue retention. The most radical approach, but also the most economically efficient, would be to treat hospitals as if they were independent or parastatal institutions. At a minimum, this option would entail: (1) autonomous decision making related to hiring practices and compensation; (2) responsibility of managers for financial risk; and (3) some control over price setting. The role of government subsidies would require redefinition. Another option would be to treat lower-level facilities--urban and rural health centers--as independent agencies raising some of their own funds, or as extensions of the hospital with varying degrees of financial and medical independence. In the latter case, the hospital would be responsible for creating an economically efficient and financially viable public health care system within its jurisdiction. Such an approach is possible for district hospitals. A community health board of directors can oversee each component or the system as a whole. The underlying principle is that collection and retention of fees provide the incentive and the means for decentralized management and control of the institutions providing health services. How far to go with that decentralization is a matter of judgement, but a system that is serious about user fees will move in that direction.

Another advantage of the decentralization is that it would free the central-level MOH to concentrate on public health and promotional activities, while the hospital/clinic system would provide curative services. In terms of curative care, the MOH would step into more of a regulatory role than it has played historically. Continuing subsidies to curative services would be negotiated between the curative care institutions and the various levels of government, not to subsidize the facilities per se, but to subsidize specific patients (e.g., the poor) and to reimburse hospitals for public services they provide.

All approaches require minimally that the facility collecting the funds have some independence. That independence probably requires a board of directors composed partly of client representatives.

Finally, policymakers may consider retaining some centralized functions. For example, economies of scale may be realized through centralized purchases of drugs, medical supplies, and equipment. However, centralized procurement and distribution systems may become lethargic unless they incorporate incentives that foster timely and efficient service to the facilities.

5.4.3 Revenue Sharing

Once the degree of decentralization has been determined, another question is whether and how to split the fee collections between the institution and the various levels of government that have an interest in the revenue. The implication in the examples above is that the institution retains all money collected. Politically, this may not be a feasible option. The best approach may be to phase in a revenue sharing scheme. There are two options:

- A proportional tax is levied on revenues: e.g., 50 percent to the institution, 25 percent to the central MOH, and 25 percent to the MOF. This approach recognizes that upper-level bureaucracies provide services to the collecting facility. The facility knows it can keep a fixed percentage of all collections, so it has an equally strong financial incentive to collect every dollar.

- The facility keeps an increasing percentage of each dollar collected: In effect, other levels of government are taking a cut of collections for fixed administrative or other costs up front. This approach increases the facility's financial incentive to raise money as more is collected.

Both options can incorporate an added equity advantage. Fees retained by the MOH can be used to allocate additional resources in favor of poorer groups in rural areas or to fund preventive services.

5.4.4 MOH Subsidy Reduction

Recognizing that the central subsidy to facilities probably will decline as the facilities collect more of their revenue from patients, policies must be well-defined, clearly understood, and stable over a reasonable period of time to provide the intended incentives. In other words, it is important that facility-level administrators and boards know the rules of the game. Agreement must be reached on the relationship between the institution and the governing ministry regarding pegging minimal levels of central support. There are at least two alternatives:

- Minimum nominal funding: Agreement to maintain funding at the existing nominal level or some fraction thereof. This approach allows for a gradual reduction in real funding, assuming there is price inflation, allowing the institution to slowly adjust to the change.

- Minimum physical support, or minimum real funding: Provide a minimum level of government support to the institution. This can be a block grant to cover a proportion of salaries. The facility becomes responsible for all expenditures above that minimum, such as those for more staff, drugs, supplies, and minor equipment.

5.4.5 Summary

The main conclusion of this section is that decentralization is an implicit element of a user fee strategy, and essential to its success. It is a way to create the incentives to encourage fee collections, which, in turn, provide the resources to invest in quality improvement. If institutions find that they cannot benefit from collecting fees and patients see no discernable difference in the quality or quantity of services provided for those fees, the user fee strategy is likely to fail. It will collect little additional revenue, alienate patients, and reduce staff morale.

Decentralization, however, is not anarchy. Rules on accounting, auditing, and reporting must be built into the system. Many unexpected issues will arise: successful institutions will seek to expand, so procedures for planning investments in the sector will have to be monitored carefully; many facilities will seek the power to enter credit markets individually, so policy decisions

will have to be made on that issue; some facilities will have favored access to charitable donations, and a mechanism for sharing those gifts might be warranted.

The central MOH will take on a new mission. This mission has less to do with running curative health services and more to do with public health, promotional activities, environmental health, health education, regulating the system of public and private institutions, managing targeted subsidies, and supervising insurance systems.

5.5 COST OF COLLECTION

The cost of collecting small fees in the public system is often cited as a reason not to collect them at all. In Belize, where for the most part, the MOH is considering changes in a fee schedule, marginal cost is all that matters. Most of the costs of collecting fees are sunk costs, that is, costs that have already been incurred regardless of whether means testing is performed, bills are drawn up, or fees are collected.

