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Health Insurance in Zaire

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This in-depth study of health insurance schemes in Zaire recommends developing more pilot insurance systems in areas where health systems already function — and strengthening existing systems through training, exchange visits, information systems, and technical assistance. Implementing a nationwide health insurance system is not likely to be as successful as decentralized, locally managed plans.

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After identifying 12 systems of health insurance in Zaire, Shepard, Vian, and Kleinau prepared detailed case studies of four systems (two urban and two rural) and brief studies of four others. The case studies focused on the terms of the insurance plans, their organization and management, resource mobilization, efficiency, equity, client perceptions, and the quality of services. Among the lessons learned:

- Plans vary substantially in the services covered. Consumers found coverage of ambulatory care attractive despite substantial premia or required copayments. Only half the plans covered inpatient care.
- The most successful schemes had modest premia.
- Acceptable quality of service is a precondition for successful implementation of an insurance scheme.
- The implementation of voluntary schemes requires publicity within the community at the outset.
- The risk that insurance plans would be overcharged was limited by the decentralization and direct management.
- Simple control methods, such as printed premium stamps, detailed descriptions of enrollees, and the enrollment of entire families helped reduce fraud and error.
- Appropriate investment strategies preserved the value of premium income. Investing in imported drugs was a hedge against erosion of the purchasing power of premia.
- Financial analysis of the insurance system requires better accounts. Few insurance plans had good financial reports of the health delivery plan, much less of the insurance plan.
- A financial guarantor (for example, a development organization guaranteeing the first year's services) boosts the public's confidence in the insurance system.
- Evidence of adverse selection and moral hazard was found in most plans. Their impact can be moderated by requiring that the entire family joins or by enrolling employee groups.
- Informal associations exist that finance members' health care through interest-free loans to pay for births, hospitalizations, and other emergencies.

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ACRONYMS

BCZS	Bureau Central de la Zone de Sante
BF	Belgian Francs
CASOP	Caisse de Solidarite Ouvriere et Paysanne
CISL	Confederation Internationale des Syndicats Libres
CDI	Center for Integrated Development
CMT	Confederation Mondiale du Travail
COOPEC	Savings and Credit Cooperatives
FONAMES	Fonds National Medico Sanitaire
GOZ	Government of Zaire
HMO	Health Maintenance Organization
MCZ	Medecin Chef de Zone
MUZAS	Mutualite Zairoise de la Sante
NGO	Non-Governmental Organization
PAC	Programme des Actions Complementaires
PASS	Programme d'Adjustement des Secteurs Sociaux
PRICOR	Primary Health Care Operations Research Project
PVO	Private Voluntary Organization
REACH	Resources for Child Health Project
REMEF	Reseau Medecins de Familles
SAFEM	Service d'Approvisionnement en Fournitures, Equipements et Medicaments
SANRU	Projet de Sante Rurale
SECREB	Societe Cooperative d'Epargne et de Credit de Bokoro
SNHR	Service National d'Hydrolique Rural
SPTK	Sante Pour Tous Kinshasa
STD	Sexually transmitted disease
UNTZ	Zairian National Workers Union
UPM	Union et Prevoyance Mutuelle
USAID	United States Agency for International Development

I. INTRODUCTION

This study of health insurance systems in Zaire was carried out as part of a larger program of initiatives (described elsewhere) designed to improve the sustainability of health care systems and increase the health status of the Zairian population (1). The objectives of the study are presented below, followed by a discussion of the economic aspects of health insurance, background information about the health sector and health financing systems in Zaire, and highlights of previous related work. The introduction ends with a summary of methods used by the research team to collect and analyze data.

A. OBJECTIVES

The major motivations for this study were:

- 1) to provide information for the ongoing social sector adjustment dialogue in Zaire; and
- 2) to serve as a case study in the World Bank's Region Study of Health Finance, which is concerned with options for mobilizing additional resources for the health sector.

Specifically, the study sought to document different types of insurance systems in Zaire, and to conduct in-depth case studies of several schemes.

The in-depth case studies presented in this report evaluate the design, management and operational efficiency of four health insurance programs from both rural and urban areas. The case studies also attempt to analyze the effects of insurance on equity of access, utilization of health care services, and mobilization of financial resources for the health sector. From these analyses, the report draws conclusions about the advantages and disadvantages of health insurance programs as a means of financing health care services in Zaire, and suggests avenues for future research, policy, and programming initiatives.

B. HEALTH INSURANCE

Health policy makers often propose health insurance as a possible health financing mechanism for developing countries. In theory, insurance can mobilize additional resources for health without a drain on the public sector and without substantially restricting access; it can also pose potential problems, however, such as over consumption of services ("moral hazard") and increases in medical prices and unit costs. This section reviews economic aspects of insurance to provide a theoretical framework for the evaluation of health insurance systems in Zaire.

Health insurance is defined as "the means by which risks, or uncertain events, are shared between many people." (2) The insurer (or his agent) collects premiums which are used to compensate the insured individuals against financial losses resulting from an insured event. Insurance relies on the fact that people are willing to pay a premium to be compensated for financial losses from an event which might not happen. Insurance also relies on the fact that events that are risky or unpredictable for a given individual, can be highly predictable for large numbers of people. For insurance to be feasible, therefore, risks must be "pooled" or spread widely among large numbers of people, and the risk events must be independent of each other. (2)

Insurance systems are different from prepayment systems because insurance systems provide coverage for uncertain future events, while prepayment systems provide coverage for certain future events. In other words, insurance systems are based on probabilities, which prepayment systems are not. In prepayment systems individuals pay a set amount in advance which entitles each covered individual to consume a specified quantity of services in the

future. The price of the individual prepayment is set by multiplying the average cost of the covered services times the quantity of services covered, plus a fair share of administrative costs and desired profit. (If prepayment covers several services with different costs, the fee would be calculated by multiplying average cost times quantity for each service, and summing across services.)

Individuals may favor prepayment in situations where future events are highly predictable, but future cash flow is low or unpredictable. Demand for prepayment systems does not depend on risk aversion, and has little to do with the individual's assessment of the probability or likelihood of illness (it assumes a probability of 1.0).

Insurance systems, on the other hand, require individuals to pay a set amount in advance (the premium) which entitles them to consume services in the future only if those services are needed (i.e. if illness occurs). Thus an element of uncertainty is involved in insurance. The level of the premium is set by multiplying the probability that an individual will need the covered services (i.e. the probability of illness) times the average cost of the covered services, plus a fair share of administrative costs and desired profit. Premium calculations based on the statistical frequency of disease in the population are called "actuarially-based" premiums.

Demand for health insurance is influenced by the price of the insurance (premium), and individual's assessment of the probability of financial expenditures resulting from illness, the magnitude of those expenditures, the individual's income, and the degree to which he or she is risk adverse. These factors are especially difficult to study in developing countries, where little research has been conducted on issues such as individuals' perceptions of probabilities of loss and willingness to pay to avoid risk. Demand issues are critical in LDCs, however, since many people may lack the means and/or will not purchase the amount of insurance coverage deemed socially desirable. (2)

A further distinction between insurance systems and prepayment schemes is that insurance systems are redistributive. In insurance systems, everyone may pay the same premium, but only sick individuals will draw the benefits, whereas in prepayment schemes each participant draws out benefits equally to what he or she paid in initially.

Insurance systems can be organized as either "direct" or "indirect." In direct insurance systems, the institution responsible for financing the health care services (the insurer) is also the provider, and is responsible for making decisions about how those services are produced, and the amount of services used to treat patient. Direct insurance systems are often more efficient, since there are built-in incentives to keep down the cost of providing services. In indirect systems (also called "third party payor" systems) the insurer is a separate entity from the health care provider. Since the provider does not have to pay for the services, there is less incentive to manage costs efficiently.