If the facility collects only two percent of its expenditures, its collection costs will be high relative to revenues. As collections increase, the administrative cost falls rapidly as a percentage of collections. This statement applies to all hospitals in Belize; they all have the basic infrastructure in place to collect user fees. Moreover, if the responsibility for means testing is transferred to the Social Development Department (SDD), clerks probably will have additional time to handle billing and collection activities for the increased volume of paying patients.[28] Essentially, the costs of means testing will be shifted to the SDD. However, since means testing is the principal task of the SDD, the marginal cost of administering means testing for the MOH probably is minimal.

The relevant question for Belize, therefore, is how great a decrease there would be in the number of people involved in fee collection if fees were no longer collected. At facilities where fees are already collected, all clerks will still be needed. As explained previously, the clerks perform essential functions related to admitting patients, maintaining records, and other duties jointly carried out with the collection of fees. Thus, it is difficult to argue

[28] It is important to note, however, that as the system moves toward full cost recovery and greater decentralization, administrative costs probably will increase. Facilities will need accountants, financial managers, and others to manage billing, purchases, planning, insurance contracts, etc.

that the marginal cost of collecting fees in a well-administered facility is high; it is probably close to zero.

These points do not address the issue of collecting fees where there were none before, which would be the situation at stand-alone health centers such as Matron Roberts and Cleopatra White. Depending on current staffing patterns, an additional person may be needed to collect fees and monitor revenues. The important point here is that sufficient revenues must be raised to make user fees a sensible thing to administer.[29] If possible, an initial strategy can include assignment of existing staff to the task of collecting and accounting for the money.

Work patterns observed by the authors in health centers--huge demand in the morning, followed by much lower utilization after noon--may make it possible to add accounting tasks in the afternoon without increasing the staff. Money can be collected during the registration procedure.

Another way to state the same issue is that any costs of collecting fees can be controlled to a considerable degree. In the previous examples, the key variable was the number of new collectors required. How the fees are charged, however, has an important impact on the number of people required to collect them. Under one scenario, a patient might pay at an outpatient department, a pharmacy, and a laboratory, requiring the services of three clerks. It would not take much imagination to combine all three fees into a single transaction or to charge all patients a single fee at the entrance based on the average cost of a visit, eliminating the need for so many collection points.

---

[29] Lower-level facilities in other countries actually have been more successful than hospitals in recovering their costs because costs are low and each patient pays a small amount (compared to hospitals, where bills can be large). The success of Ethiopia (Dunlop and Donaldson, 1987) and Zaire (Bitrán, et al., 1986) in achieving high levels of cost recovery in rural clinics, usually over 100 percent, is well documented. Both countries are much poorer than Belize. Documentation of cost recovery in evening clinics in the Sudan shows that collection costs were negligible once implemented (Bekele and Lewis, 1986). The lesson is that cost recovery in lower-level facilities may appear to be costly before the fact, but it should not be dismissed out of hand. Belize probably has enough personnel in health centers to do the collecting and accounting during the course of a normal day at little or no additional cost. Moreover, if the facilities benefit from collecting the money, the personnel will undoubtedly cooperate in collecting it.

In summary, the costs of collecting user fees should be considered in terms of incremental costs. At the margin, increasing prices, hence revenues, will result in negligible changes in the cost of collecting fees. In cases where the marginal cost of collecting new fees might be high, many techniques are available to reduce it to nearly zero. In either case, it is safe to assume that collection costs will be low relative to revenues in order to focus on more important concerns.

Two changes associated with fee collection that have not been discussed are the training of staff to handle money and accounting forms, and greater attention to administration and control within the institutions. Such training is crucial to any successful decentralization process. Again, it could be argued that such activities will benefit the system, and that the benefits extend beyond the fee system that originally creates the incentives to make the expenditures on training and management systems.

6.0 RECOMMENDATIONS AND NEXT STEPS

As a short-term strategy, we recommend that the MOH experiment with different cost-recovery arrangements in a small sample of facilities. The proposed short-term activities are oriented toward a single objective: to develop a partial cost recovery policy. Policymakers can use the simulation tools presented here to set a cost recovery goal, that is, the percent of costs to be recovered. HFS considers partial cost recovery a goal that is a) easily reachable, given current utilization levels, b) affordable to the majority of MOH clients, and c) relatively neutral in terms of equity considerations. Further, given the MOH's network of facilities, together with a very competent and committed staff, the potential for success is high. Activities would focus on options regarding price structures, revenue sharing, decentralization, and protecting the poor. The proposed actions, particularly in terms of revenue sharing, decentralization, and management, would help prepare the way for some system of comprehensive health insurance--a long-term full cost-recovery strategy. Specific issues relating to the planning of a comprehensive health insurance plan are outlined in La Forgia (1991).

Knowledge of how the health system or its clients will react to the price changes is limited. Thus, experiments are highly recommended. Because hospitals have the greatest potential for generating additional revenue and the greatest capability for collecting and managing fees, they are recommended as the place to start any experiment. We recommend the BCH and at least one district hospital as testing sites. Belize City health centers are also good candidates for pilot projects. The lessons learned from innovative pilot projects would pay high dividends in better policy formulation.

Recommendation 1: Develop a user fee strategy that incorporates a new price structure by facility and service type.

Once the MOH decides to proceed with reforming cost recovery arrangements, facility managers can design and implement user fee strategies on a demonstration basis. The price structure incorporated in the incremental simulation provides an excellent reference point. The prices are double those of the current fee schedule, but are still significantly lower than in the private sector. Whether to charge fees for all services or apply a "registration" or "gate" fee that entitles the payor to a number of services will depend on the facility and can be determined on a demonstration basis. Blanket exemptions can be eliminated gradually.

Improved cost recovery also will require improved management practices, especially in billing and payment collections. Administrative costs can be minimized through the design process.

Technical assistance can be provided to monitor and evaluate these experiments. Applied research activities, including demand and cost analysis, can be incorporated into this technical assistance. Such activities will be critical to assessing how different pricing arrangements affect demand, revenues, and costs. Assistance may be needed to design fee structures, and billing and payment collection systems.

Recommendation 2: **Develop a revenue-sharing arrangement and decentralization strategy for curative facilities.**

Revenue retention at the facility level is a key element of any cost recovery strategy. It provides an incentive to facility personnel to collect fees and furnish the means to make quality improvements. Resource management at the facility level implies decentralization. Authority to be transferred from the central to the local level usually includes some control over hiring practices and the purchase of goods and services. The best advice is to proceed carefully. Again, decentralization arrangements can be part of the pilot projects.

In collaboration with representatives of the MOF, MOH, and facility managers, external health financing specialists can develop revenue-sharing schemes to test on a demonstration basis. Assistance also can be provided to develop and test a workable decentralization strategy that involves a combination of local autonomy and central control. Quality improvement will have to be planned and financed as part of a cost recovery scheme. Such improvement may require financial and technical assistance.

Recommendation 3: **Protect the poor: (1) transfer responsibility for means testing to the Social Development Department; (2) maintain free services or low-cost alternatives to services for which fees are imposed.**

It appears to be too difficult to identify the destitute at the point of service purchase. Means testing to determine eligibility for free care can be placed in the hands of the SDD. Removing means testing from facility clerks will free up time for improving billing and collection systems. The SDD has standardized means-testing procedures and a network of trained social workers. Assistance can be provided to the SDD and MOH to develop formal links between the two institutions.

Low-income Belizeans also can be protected by maintaining low-cost alternatives to services for which fees will be imposed. The alternative may be another facility or the same facility during off-peak hours (e.g., lower prices in hospital outpatient departments in the evening). Instead of giving clerks the responsibility of placing these groups in income categories, let the latter identify themselves by allowing them to choose the price and level of service they desire. As part of the demonstration projects, the MOH can establish alternative pricing schemes among facilities within the same catchment area.

7.0 CONCLUSION

Strapped by increasing costs and decreasing budgetary allocations, the Ministry of Health faces rising operating deficits during the 1990s. The Government has made it known that real increases in future MOH budgetary outlays are unlikely. To maintain service provision at even current levels of quality and quantity, the MOH must search for mechanisms that increase revenues and at the same time foster greater efficiency and equity in service production. This report analyzes the problems and potential of one such mechanism: cost recovery through user fees.

As currently practiced in MOH facilities, user fees are inconsequential in terms of revenues, efficiency, or equity. Factors contributing to poor performance include low prices, ineffective means testing, informal exemption policies, and lax billing and collection practices. Further, facility managers have no control over fee revenues, which are deposited in the Government's Consolidated Fund.

Although user fees can have many functions, this report focuses on how fees can contribute to an increase in revenues. Four simulations featuring partial and full cost recovery revenue estimates for Belize City Hospital and district facilities were presented. As a short-term strategy, a partial cost recovery scheme has great potential for success. Simply doubling the current fee schedule and applying nominal flat fees for outpatient care will recover 25 and 40 percent of operating costs in Belize City Hospital and district facilities, respectively. Utilization reduction probably would be insignificant because prices would remain considerably below private charges. A long-term option involves establishing a comprehensive health insurance system. However, a functional partial cost recovery system will be a necessary first step toward the development of full cost recovery through comprehensive health insurance.

To enhance the performance of a cost recovery program while improving efficiency and equity, several policy and administrative measures are recommended: decentralized facility management, fee retention at the point of collection, transfer of means testing to the Social Development Department, and a clearly defined subsidy reduction plan.

Demonstration projects are an option as a means to test different design strategies, as well as to develop sound management and financial practices. Experimental projects offer the advantage of testing the political feasibility of different approaches among political leaders, health workers, and the general public.