Two potential problems which can threaten the financial viability of an insurance system are "moral hazard" and "adverse selection." these concepts are summarized briefly below [a more detailed discussion may be found in Mills (2)].

"Moral hazard" is defined as "the tendency of individuals, once insured, to behave in such a way as to increase the likelihood or size of the risk against which they have insured." Moral hazard refers to the danger that insured individuals, having paid a premium in advance, will demand more services than they would have had they not been covered by insurance. The problem occurs because individuals no longer face a direct payment at the time they consume the services, although there is still a cost to produce those services. This is considered inefficient because the marginal cost of the services consumed is more than the marginal value of those services to the consumer.

Moral hazard thus results in an "over" consumption of health resources. Insurance systems

must develop safeguards to reduce moral hazard. Frequently used methods include co-insurance (required contributions from the insured individual for his or her coverage) and deductibles (an initial amount per illness episode which must be paid by the insured individual before the insurance covers the remainder of expenses). While co-insurance and deductibles reduce the danger of moral hazard, they may also discourage insured individuals from seeking care in a timely manner, which can result in larger health care costs later on. (2)

A second potential problem facing insurance systems is adverse selection. Adverse selection occurs when individuals at greater risk of illness are enrolled in an insurance program in larger proportions than they are found in the general population. Individuals at greater risk or illness are more likely to desire insurance, since losses from illnesses are more certain events for them. However, if premiums are calculated based on the statistical probability of illness in the general population, an over-enrollment of individuals who are at greater risk of illness will cause costs to be greater than revenue, thus threatening the financial viability of the system.

The case studies in this report analyze how successful insurance has been in spreading risks of financial losses associated with catastrophic illness, and in increasing the financial resources available to pay for health care services. The studies also discuss the factors influencing demand for insurance and analyze evidence of moral hazard and adverse selection.

C. HEALTH SECTOR ORGANIZATION AND FINANCING IN ZAIRE

Although Zaire was left with an extensive health care infrastructure at the time of independence, the health care system deteriorated progressively until in 1977, less than 10% of the population had access to primary health care services. (3) Starting in the 1970's, however, pilot projects were begun which promoted primary health care services such as basic curative care, vaccinations and prenatal care through the establishment of networks of health centers, each network centered around a reference hospital. Often, these hospitals and health centers were managed by a church.

In 1975, these projects became the model for a national proposal to create a decentralized system of "health zones." Each would be organized around a reference hospital and contain 10 to 20 satellite health centers, providing integrated primary and secondary-level health care services to populations of approximately 100,000 residents. The proposal became part of Zaire's Five Year Health Plan in 1982, and has been implemented with the support of the Government of Zaire (GOZ), the churches, and many international donors. As of 1989, over 100 of the 306 proposed health zones have been established and are functioning well. In 1987, over 46% of the population had access to primary health care services (3). Appendix I provides a more detailed explanation of the organization and management structure of the health zones.

Zaire has a range of health care financing systems. The most common form of health care financing is user fees, which are administered in a number of ways. A 1986 study of ten health zones revealed that nine zones charged fees per episode of illness to financing ambulatory curative care. (4) With this payment system, follow-up consultations were provided at no additional charge. In three of these nine zones, drugs and laboratory test were also included in the episode price.

In most health zones, the price of inpatient care is calculated according to the number and types of services and procedures provided (drugs, exams, bed days, etc.). The per-case pricing methodology in practice at Bwamanda Hospital (described in the first case study in Section II) is encountered less frequently.

Two health zones in the Kivu Region, Kasongo and Kindu, have employed a system of pricing per episode for both ambulatory and inpatient care. It permits the patient to receive all services required, for one set fee. The hospital charges a referral fee to the health center for each hospitalized case referred. While this system achieves an important social objective of assuring continuity of care and access for people who might not otherwise be able to afford inpatient care, it has not proved financially viable. The hospital referral fee reportedly is inadequate to cover its operating costs, but the set fee cannot be raised without excluding ambulatory patients with minor illnesses. Both zones rely on substantial external subsidies from international donors to pay operating costs.

According to the manager of the USAID-financed Basic Rural Health Project (SANRU), several zones have also initiated prepayment systems using health cards. Area residents are allowed to purchase the health card at a set price which entitles the bearer to a fixed number of curative care visits. The price is discounted slightly from the full price which walk-in patients must pay. The advantage of this system is not necessarily the cost saving (since inflation may offset any benefits from price discounts), but rather that it provides farmers with a way of paying for health care when cash is available.

In the formal sector, Zairian laws require that employers pay for health care services for their employees and employee's dependents. Firm employees and their dependents represent about 18% to 27% of the country's 31 million population, according to two recent studies (1,5). Some large enterprises own and run their own health facilities, where they provide services to employees and dependents at no charge. Other firms contract with health zones or other private providers to treat employees.

Finally, there are several health insurance programs functioning in Zaire, most managed by non-profit or private organizations. These programs are the subject of this report.

D. PREVIOUS RELATED WORK

1. Health Financing Research: User Fees vs. Insurance

Considerable research and policy analysis on health financing has been conducted in Zaire, including studies sponsored by the GOZ, the World Bank, USAID/Kinshasa, AID's PRICOR and REACH Projects, and other donors (1, 3-16).

The Health Zones Financing Study, sponsored by the SANRU Project and REACH Project in 1986, examined the financial performance of ten well-functioning health zones, one in each region of the country. The study revealed that approximately 80 percent of health zone operating expenses were being covered by user fees. The remaining expenses were financed through government and private subsidies, in equal proportions (4). Almost no ambulatory care is provided free of charge to the general public in Zaire. These surprising results provided evidence that Zairians were willing and able to pay for health care services, and indicated the importance of the decentralized community-managed health zone organizational structure.

Other studies have examined the different incentives of fee-per-visit versus fee-per-episode payment systems (11), the effects of inflation on health zone pricing policies (7), determinants of consumer demand for health care services (8,16) and deficiencies in health zones' financial management information systems (15).

This research has clearly demonstrated that user fee systems have increased the financial resources available to the public health sector, resulting in an increase of utilization of health care services by the population.

Several troubling issues remain, however. Health financing experts have questioned the

equity and financial viability of health systems which rely so heavily on user fees, especially with regard to expensive inpatient care (17-20).

Bad debt is a documented problem in inpatient care facilities, and is the primary reason why hospitals have the lowest rate of cost recovery of all health facilities in Zaire (4). For these reasons, a recent study concluded that user fees may not be the optimal financing mechanism for inpatient care (5).

In theory, insurance programs may avoid these problems, since the premiums are based on the statistical probability of illness, and are therefore set at a fraction of the average cost of a hospitalization. The population may be more willing and is certainly more able to pay the price of an insurance premium than to pay the full cost of inpatient care. Thus, compared with the current user fee system, a hospital insurance program has the potential to mobilize greater and more steady financial resources, while providing protection to individuals against the enormous burden of catastrophic illness.

As early as 1986, researchers in Zaire identified insurance systems and pre-paid plans as an additional health financing mechanism which could help protect individuals against the costs of catastrophic illness, and at the same time provide a steady source of increased revenue for the health sector (4). Most recently, a paper commissioned by the World Bank in the course of social sector adjustment work reiterated the potential advantages of health insurance systems in Zaire, especially in comparison with the current, almost universal systems of user fees for inpatient services (5).