ANNEX EXHIBIT 1

A COMPARISON OF PUBLIC AND PRIVATE SECTOR PRICES
FOR SELECTED LABORATORY TESTS, 1990

CATEGORY	TEST (a)	GOVERNMENT	Private Laboratory	Mission Hospital	Goverment as percent of Private	Mission
Hematology						
	HB/PVC	$2	$5	$3	40%	67%
	Full Blood Count	$4	$10	$8	40%	50%
	Sickle Cell	$2	$10	$5	20%	40%
	ESR (Sedimentation Rate)	$1	$5	$4	20%	25%
	HIV	$10	$60	NP	17%	--
Chemistry						
	Fasting Blood Sugar	$2	$8	$4	25%	50%
	BUN (urea nitrogen)	$2	$10	$7	20%	29%
	Cholesterol	$3	$10	$5	30%	60%
	Liver Function Test (package)	$8	$40	NP	20%	--
	Bilirubin Total & Direct	$6	$15	$6	40%	100%
	SGO-T	$3	$10	$5	30%	60%
	SGP-T	$3	$10	$5	30%	60%
	Alkaline Phosphatase	$3	$10	NP	30%	--
	Uric Acid	$3	$10	$5	30%	60%
	Sodium/Potassium	$6	$40	$15	15%	40%
	Albumin/Protein	$3	$20	NP	15%	--
Urinalysis						
	Routine	$2	$8	$8	25%	25%
	Pregnancy	$3	$10	$10	30%	30%
Serology						
	VDRL	$2	$8	$5	25%	40%
	ASO titre	$5	$20	$10	25%	50%
	AFP SLIDE	$0	$15	$10	0%	0%
Parasitology						
	Ova and Parasite	$2	$8	$5	25%	40%
	Occult Blood	$1	$10	NP	10%	ERR
Bacteriology						
	Blood	$4	$40	NP	10%	--
	Urine	$3	$15	$6	20%	50%
	Stool	$3	$20	NP	15%	--
Immunohematology						
	Blood Grouping	$2	$5	$6	40%	33%

Note: 1 BLZ $ = 0.5 US $

(a) Tests represent 86% of volume performed in MOH facilities

ANNEX EXHIBIT 2

A COMPARISON OF PUBLIC AND PRIVATE PRICES
FOR SELECTED RADIOLOGY EXAMS, 1990

EXAMINATION (a)	GOVERNMENT	PRIVATE (c)	MISSION HOSPITAL	GOV. PRICE AS PERCENT OF LOWEST PRIVATE	GOV. PRICE AS PERCENT OF MISSION HOSPITAL
ABDOMEN	$7.50	$30-40	$15	25%	50%
BARIUM ENEMA	18.00	80-150	NP	23%	--
BARIUM MEAL	15.00	70-150	NP	21%	--
THORAX (CHEST)	6.00	35-40	15	17%	40%
CERVICAL SPINE	7.00	35-40	24	20%	29%
EXTREMITIES (b)	4.00-6.00	25.00	10-24	16%	--
FEMUR	7.50	30-40	30	25%	25%
HIP	7.00	30-35	15	23%	47%
IV PHLEOGRAM	16.00	100	NP	16%	--
KNEE	8.00	30-35	20	27%	40%
LEG	8.00	30	15	27%	53%
LUMBO-SACRAL VERT.	9.00	40	24	23%	38%
PELVIS	8.00	30	15	27%	53%
RIBS	8.00	35-40	30	23%	27%
SKULL	8.00	30-35	36	27%	22%
STERUM	6.00	35-60	24	17%	25%
THERACIC VERT.	9.00	40-50	15	23%	60%
HISTERO-SALPINGOGR	10.00	95-100	NP	11%	--
COLESYSTOGRAM	10.00	60-80	NP	17%	--

Note: All prices refer to adults.
NP means test not performed

(a) Sample represents 90% of volume of exams performed at government facilities.
(b) Foot, ankle, hand, wrist, finger, elbow.
(c) In most cases, higher price includes radiologist interpretation.

ANNEX EXHIBIT 2

A COMPARISON OF GOVERNMENT PRICES AND COSTS WITH PRIVATE SECTOR PRICES FOR SELECTED HIGH-VOLUME OUTPATIENT DRUGS, AUGUST, 1990