The study noted that Zairians can expect to have high inpatient expenditures if they fall ill and require hospitalization, given the user fees now in place. Perceiving that they will be faced with such high expenditures when hospitalized, sick individuals can take three actions: 1) avoid seeking care at all; 2) obtain care and spend a large portion of annual disposable income or sell household assets to pay for it; or 3) obtain care and not pay for it, thus increasing the hospital's burden of bad debt. Whatever option is selected, the outcome is negative. In the first two cases, the individual's welfare is harmed by not seeking necessary care, or by being forced to spend a large portion of very limited household resources on one episode or treatment. In the last case, the financial sustainability of the health care provider is undermined by the extra burden of free care provided to inpatients.

Given the success of Zaire's user fee system in mobilizing resources to finance ambulatory care, the case for insurance programs for ambulatory care is less strong. Insurance may be desirable, however, as a way to stimulate demand for services, if under-utilization is a perceived problem.

2. GOZ Commission on the Organization of Insurance Systems

At the same time, the Government of Zaire has shown a great concern for insurance programs. In 1989, the Conseil Executif commissioned an insurance systems study (Mission d'Organisation des Mutualites) which included four parts:

- 1) **An inventory of existing "mutual associations" (a term that includes many different types of formal and informal clubs and cooperatives);**
- 2) **A public opinion survey;**
- 3) **Plans for proposed changes in laws regarding the organization of insurance in Zaire;**
- 4) **Options for pilot testing and alternatives for organization, financing, training and promotion of insurance programs (13).**

Results of the inventory and opinion survey are summarized briefly below. Some of the other proposals suggested by the Commission are mentioned later in this report.¹

In 1989, the Commission attempted to conduct an inventory of all mutual associations in Zaire. Difficulties in communication limited the focus to about 1,000 associations in the Kinshasa area, however. A total of 562 associations (mostly informal) completed the survey form. Some associations were contacted directly; others were identified through government administrative channels and by announcements on public radio.

The survey defined a mutual association very loosely. All types of formal and informal groups were targeted, including cultural groups, agricultural and handicraft cooperatives, health zones, and savings organizations.

The inventory found that most informal associations were small (less than 50 members) and require a monthly contribution of between 100 to 500 Z in order to finance certain benefits. About 30% of the associations surveyed provided financial assistance in case of illness. Financial assistance was also provided for events such as a death in the family, marriage, birth, or other financial problems. The GOZ findings about informal associations were similar to the findings of the World Bank team research, discussed in Section II.

The inventory also described ten, more formal associations (numbers 1 through 10) which offer or are planning to offer some form of health insurance. In the course of the present study, two additional systems were identified (number 11 and 12). All 12 systems are described in Section II.

1. Bwamanda Health Zone, Equateur Region
2. Bokoro Health Zone, Bandundu Region
3. St. Alphonse Health Center, Kinshasa
4. Caisse de Solidarite Ouvriere et Paysanne (CASOP), Kinshasa
5. Reseau Medecins de Familles (REMEF), Kinshasa
6. Masisi Health Zone, Kivu Region
7. Mutuelle "Union et Prevoyance" (UPM), Kinshasa
8. Mutualite de Solidarite Chretienne, Kinshasa
9. MUZAS, Kinshasa
10. LETISSA, Kinshasa
11. Sona Bata Health Zone
12. SNHR Employee Cooperative in Rutshuru.

The public opinion survey, also in 1989, interviewed 850 individuals in Kinshasa from different socio-economic levels and professional groups to learn about the prevalence of membership in mutual associations and perceived advantages and disadvantages to membership.

Sixty-three percent of respondents were members of some sort of mutual association (not necessarily related to health). About half of current members responded that they were satisfied with how the association operated. For those who were dissatisfied, the key reasons were financial: either a lack of sufficient financial resources, or irregularity of contributions by members. The survey also detailed reasons why people join mutual associations, and what role members saw for the State. On the latter question, most respondents saw the State's role as one of "encadrement" rather than supervision or management.

¹ This report does not attempt to analyze the legal changes proposed in the Commission report. While legal issues will become very important as the insurance industry develops, they were not considered of primary interest for the initial evaluation of existing systems.

E. SUMMARY OF RESEARCH METHODS

During the three-week study, the team collaborated closely with the members of the GOZ Commission. The team conducted interviews with officials from various government and non-governmental agencies, including the World Bank office and the Programme d'ajustement des Secteurs Sociaux (PASS) project in Kinshasa, USAID and the USAID-sponsored Sante Rural (SANRU) Basic Rural Health Project, Zaire's Expanded Immunization Program (EPI), the Cooperation Medicale Belge au Zaire, Projet Sante Pour Tous, Kinshasa (SPTK), and the Center for Integrated Development.

The team reviewed data already collected by the GOZ Commission, in particular the opinion survey and survey of existing mutual associations. Through this review, four health insurance plans were selected for in-depth study: two offered by rural health zones (Bwamanda and Bokoro) and two which cover ambulatory care services in Kinshasa (CASOP, offered by the Syndicat National UNTZA, and St. Alphonse, a community-initiated plan assisted by SPTK and the Catholic Church). More information about how the case studies were selected is presented in Section II.

Members of the team visited Bwamanda and Bokoro, interviewing medical staff there to obtain detailed information about organization and management of the insurance plans, premiums and enrollment rates, etc. 71 hospital patients in Bwamanda and Bokoro, and 26 residents in Bokoro Zone were surveyed to obtain information about satisfaction with the program, and to compare characteristics of members and non-members. Financial and utilization records were reviewed in both zones, to evaluate evidence of moral hazard and/or adverse selection, and to measure the effects of health insurance on the financial condition of health facilities and the health status of the population.

In Kinshasa, team members collected descriptive information and reviewed financial and utilization data from the facilities in which these plans were based (St. Alphonse and CASOP). A 205-patient survey was also conducted. Finally, team members visited several other insurance systems in the Kinshasa area.

To supplement information about formal health insurance plans, information was gathered from 22 informal savings associations ("iikelemba" and "moziki"), which sometimes come to the aid of members with catastrophic illness.

II. CASE STUDIES: DESCRIPTIONS AND IMPACTS

This section provides information about eight insurance programs, seven of which were selected from the ten mutual associations identified by the GOZ Commission as offering health insurance programs. The eight insurance programs (and their original number) are:

1. Bwamanda Health Zone
2. Bokoro Health Zone
3. St. Alphonse Health Center
4. Caisse de Solidarite Ouvriere et Paysanne (CASOP)
5. Reseau Medecins de Familles (REMEF)
6. Masisi Health Zone
7. Mutuelle "Union et Prevoyance" (UPM)
12. SNHR Employee Cooperative in Rutshuru

The other four known insurance programs (numbers 8 through 11) were not reviewed here either because plan officials were not available for interviews no. 8 (Mutualite de Solidarite Chretienne, and no. 10, LETISSA) or because the systems are not functional (no. 9 MUZAS, and no. 11 Sona Bata).²

From those programs reviewed, the team selected associations 1 through 4 for in-depth case analysis. These schemes were chosen for several reasons. First, the team wanted to study insurance systems which had been operating for at least a year, and for which information about utilization and financial performance was available. Program no. 12, a small cooperative, may have been less than a year old. The team wanted enrollment of at least 1000 members so that utilization rates would be stable. This criterion eliminated programs nos. 5 (REMEF), 7 (UMP), and again 12 (SNHR cooperative). In addition, the team wanted to analyze insurance systems in both rural and urban settings, covering different types of care (e.g. ambulatory, hospital). Finally, travel and communications were clearly a constraint, given the short duration of the study. The health insurance plan in the rural zone of Masisi was not selected for this reason. Tables II.1 through II.3 summarize pertinent characteristics of the four plans. Each of the case studies then provides detailed description of (1) the terms of the insurance, (2) organization and management, (3) effect on resource mobilization, and (4) effects on utilization and access. A brief sketch of the remaining four plans (nos. 5 through 7 and 12) follows.

The section also includes information about informal savings associations, some of which offer financial assistance to members in times of need.

² MUZAS is a proposed centralized national health insurance plan, described in the GOZ Commission report.

Table 11.1 Description of Models in Case Studies, Part 1

NAME OF PLAN	BWAMANDA INSURANCE PLAN	ST. ALPHONSE INSURANCE PLAN	BOKORO HEALTH ZONE "ABONNEMENT"	CASOP/UNTZA
REGION	Equateur	Kinshasa	Bandundu	Kinshasa
RURAL/URBAN	Rural	Urban	Rural	Urban
TYPE OF MANAGEMENT	Health Zone Assisted by the Center for Integrated Development (CDI), a project started by Belgian volunteers	One health center within a health zone: assisted by SPTK and Catholic parish	Health Zone Assisted by medical staff of the Belium Cooperation	UNTZA (Zairian National Workers Union)
DATE STARTED	April, 1986	February, 1987	1985	1968
ELIGIBLE POPULATION	1986: 118,612 1987: 125,480 1988: 130,000 1989: 134,680	1989: 10,000 residents of catchments area of St. Alphonse Health Center	1986: 112,911 1987: 116,815 1988: 109,685 1988: 110,000	1989: 3 million (pop. of the city of Kinshasa)
NUMBER OF MEMBERS (ENROLLMENT RATE)	1986: 32,750 (28%) 1987: 58,100 (46%) 1988: 80,595 (62%) 1989: 81,142 (60%)	1987-89: cumulative enrollees 1689 (17%) 1989: 620 (6%)	1988: 4,410 (4%) 1989: 4,444 (4%)	1989: 6,691 in Kinshasa (0.2%)
SERVICES COVERED	Hospital: all types of hospitalization, incl. deliveries (w/prenatal care). Health center: chronic care treatment	Curative care outpatient visits at a fixed price per episode, including basic drugs and up to 4 follow-up visits	Primary outpatient care including most drugs, laboratory exams, forms, consultations at reference hospital if referred.	Outpatient curative care at a flat rate per day including essential drugs
SERVICES NOT COVERED	Hospital: deliveries w/o prenatal care; private doctor visits Health center: all care except chronic	Laboratory exams, special drugs above normal health center stock. Doesn't cover hospital care, deliveries, or preventive care	Hospital inpatient care, chronic diseases, STDs, deliveries, Preventative care, MCH, FP, antibiotics & injections	Laboratory tests; special drugs not included in health center drug list hospital inpatient care; deliveries, Ante-natal care, MCH
UNIT OF ENROLLMENT	Individual; however, if one member of a family joins, all members must join	Individual	Individual, however, if one member of a family joins, all must join.	Family membership

Table 11.2 Description of Models in Case Studies, Part 2

NAME OF PLAN	BWAMANDA INSURANCE PLAN	ST. ALPHONSE INSURANCE PLAN	BOKORO HEALTH ZONE "ABONNEMENT"	CASOP/UNTZA
PREMIUM PRICE PER YEAR	Premium per household mem. 1986: 20 Z 1987: 30 Z 1989: 125 Z	1987: 50 Z 1988: 100 Z 1989: 300 Z	1985 - 1989: 600 Z 1989: 1,200 Z Paid 100% by employer.	1989: 100-200 Z/month One time fee of 100 Z for membership booklet
DO ALL MEMBERS FACE THE SAME PRICE	Yes	Yes	Yes	No. 3 levels of contributions depending on income
CO-PAYMENTS	20% for all hospital and health center serv. except deliveries w/ prenatal care (free)	Members pay a flat fee per episode (500 Z in 1989) Valid for 5 days.	25 % for covered services; All excluded services are charged at full rates. Paid 100% by employer.	Members pay a fee per day (450 Z for indiv. members in 1989).
DEDUCTIBLES	None	None	None	None
PRICES FACED BY UNINSURED	Uninsured are treated at full charges. Three payor categories for non-members (1) employer-billed, (2) non-resident (3) all others	Non-members pay per visit. Price includes basic drugs. In 1989, first visit=400 Z, follow-up visits = 150 Z	Uninsured are treated at full charges.	Uninsured are treated at higher prices
LIMIT ON MAXIMUM SERVICES TO A MEMBER	No	Five day limit for episode.	At discretion of health personnel in case of excessive utilization.	No
UTILIZATION REVIEW/CASE MANAGEMENT	No	No	Each treatment episode is noted on membership document, including drugs consumed.	No
QUALITY OF CARE	Stockouts rare; several doctors and well-trained nurses (some expatriates) infrastructure good.	Stockouts rare; no doctors; several well-trained nurses (some expatriates); infrastructure good.	Stockouts rare, several doctors and well-trained nurses (some expatriates); infrastructure good.	Stockouts rare, two doctors and several well-trained nurses; infrastructure fair.
VOLUNTARY/COMPULSORY	Voluntary; but if one family member joins, all must join	Voluntary	Voluntary; but if one family member joins, all must join.	Voluntary except if company joins, employees must pay contribution
TYPE OF INSURANCE	Direct, offered by provider	Direct, offered by provider	Direct, offered by provider	Direct but may change
ACCOUNTING	Insurance plan acctg kept separate. Hoop. & health centers bill the plan for services rendered.	Accounting for plan is combined with health center accounting.	Accounting for plan is combined with health center accounting.	Accounting for plan is combined with polyclinic accounting in some aspects
ADMINISTRATIVE COSTS	5.7% of premiums	Not distinguished from health center admin.	Not known	Not known

Table 11.3 Description of Models in Case Studies, Part 3

NAME OF PLAN	BWAMANDA INSURANCE PLAN	ST. ALPHONSE INSURANCE PLAN	BOKORO HEALTH ZONE "ABONNEMENT"	CASOP/UNTZA
VERIFICATION OF INSURANCE STATUS	All hospital cases must be referred from HC. HC checks membership card against family health card. Clerk at hosp. also checks card against membership register	Clerk checks membership card and compares to national ID card. Sometimes clerk checks against memb. register	Registration form with all member names exists in duplicate at health center and with household. Family form presented during consultation.	Present membership card (with photo) or give employee ID number
ENROLLMENT PERIOD	8 weeks per yr, Feb-Apr, following harvest period	Any time during year, except sick people aren't allowed to join and receive care immediately at member-rates	Any time during year.	Any time during year.
DURATION OF BENEFIT	One year	One year	One year	As long as monthly dues paid
INVESTMENT OF FUND	Fund is invested at CDI (2.5-3% interest per month) or loaned to pharmacy to purchase drugs.	Funds are kept at parish. Not invested.	Local expenses are deducted from revenues, balance entirely used for referred patients and central operating costs.	None
FINANCIAL SITUATION OF PLAN	Every year, plan has covered expenses. In 1989 plan will need to use surplus from previous years to cover expenses	Unknown	Underfinanced prior to 1989 10% markup at present utilization rate of members	Unknown
TOTAL PLAN REVENUE (INCL. INTEREST)	1986: unknown 1987: 2,245,752 Z 1988: 4,958,855 Z 1989: 10,887,846 Z (proj.)	Unknown	1986: unknown 1987: unknown 1988: 2,646,000 Z 1989: 5,332,800 Z (proj.)	1989: 403,980 Z
TOTAL PLAN EXPENSES	1986: unknown 1987: 1,736,878 Z 1988: 4,802,190 Z 1989: 11,125,106 Z (proj.)	Unknown	Unknown	Unknown
FINANCIAL SITUATION OF HEALTH FACILITY	Cost recovery at hospital increased by 30% between 1985 and 1988. Health centers recover over 100% of costs.	Highly profitable. Over 50% excess revenue over expenses in 1989 (projected).	Health centers cover their operating expenses incl. supervision and administration by BCZS.	Unknown, but looks profitable
CHANGES IN UTILIZATION:	Hospital utilization rates higher for members than for non-members.	Unknown	Plan members have 11 to 12 times higher utilization than uninsured & unemployed 4% (members) consume 31%	Members seem to make more follow-up visits than non-members

A. CASE STUDY OF BWAMANDA

The health zone of Bwamanda, located in the Equateur Region of Zaire, operates under the medical services of the Center for Integrated Development (CDI) of Bwamanda. The CDI was started in 1969 with assistance from Belgian missionaries, to support economic and social development, including agriculture, health, nutrition, and infrastructure. The health zone's 1989 population of 134,682 is served by a 156-bed reference hospital, 20 comprehensive health centers, and two smaller health posts.