DRUG*	STRENGTH	PRESENT.	GOVERN. PRICE (¢/unit)	GOVERN. COST, (¢/unit)	MISSION PRICES (¢/unit)	PRIVATE RETAIL PRICES* (¢/unit)
Acetaminophen	500 mg	tab	$0.00	$0.02	$0.05	$0.04 - 0.16
Amoxicillin	250 mg	cap	$0.00	$0.05	$0.13	$0.13 - 0.18
Amoxicillin	60/100 ml	susp	$0.00	$1.55	$2.25	$2.25 - 4.09
Aspirin	300/325mg	tab	$0.00	$.004	NA	$0.02 - 0.07
Chlorpheniramine Maleate	4 mg	tab	$0.00	$0.01	$0.03	$0.09 - 0.12
Chloroquinade	250 mg	tab	$0.00	$0.02	$0.07	$0.07 - 0.15
Chloroquinesulfate	250 mg	tab	$0.00	$0.01	$0.25	$0.10 - 0.23
Cloxacillin	250 mg	tab	$0.00	$0.10	$0.40	$0.19 - 0.20
Diazepam	5mg	tab	$0.00	$0.06	$0.05	$0.04 - 0.07
Erythromycin	250 mg	tab	$0.00	$0.07	$0.25	$0.24 - 0.36
Ferrous Sulfate	65 mg	tab	$0.00	$0.004	$0.03	$0.02 - 0.04
Folic Acid	1 mg	tab	$0.00	$0.001	NA	$0.03 - 0.10
Frusemide	40 mg	tab	$0.00	$0.01	$0.10	$0.03 - 0.09
Gentamycin	40 mg	amp	$0.00	$0.12	$1.63	$0.58 - 1.02
Hydrochlorothiazide	50 mg	cap	$0.00	$0.01	NA	$0.03 - 0.04
Ibuprofen	200 mg	tab	$0.00	$0.03	NA	$0.11 - 0.16
Indomethacin	25 mg	tab	$0.00	$0.01	$0.10	$0.11 - 0.23
Mg Trisilicate	250/150mg	tab	$0.00	$0.01	NA	$0.10
Mebendazole	200 mg	tab	$0.00	$0.05	$0.23	$0.11 - 0.22
Mebendazole	20 ml	susp	$0.00	$1.48	$2.40	$2.00 - 6.52
Metronidazole	250 mg	tab	$0.00	$0.06	$0.10	$0.15 - 0.20
Metronidazole	250 mg	tab	$0.00	$0.02	$0.10	$0.12 - 0.13
Nefedipine	10 mg	tab	$0.00	$0.08	$0.60	$0.53 - 0.84
Penicillin Ben.	2.4 m	amp	$0.00	$0.56	$4.95	$1.82 - 10.21
Penicillin Pro.	4mu	amp	$0.00	$0.69	NA	$2.12 - 3.75
Propranolol HCL	40 mg	tab	$0.00	$0.01	$0.04	$0.11 - 0.12
Ranitidine	150 mg	tab	$0.00	$0.22	NA	$1.22 - 2.17
Salbutamol	4 mg	tab	$0.00	$0.01	$0.11	$0.10 - 0.31
Tetracycline	250 mg	cap	$0.00	$0.02	$0.07	$0.06 - 0.07
Trimethoprim Sulfameth.	400 mg	tab	$0.00	$0.05	$0.25	$0.13 - 0.41

All prices in BLZ $ (2 BLZ $ = 1 US $).

Note: NA means not available.

(a) Represents 70-80% of outpatient drug volume in MOH facilities.

(b) International prices paid through PAHO/Formed Program (including shipping costs); Local prices paid by MOH are much higher.

(c) Based on samples from four private pharmacies.

ANNEX EXHIBIT 4

PRICES AND REVENUES UNDER TWO PARTIAL COST RECOVERY SIMULATIONS,
CLEOPATRA WHITE AND MATRON ROBERTS HEALTH CENTERS, BELIZE CITY, 1989

		BASELINE (current rate structure		INCREMENTAL (modified rate structure) (20% free, lose 10%)	
SERVICE	UTILIZATION	PRICE (a)	REVENUES	PRICES	ESTIMATED REVENUES
Physician Visits (b)	31,864	$0.00	$0.00	$2.00	$45,884
Dressings (b)	11,446	$0.00	$0.00	$2.00	$16,482
Minor surgery (b)	225	$0.00	$0.00	$2.00	$324
Injections	7,598	$0.00	$0.00	$1.50	$8,206
Prescriptions	32,426	$0.00	$0.00	$1.00	$23,347
ESTIMATED REVENUES			$0.00		$94,243
COST/PERCENT RECOVERY	$166,517 (c)		0.0%		56.6%

All figures in BLZ $: 1 BLZ $ = 0.50 US $

(a) Fees are not charged at health centers.
(b) Represent separate visits.
(c) From Exhibit 2.

ANNEX EXHIBIT 5

LABORATORY TESTS, FEES, AND REVENUES UNDER DIFFERENT COST RECOVERY SIMULATIONS
BELIZE CITY HOSPITAL AND CENTRAL LABORATORY, 1989

Test	CURRENT FEES	VOLUME (1989) BCH(a)	VOLUME (1989) CENTRAL LAB (b)	ESTIMATED REVENUES BELIZE CITY HOSPITAL BASELINE (c)	BELIZE CITY HOSPITAL INCREMENTAL/ COST-BASED (d)	BELIZE CITY HOSPITAL NATIONAL HEALTH INSURANCE (e)	CENTRAL LABORATORY BASELINE (c)	CENTRAL LABORATORY INCREMENTAL/ COST-BASED (d)	CENTRAL LABORATORY NATIONAL HEALTH INSURANCE (e)
Hematology/Blood Tests									
HB/PVC	$2.00	8,309	4,603	$13,294	$23,930	$24,927	$7,365	$13,257	$13,809
Full Blood Count	$4.00	4,829	4,875	$15,453	$27,815	$28,974	$15,600	$28,080	$29,250
Sickle Cell	$2.00	0	2,744	$0	$0	$0	$4,390	$7,903	$8,232
ESR (Sedimentation Rate)	$1.00	2,051	1,024	$1,641	$2,953	$3,077	$819	$1,475	$1,536
HIV*	$10.00	0	5,350	$0	$0	$0	$42,800	$77,040	$80,250
Chemistry									
Fasting Blood Sugar	$2.00	4,040	4,817	$6,464	$11,635	$12,120	$7,707	$13,873	$14,451
BUN (urea nitrogen)	$2.00	1,950	1,977	$3,120	$5,616	$5,850	$3,163	$5,694	$5,931
Cholesterol	$3.00	384	657	$922	$1,659	$1,728	$1,577	$2,838	$2,957
Liver Function	$8.00								
Bilirubin Total & Direct	$6.00	1,335	788	$6,408	$11,534	$12,015	$3,782	$6,808	$7,092
SGO-T	$3.00	1,041	565	$2,498	$4,497	$4,685	$1,356	$2,441	$2,543
SGP-T	$3.00	0	125	$0	$0	$0	$300	$540	$563
Alkaline Phosphatase	$3.00	481	473	$1,154	$2,078	$2,165	$1,135	$2,043	$2,129
Uric Acid	$3.00	103	228	$247	$445	$464	$547	$985	$1,026
Sodium/Potassium	$6.00	265	856	$1,272	$2,290	$2,385	$4,109	$7,396	$7,704
Albumin/Protein	$3.00	0	464	$0	$0	$0	$1,114	$2,004	$2,088
Urinalysis									
Routine	$2.00	0	2,879	$0	$0	$0	$4,606	$8,292	$8,637
Pregnancy	$3.00	0	162	$0	$0	$0	$389	$700	$729
Serology									
VDRL**	$2.00	0	7,478	$0	$0	$0	$11,965	$21,537	$22,434
ASO titre	$5.00	0	210	$0	$0	$0	$840	$1,512	$1,575
AFP SLIDE	$0.00	0	954	$0	$0	$0	$0	$0	$0
Parasitology									
Ova and Parasite	$2.00	0	3,685	$0	$0	$0	$0	$0	$0
Occult Blood	$1.00	0	245	$0	$0	$0	$0	$0	$0
Bacteriology									
Blood	$4.00	0	517	$0	$0	$0	$1,654	$2,978	$3,102
Urine	$3.00	0	850	$0	$0	$0	$2,040	$3,672	$3,825
Stool	$3.00	0	662	$0	$0	$0	$1,589	$2,860	$2,979
Immunohematology									
Blood Grouping	$2.00	3,458	3,516	$5,533	$9,959	$10,374	$5,626	$10,126	$10,548
VOLUME/REVENUES BASED ON SAMPLE		28,246	50,704	$58,006	$104,412	$108,762	$124,474	$224,052	$233,388
ESTIMATED TOTAL VOLUME AND REVENUES		30,934	62,506	$71,613	$128,903	$134,274	$136,784	$246,212	$256,470

NOTE: ALL PRICE SCENARIOS ALLOW FOR FREE PARASITE AND MALARIA TESTS

(a) Represents 81% of tests performed.
(b) Represents 91% of tests performed.
(c) Baseline simulation: Current rate structure, 20% free.
(d) Incremental simulation: double current fees, 20% free, lose 10%.
Cost-based user fee system simulation: double current fees, 20% free, lose 10%
(e) National Health Insurance simulation: 1 5 x current fees, 100% pay.