The following section gives a brief introduction to the insurance plan operating in Bwamanda, and its context. The section describes the terms of the insurance package, characteristics of the population served, and the organization and management of the plan. Subsequent sections describe the financial condition of the insurance plan and the hospital, and analyze issues of efficiency, equity, and demand for services.

This discussion draws on previous work by health zone staff and other research teams, reported in several documents; Moens (1988), Bitran (1986), Vian and Nsembani (1986), and Bwamanda Health Zone (1985-1988) (Annual Reports of the Health Zone).

1. Terms of the Insurance Plan

Several concerns led decision makers to consider the development of an insurance plan as a health financing option for the zone of Bwamanda. Most important, the zone's medical staff wished to increase economic access to health care and to improve the hospital's financial situation. Regarding access, fluctuations in income due to seasonality of crops meant that it was not easy for individuals to pay the full cost of a hospitalization. Medical staff were also concerned that individuals who had been referred to the hospital were delaying several days to come, in order to gather enough money to pay for the care (14).

Regarding the financial situation of the hospital, a study in 1986 showed that the hospital had recovered less than half of its operating expenses through user fees in 1985. Compared to the eight other hospitals analyzed by Bitran et al, Bwamanda performed the worst in share of costs recovered from patients (4).

The process of designing the insurance plan included considerable participation from both medical staff (including health center nurses) and the communities. First, hospital staff discussed the acceptability of the plan with health center nurses. Through these workshops discussions, the basic parameters of the plan were set, for example, a small co-payment, no deductible, and annual collection rather than semi-annual premiums. The idea of covering ambulatory care through the insurance plan was also discussed during these preliminary workshops. Overwhelmingly, the nurses rejected this idea because they believed it would result in overutilization of medical services (14).

At the level of the community, meetings were held to explain the basic elements of the proposed insurance plan, and to ask community members for their preferences regarding premium and co-payment levels. Presented with two options, the communities expressed preference for a higher premium and lower co-payment (14). Health zone staff regularly solicit community opinion regarding the health insurance plan, through the CDI's community development committees.

The Bwamanda insurance plan covers hospitalizations (including deliveries), dental extractions, and ambulatory surgery (circumcisions) at the Bwamanda Hospital. Covered care span six clinical services:

Pediatrics
Internal medicine

**Intensive care
Surgery
Obstetrics (where mother has attended prenatal consultations)
Gynecology**

The insurance plan also covers the cost of treatment of chronic illness at the health center and health post.

Each clinical service has one to four sub-departments, bringing the total number of covered hospital clinical services to 14.

Two additional clinical services have been designated by the hospital but are not covered by the insurance plan. These are: 1) private doctor visit or physical examination, and 2) deliveries of mothers not enrolled in prenatal consultations. Including these two services, the hospital has a total of 16 clinical services. The Bwamanda hospital has employed a system of flat rate charges for episodes of illness or hospitalization for 10 years.

The charge varies by payor category. A list of hospital services, along with pricing information according to payor category, is attached in Annex II. Each price covers all resources required for treating the inpatient episode, including nursing, doctor visits, laboratory and X-rays, pharmacy, operating room time, housekeeping and supervised day treatment, etc. The standard price given in column A, applies to an uninsured patient included in the zone census. A non-member (column B) generally pays 20% of the standard price. People from outside the Zone (i.e. not in the census) generally pay twice the standard price; employed persons whose employer pays directly pay 250% of the standard price.

The population eligible to join the insurance plan includes all residents of the health zone of Bwamanda. Villages are often very large (1,000 to 2,000 inhabitants); the population density is 54 persons per square kilometer. Health centers usually serve between 4,000 to 8,000 people, and 99% of the population lives within 7 kilometers of a health center (14).

According to the health zone census, about 17% of the population are children under five. In a 1987 survey of 518 households, about half the households reported annual revenue of less than 7,500 Zaires (\$58).³ The same survey showed an average household contained five children and 7 to 8 members overall.

About 90% of the population of the health zone are farmers. The major crops are coffee, soy beans, corn, cotton, peanuts and cassava. In some parts of the zone, fishing is an important activity. About 4.6% of the zone's population are salaried employees and their families. These employees work for private or parastatal companies. The largest of these employers is the CDI itself, with 617 employees (a total of 3,480 covered beneficiaries). An unknown number of residents earn salaries working for small shops or other small businesses.

Table A.1 shows the evolution of membership in the insurance plan, from 1986 to 1989.

To better characterize insured and uninsured patients, the study team interviewed 50 of the 196 hospitalized patients in a systematic survey hospitalized on November 2 or November 3, 1989. The questionnaire (in Lingala) is in Annex V. Table A.2 compares the insured and uninsured inpatients who used the hospital. Insured patients were more likely to be female and were less educated. Otherwise, there were no noticeable differences. As only one respondent was employed, it was not possible to separate ordinary uninsured and employed

³ The Zaire, the unit of currency of Zaire, has been subject to rapid inflation. As of the time of this study (mid-October, 1989) one US dollar was worth 430 Z officially and about 470 Z on the parallel market.

Table A.1 Bwamanda Health Insurance Plan
Membership Rates 1986 - 1989

	1986	1987	1988	1989*
Members	32750	58100	80595	81142
Total Population	118612	125480	130000	134680
Percentage enrolled	27.6%	46.3%	62.0%	60.2%
Change in enrollment rate (percentage)	18.7%	15.7%	-1.7%	

* 1989 population estimated based on growth rate of 3.6%

patients. Table V.1 in Annex V analyzes missing data to show how various ambiguities in the survey were resolved.

Table A.2 Survey of 50 Bwamanda Hospital Patients: Frequencies

Characteristic	% of Respondents:		Numbers used
	Insured (N=29)	Uninsured (N=21)	
Gender:			
Female		69%	50
Male	31%	57%	
What do you think of the idea of health insurance?			
Good	100%	81%	50
Don't know	0%	10%	
Could you pay 10,000 Zaire for an illness episode requiring minor surgery in a hospital?			50
Yes	52%	43%	
No or no response	48%	48%	
How would you pay this amount?			35
Installment	25%	27%	
Cash	75%	73%	
Where would you get the money?			48
Cash from household	7%	10%	
Saving club or association	4%	0%	
By selling household items outside the household	43%	25%	
Contribution of a family members other	7%	40%	
No response	36%	25%	
Did you go to school?			50
Not at all	66%	38%	
Primary school, 1-3 years	17%	19%	
Primary school, 4-6 years	10%	14%	
Secondary school	7%	29%	

Does your household grow:				
Soya	76%	76%	50	
Corn	93%	86%	50	
Coffee	45%	52%	50	

Does your household have a:				
Radio	7%	5%	50	
Sewing machine	10%	10%	50	
Bicycle	34%	19%	50	

The insurance premium for 1989 was set at 125 Z (\$0.35) per person. In theory, if a family wishes to enroll in the plan, all members of the family must be enrolled, although this practice is not always followed (see discussion, section 2). The size and composition of the family are determined from the family health card, which is filled out for every family in the zone during the health zone census completed every two years. All adults wishing to enroll in the plan face the same premium. Table A.3 shows premiums for 1986-1989:

Table A.3 Annual Premium for
Bwamanda Insurance Plan, Per Person *

YEAR	NOMINAL		1986	
	ZAIREES	DOLLARS	ZAIREES	DOLLARS
1986	20	\$0.33	20	\$0.33
1987	30	\$0.23	22.9	\$0.38
1988	50	\$0.27	24.6	\$0.40
1989	125	\$0.35	28.8	\$0.47

*Exchange rates and inflation rates are found in Annex III.