ANNEX EXHIBIT 6

LABORATORY TESTS, FEES, AND REVENUES UNDER DIFFERENT COST RECOVERY SIMULATIONS
DISTRICT HOSPITALS, 1989

Test	CURRENT FEES	VOLUME (a) (1989)	ESTIMATED REVENUE			
			BASELINE (b)	INCREMENTAL (c)	COST-BASED USER FEE SYSTEM (d)	NATIONAL HEALTH INSURANCE (e)
Hematology/Blood Tests						
HB/PVC	$2.00	9,855	$15,768	$28,382	$21,287	$19,710
Full Blood Count	$4.00	5,083	$16,266	$29,278	$21,959	$20,332
Sickle Cell	$2.00	1,740	$2,784	$5,011	$3,758	$3,480
ESR (Sedimentation Rate)	$1.00	1,373	$1,098	$1,977	$1,483	$1,373
HIV	$10.00	0	$0	$0	$0	$0
Chemistry						
Fasting Blood Sugar	$2.00	4,151	$6,642	$11,955	$8,966	$8,302
BUN (urea nitrogen)	$2.00	548	$877	$1,578	$1,184	$1,096
Cholesterol	$3.00	162	$389	$700	$525	$486
Liver Function	$8.00					
Bilirubin Total & Direct	$6.00	390	$1,872	$3,370	$2,527	$2,340
SGO-T	$3.00	242	$581	$1,045	$784	$726
SGP-T	$3.00	191	$458	$825	$619	$573
Alkaline Phosphatase	$3.00	308	$739	$1,331	$998	$924
Uric Acid	$3.00	109	$262	$471	$353	$327
Sodium/Potassium	$6.00	0	$0	$0	$0	$0
Albumin/Protein	$3.00	166	$398	$717	$538	$498
Urinalysis						
Routine	$2.00	5,497	$8,795	$15,831	$11,874	$10,994
Pregnancy	$3.00	0	$0	$0	$0	$0
Serology						
VDRL**	$2.00	6,577	$10,523	$18,942	$14,206	$13,154
ASO titre	$5.00	0	$0	$0	$0	$0
AFP SLIDE	$0.00	190	$0	$0	$0	$0
Parasitology					$0	$0
Ova and Parasite	$2.00	3,510	$0	$0	$0	$0
Occult Blood	$1.00	0	$0	$0	$0	$0
Bacteriology						
Blood	$4.00	0	$0	$0	$0	$0
Urine	$3.00	0	$0	$0	$0	$0
Stool	$3.00	0	$0	$0	$0	$0
Immunohematology						
Blood Grouping	$2.00	4,275	$6,840	$12,312	$9,234	$8,550
VOLUME/REVENUES BASED ON SAMPLE		44,367	$74,292	$133,726	$100,294	$92,865
ESTIMATED TOTAL VOLUME/REVENUES		50,511	$84,423	$151,961	$113,971	$105,528

NOTE: ALL PRICE SCENARIOS ALLOW FOR FREE PARASITE AND MALARIA TESTS

(a) Represents 88% of tests performed.
(b) Baseline simulation: Current rate structure, 20% free.
(c) Incremental simulation: double current fees, 20% free, lose 10%.
(d) ←Cost-based user fee system simulation: 1.5 x current fees, 20% free, lose 10%
(e) National Health Insurance simulation: current fees, 100% pay.

ANNEX EXHIBIT 7

RADIOLOGY EXAMS, FEES, AND REVENUES UNDER DIFFERENT COST RECOVERY SIMULATIONS
BELIZE CITY HOSPITAL AND DISTRICTS, 1989

		BELIZE CITY HOSPITAL				DISTRICTS				
			ESTIMATED REVENUES				ESTIMATED REVENUES			
EXAM	CURRENT FEES	VOLUME	BASELINE(a)	INCREMENTAL(b)	COST-BASED(d)	NAT'L HEALTH INSURANCE (c)	VOLUME	BASELINE(a)	INCREMENTAL(b)	COST-BASED(e)	NAT'L HEALTH INSURANCE (f)
CHEST	$6	2739	$13,147	$23,665	$65,079	$65,736	2156	$10,349	$18,628	$27,942	$25,872
ADOMEN	$8	788	$4,728	$8,510	$23,404	$23,640	555	$3,330	$5,994	$8,991	$8,325
COLESYSTOGRAM	$10	161	$1,288	$2,318	$6,376	$6,440	112	$896	$1,613	$2,419	$2,240
SKETETAL	$7	4684	$26,230	$47,215	$129,840	$131,152	3729	$20,882	$37,588	$56,382	$52,206
IVP	$16	113	$1,446	$2,604	$7,160	$7,232	64	$819	$1,475	$2,212	$2,048
BARIUM MEAL	$15	69	$828	$1,490	$4,099	$4,140	21	$252	$454	$680	$630
BARIUM ENEMA	$18	28	$403	$726	$1,996	$2,016	17	$245	$441	$661	$612
MISC	$10.00	66	$528	$950	$2,614	$2,640	5	$40	$72	$108	$100
TOTAL		8648	$48,599	$87,479	$240,566	$242,996	6659	$36,813	$66,264	$99,396	$92,033

2 BLZ $ = 1 US $

(a) Baseline simulation: current rate structure, 20% free.
(b) Incremental simulation: double current fees, 20% free, lose 10%
(c) National Health Insurance simulation: 4 x current fees, 100% pay.
(d) Cost-based user fee system simulation: 5.5 x current fees, 20% free, lose 10%.
(e) National Health Insurance simulation (districts): 2 x current fees, 100% pay.
(f) Cost-based user fee simulation (districts): 3 x current fees, 20% free, lose 10%.

Source: Central Statistics Office
BCH Radiology Dept.

ANNEX EXHIBIT 8

UTILIZATION STATISTICS IN DISTRICT FACILITIES, 1989

	(Toledo) Punta Gorda	Corozal	(Dan riga) Stan Creek	Orange Walk	Cayo	Belmopan	Mopan	Total
INPATIENT								
Discharges	1,227	1,573	1,378	1,457	1,295	1,265	NP	8,195
Patient Days	6,192	3,487	3,071	3,704	3,732	6,215	NP	26,401
Surgery								
major	1	0	0	0	1	16	NP	18
minor	289	245	210	428 (3)	113	377	NP	1,662
Maternity Cases	203	493	328	897	504	368	NP	2,793
OUPATIENT								
Physician Visits	13,268	13,267	18,258	17,208	12,254	11,446	10,058	95,759
Dental Visits	690 (1)	1,877	1,355	1,515 (4)	1,359 (4)	1,318	NP	8,114
Dressings	1,302	2,580	941	3,932	3,072	1,736	401	13,964
Minor surgery	302	169	310	168 (7)	390 (5)	0	77	1,416
Injections (outpatient)	3,108	4,180	4,762	4,810	4,161	1,611	511	23,143
Total Patients	18,670	22,073	25,626	27,633	21,236	16,111	11,047	142,396
TESTS AND MEDICINES								
Lab tests (8)	10,806	NP	10,467	22,152	NP	28,592	NP	72,017
X-ray exams	1,012	1,030	675	2,528	NP	1,414	NP	6,659
Prescriptions	12,344	12,144 (2)	16,751	22,821	9,193	10,585	NP	83,838
Prescription Drugs	23,947	(6)22,774 (2)	27,805	47,075	17,997	23,143	NP	162,741

(1) Estimate based on two-month sample.
(2) Estimate based on seven-month sample.
(3) Estimate based on eight-month sample.
(4) Estimate based on four-month sample.
(5) Estimate based on six-month sample.
(6) Estimate based on ratio drugs p/prescription from other district hospitals.
(7) Estimate based on three-month sample in 1990.
(8) Overestimated due to double counting of exams for statistical purposes.
Based on six month sample, total volume is adjusted for simulations.

Source: Monthly facility statistical ledgers, Central Statistics Office

REFERENCES

Bekele, A., and M. A. Lewis, 1986. "Financing Health Care in the Sudan: Some Recent Experiments in the Central Region." International Journal of Health Planning and Management, 1(2):111-127.

Bitrán, Ricardo, A., Munkatu Mpese, Sabinwa Bavugagose, Muanza Kasonga, Nsembani Nsuka, Taryn Vian, and Kongobo Wanbenge, 1986. Zaire Health Zones Financing Study. Arlington, VA: Resources for Child Health (REACH) for AID.

Central Planning Unit, 1980. "The Belize Household Survey." Belmopan: Government of Belize, Mimeograph.

Central Statistics Office, 1989. Abstract of Statistics. Belmopan: CSO.

Central Statistics Office, 1990. Abstract of Statistics. Belmopan: CSO.

Central Statistics Office, 1984. "Belize Labour Force Survey, 1983-84." Belmopan: CSO, Mimeograph.

Dunlop, David and Dale Donaldson, 1987. Sector Review, Ethiopia: A Study of Health Financing. Issues and Options. Report No. 6624-ET. Washington, DC: World Bank, Department of Population, Health and Nutrition.

Government of Belize, 1991. Estimates of Revenue and Expenditure For the Fiscal Year, 1991/92. Belmopan: Government Printery.

International Labour Organization, 1986. "First Actuarial Review of the Social Security Scheme in Belize." Geneva, unpublished report.

La Forgia, Gerard M., 1991. "Social Security in Belize: Current Situation and Prospects for Health Care Benefits," Volume III of Health Financing and Management in Belize: An Assessment for Policymakers, A Compendium of Technical Notes, HFS Technical Notes, September 1991.

La Forgia, Gerard M., 1989. "User Fees, Quality of Care, and the Poor: Lessons from the Dominican Republic." Report to the Inter-American Foundation. Santo Domingo, Dominican Republic.

Lewis, Maureen, 1990. "Health Financing Assessment: Jamaica," HFS Project Trip Report.

Medical Statistics Office, 1989. Annual Report. Belize: Ministry of Health (MSO), Mimeograph.

Norris, Jeremiah, Dominique Colon, and Alan Fairbank, 1988. "Health and Development in Belize: A Sector Assessment," PRITECH Project Report, November.

Raymond, Susan U., Barbara Lewis, Paul Meissner, and Jeremiah Norris, 1987. "Financing and Costs of Health Services in Belize," Health Care Financing in Latin America and the Caribbean Research Report No. 2, State University of New York at Stony Brook.

Rosenthal, Gerald, Antonio Arrazola, Gail Marie Crowley, Carlos Javier Cuellar, and Alfredo Solari, 1988. "Toward Self-financing of Primary Health Services: A Market Study of PROSALUD in Santa Cruz, Bolivia," Health Care Financing in Latin America and the Caribbean, Research Report No. 6, State University of New York at Stony Brook.

World Bank, 1989. "Economic Memorandum." Belmopan, 1989, unpublished report.

World Bank, 1990a. "1990 Staff Report." Belmopan, 1990, unpublished report.

World Bank, 1990b. World Development Report 1990 "Poverty", World Bank and Oxford University Press.