The insurance plan employs co-payments but no deductibles. In 1989 the co-payment was established at 20 percent of the standard flat-rate charge for 13 of the 14 covered charge categories. (Payor A, the most common payment category, is for non-insured zone residents whose health care is not paid through hospital billing to an employer, as described later in this section.) The exception is obstetrical care to women who were enrolled in prenatal care; in these cases, no co-payment is charged. The 20 percent co-payment applies to treatment of chronic illness cases at the health center level as well.

During 1988, the health zone experimented with a system of variable rates for co-payment, depending on the distance from the hospital. Plan members who lived furthest (over 50 km) away from the hospital of the patient were charged only a 5% co-payment, compared to 10 percent for those living 25 to 50 km and 20 percent for those who lived closest (under 25 km). The plan asked nurses to make a special effort at enrollment especially in outlying areas.

When the hospital staff reviewed the insurance plan at the end of 1988, they thought that the system had not increased access for members living far from the hospital. It was difficult to control, as well, leading the zone to abandon it in 1989. According to Figure A.1, however, which shows the relationships between insurance status and distance, the 1988 program changes (either the variable co-payment rates, the stepped-up awareness campaign, or both) may have influenced the decision of distant residents to enroll in the program. Enrollment declined less with distance from Bwamanda center in 1988 than in the three other years of the insurance plan. There is a clear decrease of the membership rate the further the villages are away from Bwamanda for 1986, 1987 and 1989. Regression analysis confirmed that the slope

was significantly negative ($p < .05$) for all the years except 1988.

There is no evidence that the stepped-up awareness campaign was effective for the close-in health centers. The enrollment rate of villages about 75 km away was 35 percentage points higher than it would have been based on patterns from other years. The squares in Figure A.1 show the actual observations for 1989 as an indication of the variability about the overall pattern. Each observation corresponds to one of the 21 health centers.

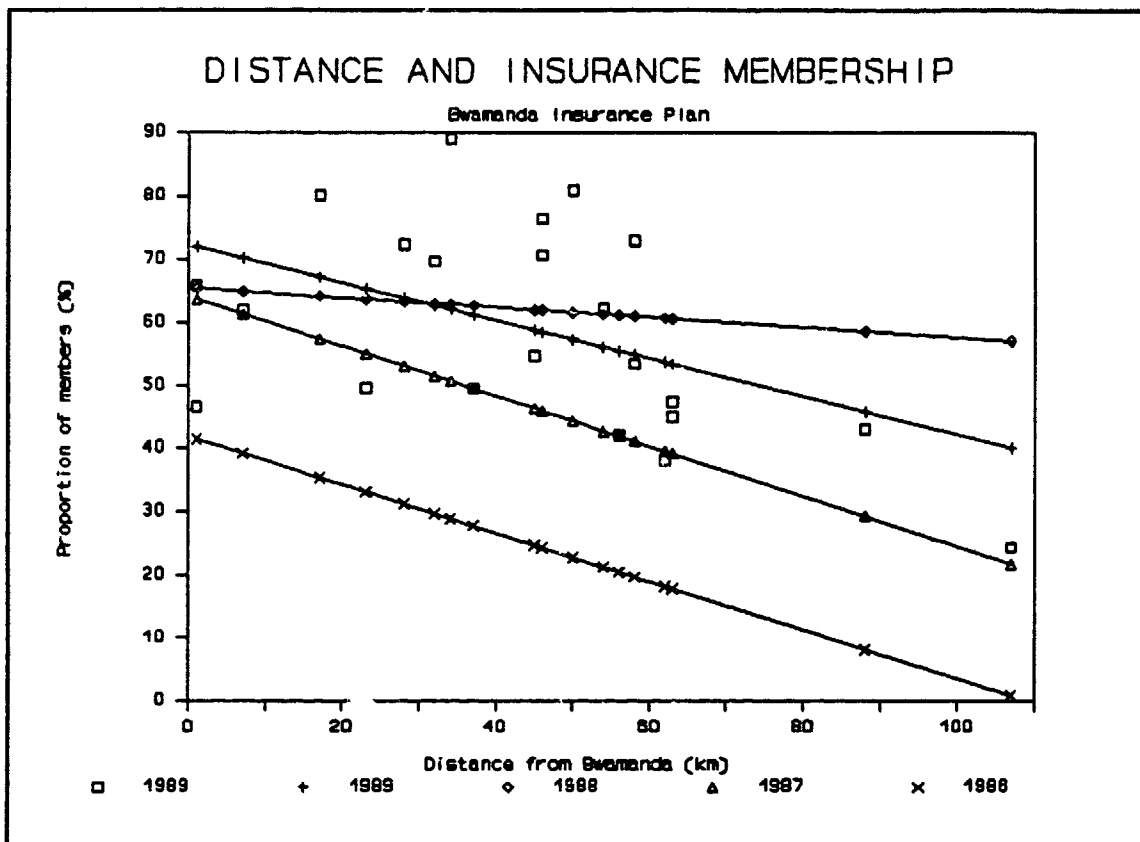


Figure A.1

The Bwamanda plan has two important controls on covered expenses. First, all covered services are provided only by referral. Second, the flat rate charges limit the plan's expenses for each admission.

Since the insurance system is offered by the provider, there is no reimbursement system and thus no "cap" on spending use by the member. There are no limits placed on care-givers regarding the maximum number of services (patient days, laboratory tests, etc.) or expenses used to treat a patient. Standard treatment protocols do exist, and the doctors and other medical staff make efforts to follow them. There are no systems for utilization review or case management, however.

The insurance plan is voluntary; however, if one member of a family wishes to join, all family members are required to pay the premium. This is intended to reduce adverse selection, where only those who know they will probably need insurance subscribe to the plan.

The hospital continues to treat the uninsured, but at prices which are sometimes higher than the full payment on behalf of insured residents.

There are three types of uninsured patients treated at the hospital: Payor Category C: non-residents; Payor Category D: salaried employees, and their families, whose health care expenses are paid through hospital billing to the employer; and Payor Category A: health zone residents who do not fall into Payor Category D and decided not to join the insurance plan. Members of the insurance plan fall into Payor Category B.

For the purposes of this discussion, therefore, four categories of patients exist:

PAYOR CATEGORY	DESCRIPTION
A	Uninsured health zone residents without an employer who pays the health zone directly for employee care
B	Insured residents
C	Non-residents (not eligible for insurance plan)
D^A	Employees whose employer pays the health zone directly for services

As noted earlier, a full list of prices of hospital services according to payor category is provided in Annex II.

Annex IV discusses procedures for fee collection and describes how free care and bad debt are handled. Patients who cannot afford to pay are not turned away from Bwamanda Hospital, but are treated and allowed to pay in installments.

2. Organization and Management

The insurance plan began enrollment in April, 1986. During the first two years of operation, the insurance plan covered only hospital services; coverage of chronic illness treatment at the health center level was added in 1988.

The Bwamanda insurance plan is offered by the provider -- the Bwamanda Rural Health Zone. Accounting for the insurance plan is kept separate from that of the health zone.

The price of the premium is set both to be "affordable", and to cover the expected hospital

⁴ All employers are responsible by law under the "Code de Travail" for providing or paying for the health care services for their employees. Some employers (in particular, the Government of Zaire) do not respect this law. Bwamanda residents who are salaried government employees therefore fall into payor categories A or B, depending on their decision to join the insurance plan. Other employers may decide to reimburse employees for their expenses (for example, employees in small shops, and domestic help), rather than having the hospital bill the employer. In such a case, the employee would again fall into category A or B, depending on whether the employer encouraged the employee to join the health insurance plan. The prices for payor category D are only valid for those employers who have an agreement with the hospital and other health zone facilities whereby the health zone bills the employer for the services provided. Category D includes mostly large, formal sector employers.

operating costs (excluding depreciation) incurred by beneficiaries. Capital costs were considered the responsibility of the government and donors.

To calculate the each new year's premium, the medical staff (primarily the Director of the CDI's medical service) first build the budget for the new year, based on historical costs corrected for historical inflation, and incorporating estimates about the next year's inflation rate, further devaluation of the zaire, and other budget parameters. The staff then divide the estimated operating costs by the total population to obtain the per capita cost of hospitalization for the next year. Using various assumptions about the percentage of the population likely to enroll in the plan, and the expected revenue from uninsured patients (who would pay full charges), the zone calculates projected cost recovery for the hospital as a whole.

The premium for the health insurance plan is then set through discussions involving the whole staff and incorporating social goals as well as cost recovery objectives. For example, the projected premium is compared with the price of two kilograms of soy beans (a commonly produced crop), as a measure of affordability. The medical staff tries to assure that the premium is sufficiently large to cover the claims of the beneficiaries, with some margin of error.

Financial records were not kept accurately the first year, although the plan seemed to cover costs. Using Bitran's data (4), the cost per hospitalization in 1985 was 316 Z. (1,803,844 Z total hospital operating costs excluding depreciation divided by 5,711 hospitalizations.) The probability of being hospitalized in 1985 was 5% (5,711 hospitalizations divided by 114,410 inhabitants). Therefore, the expected cost of hospitalization per inhabitant was 15.8 Z (5% x 316). The premium was set 21% higher than the expected cost, presumably to cover administrative costs, and possible adverse selection.

The premium is collected once a year, at harvest time. There are two harvest periods in the Bwamanda zone; one in July-August, the other in January-February. When communities were asked when they would prefer to make the premium payment, they overwhelmingly preferred the months following the second harvest period (March to April), because they needed cash in August to pay for school expenses (14).⁵

Collection of the premium takes place during a six-to-eight week period in February through April. Prior to this, several preparatory meetings are held with health center staff to orient them to any new changes in plan premiums and administrative procedures, and to present them with the time table and control procedures for the registration period.

Residents enroll in the insurance plan at their health center. When the payment is made, a stamp printed with the name of the health zone and the price is affixed on the individual's medical identity card. The medical card includes the individual's name, village, and enrollment number, and allows space for critical medical events to be registered (vaccinations, prenatal consultations, hospitalizations, etc.). A second stamp, with different color print, is placed on the family health card, which stays at the health center. The health center nurse signs his/her initials over the stamp on the medical card, taking care that the signature also touches the card, to avoid cases of fraud where unsold stamps are stolen and affixed to cards, or stamps are moved from one person's card to another's.

The health center nurse also registers information about each enrollee in special notebooks, which are organized by village. These notebooks are then used for control purposes at the hospital level to control that the bearer of an insurance card is really the person named who registered.

⁵ Annex IV provides examples of many of the documents described below and in the subsequent section on identification of the uninsured.

During the enrollment period, health zone administrative staff make frequent trips to the health centers to collect the premiums, distribute stamps, and monitor record-keeping. Each health center is visited 10 to 12 times during this 6 to 8 week period. An example of the control sheet for the sale of membership stamps is attached in Annex IV.

According to Moens, the incremental cost of administering the program was 75,242 Z (\$586) in 1987, or 4.2% of the premiums collected (14). This amount does not include the cost of salaries of health zone staff who are involved in regular record-keeping and control activities (verification of membership of hospitalized patients), since no additional staff were hired to work full-time on administering the insurance plan. The authors estimate that the full cost of plan administration in 1989 (including the cost of part-time administrative staff) will be 632,015 Z. (\$1,784), or 5.7% of the premiums collected.

All cases which are seen at the hospital must either be referred by a health center or must pay for a private doctor visit not eligible for insurance coverage. When an insured patient arrives at the hospital, he presents his referral slip. The referral slip indicates the insurance membership number, which is also the number accorded the family during the health zone census. If referred, all patients may see the doctor in this manner, before paying any fees. Since referral is mandatory, most cases warrant hospitalization; the doctor then fills out a hospitalization card during the patient's initial encounter, transcribing the insurance membership number from the referral slip.

The cashier's office then checks the patient's insurance number against the insurance plan membership register, which was filled out by the health center nurse during the enrollment process. As mentioned earlier, these notebooks are organized by village. If the patient's name appears in the insurance membership register, the patient is charged the insured (Payor Category B) price, generally a 20 percent co-payment. If the name does not appear in the register, then the patient pays one of the other prices, depending on payor category. The cashier clerk writes a receipt, which is stapled to the patient's hospitalization card. Each payor category has a different color or type of receipt. A copy of the receipt rests with the clerk, who then transcribes the information into the cashier's register, a chronological register of all paying hospitalized cases.

Three categories of patients pay no fee when they receive care: (1) women delivering babies who are insured and received prenatal care; (2) trypanosomiasis patients who are covered under a special donor program; and (3) school children for whom an annual aggregate payment is paid by the schools.

Premiums are deposited in a special fund for the insurance plan, at the CDI. The health zone administrator keeps the financial records regarding deposits, withdrawals and transfers from the fund. Each month, the hospital bills the insurance fund for the services provided to hospitalized patients who are insured. The bill is calculated by multiplying the number of insured patients hospitalized in each service by the unit charge per service, minus the copayment.

The hospital administrator also records the amount of interest which the fund accumulates each month. Between 1987 and 1989, interest rates paid by the CDI have ranged from 2.5% (1989) to 3% per month (1987 and 1988). Administrative expenses (bonus payments to staff during enrollment period, transportation expenses, enrollment register-books and stamps) are also subtracted from the fund, although the chart of accounts is not used to record the nature of each expense.

At the start of the 1989 accounting year (April 1989), the insurance fund loaned the health zone's pharmacy 7 million Zaires (69% of the fund's balance). In August, the pharmacy repaid 3 million Zaires to the insurance fund. In lieu of interest, at the end of the year the pharmacy

administrator (a Belgian nurse) will calculate the benefit to the pharmacy from having purchased drugs early in the year, before the Zaire devaluated further, and will remit this amount to the insurance fund.

3. Resource Mobilization

A principal objective in establishing Bwamanda's insurance plan was to improve the financial situation of the reference hospital. Social goals were also incorporated into the design of the plan, notably the decisions to provide 100% coverage of deliveries and to provide coverage of chronic illness treatment at the health center level. This section presents a financial analysis of the relevant policy questions:

- o Has the insurance plan helped the financial condition of the hospital?
- o What effect has providing coverage of chronic illness care had on the cost recovery performance of health centers?
- o Is the insurance plan financially sound? Do the premiums cover the cost of services to beneficiaries, plus administrative costs? How important is revenue from interest?

Table A.4 presents the financial statements for the insurance plan from 1987 through 1989.

The data show that in 1987 and 1988 the insurance plan covered 100% of hospital charges for health care benefits provided to beneficiaries, and covered incremental administrative costs, with positive margins. The plan is projected to cover hospital charges and administrative costs in 1989, as well.

Hospital charges are naturally the largest expense category (89% in 1989). Charges for chronic illness cases treated at the health center level account for 6 to 7% of expenses, while administrative costs are 4 to 6%.

Table A.5 shows the financial situation of the hospital for 1985 to 1986 and 1988 to 1989. (Data for 1987 were not available). The table shows that cost recovery of the hospital improved with the implementation of the insurance plan between 1985 and 1988. In 1985, the hospital covered approximately 48% of operating costs (excluding depreciation and expatriate salaries) with user charges. This figure jumped to 65% in 1986, and 79% in 1988.⁶

Using the inflation rates in Annex III, real operating revenue grew by 21% and real operating expenses grew by 70% from 1985 to 1989, the period over which the insurance program was implemented.

In 1989, operating revenue is projected to cover only 35% of operating expenses. This figure is suspect, however, because of the complex accounting procedures and co-mingling of funds within the Bwamanda health zone. (The health zone only makes accrual and other adjustments once a year, when preparing year-end financial operating statements. These had not yet been made and were not factored in the projection).

The percentage of total expenses allocated to salaries increased from 41% in 1985 to 53% in

⁶ Depreciation figures are not available for all years, and so were not included in Table A.5. In 1988, depreciation expense was 415,000 Z (\$2,219). When depreciation expense is included, cost recovery falls to 76%.

Table A.4 Financial Situation of Bwamanda Insurance Plan, 1987-1989
Current Zaires, with adjustments (see note)

	1987		1988		1989*	
	Current Zaires	% of Expen.	Current Zaires	% of Expen.	Current Zaires	% of Expen.
REVENUE						
Premiums (unadjusted)	1,785,060		4,023,100		10,177,250	
Adjusted**	2,065,314	118.9%	4,851,859	101.0%	11,011,785	98.6%
Interest	460,692	26.5%	935,755	19.5%	710,596	6.4%
ADJ. PREM & INTEREST:	2,526,006	145.4%	5,787,614	120.5%	11,722,381	104.9%
EXPENSES						
Hospital care	1,671,500	96.2%	4,226,055	88.0%	9,915,491	88.8%
Health center care	0	0.0%	346,250	7.2%	622,582	5.6%
Total care:	1,671,500	96.2%	4,572,305	95.2%	10,538,073	94.3%
Vehicle; stationary	N/A		N/A		198,920	1.8%
Staff bonus payments	N/A		N/A		338,295	3.0%
Administrator (10%)	N/A		N/A		22,800	0.2%
Membership clerk (50%)	N/A		N/A		72,00 ^c	0.6%
Total administration:	65,378	3.8%	229,885	4.8%	632,015	5.7%
TOTAL EXPENSES:	1,736,878	100.0%	4,802,190	100.0%	11,170,088	100.0%

NOTES:

* Expenses and interest in 1989 are extrapolated from 5.5 months of data.

** Premium revenue is received in a lump sum early in the year (on average in March), while expenses are evenly distributed throughout the year. Thus a slight adjustment is needed within each year, to assure comparability of nominal Zaires. The premium revenue has been inflated by the following three-month inflation factors

1987:	1.157
1988:	1.206
1989:	1.082

Exchange rates and inflation rates for each year are found in Annex III.

1988.⁷ If expatriate salaries were included, the hospital's total operating costs would rise by 8% (using salaries of Zairian staff) or 58% (using a conservative estimate of actual salaries). The amount spent on drugs rose from 31% in 1985 to 47% in 1986, then fell again to 30% in 1988.

Table A.6 shows the financial situation of Bwamanda's health centers and health posts. In 1988, the year the plan coverage went into effect at the health center level, health centers received 346,250 Z (\$1,852) from the insurance plan for services provided to members. This accounted for 3.1% of their total operating revenue. The health centers had a 14.2% profit

⁷ The value of expatriate salaries has not been included in the financial statements because data are not available from all years. In 1989, the hospital benefitted from the donated services of five expatriate volunteers: three nurses and two doctors. Valued at the salaries of equivalent Zairian staff, this subsidy of in-kind services is worth 4,020,000 Z (\$11,349), accounting for a 31% increase in personnel expense, and an 8% increase in overall hospital operating expenses. With the value of expatriate salaries included, personnel expense accounts for about 38% of total expenses.

margin in 1988 (excluding depreciation).

Table A.5 Financial Situation of Bwamanda Hospital, 1985-1986, 1988-1989
Nominal Zaires

	1985		1986		1988		1989	
	Nominal	% of Expen	Nominal	% of Expen	Nominal	% of Expen	Nominal	Exp. Rev.
OPERATING REVENUE								
User fees	N/A	N/A	873,652	29.8%	2,267,800	24.0%	3,960,089	12.9%
Employer billing	N/A	N/A	394,353	13.4%	2,045,425	21.6%	714,750	2.3%
Insurance plan	0	0	650,900	22.2%	3,120,905	33.0%	5,204,045	17.0%
Other	N/A	N/A	0		30,600	0.3%	743,925	2.4%
TOTAL:	878,583	48.7%	1,918,905	65.4%	7,464,730	78.9%	10,622,809	34.7%
OPERATING EXPENSES								
Personnel (excl. expats)	739,207	41.0%	1,007,462	34.3%	5,036,307	53.2%	9,082,368	29.7%
Drugs and med. supplies	563,607	31.2%	1,337,286	47.3%	2,830,552	29.9%	15,272,868	49.9%
Office supplies	75,515	4.2%	40,093	1.4%	204,086	2.2%	526,853	1.7%
Transport	84,729	4.7%	0	0.0%	0	0.0%	2,003,736	6.5%
Maintenance	176,947	9.8%	146,678	5.0%	499,619	5.3%	1,431,446	4.7%
Fuel & electricity	163,839	9.1%	276,101	9.4%	676,749	7.2%	131,813	0.4%
Food service & other	0	0.0%	76,795	2.6%	212,687	2.2%	2,174,505	7.1%
TOTAL:	1,803,844	100.0%	2,934,415	100.0%	9,460,000	100.0%	30,623,588	100.0%
OPERATING SUBSIDIES:	925,261	51.3%	1,015,510	34.6%	1,995,270	21.1%	20,000,779	65.3%

NOTE: 1989 figures are extrapolated from 8 months of data.

Table A.6 Financial Situation of Health Centers in Bwamanda, 1985-1986, 1988-1989
Nominal Zaires

	1985		1986		1988		1989	
	Nominal	% of Expen.	Nominal	% of Expen.	Nominal	% of Expen.	% of Expen.	
OPERATING REVENUE								
User fees	1,312,131	106.5%	2,283,794	109.2%	12,393,789	111.1%	19,231,628	92.5%
Insurance plan	0	0.0%	0	0.0%	346,250	3.1%	993,873	4.8%
TOTAL:	1,312,131	106.5%	2,283,794	109.2%	12,740,039	114.2%	20,225,501	97.2%
OPERATING EXPENSES								
Personnel (excl. expats.)	476,244	38.6%	649,670	31.1%	2,973,758	26.7%	6,537,590	31.4%
Drugs and med. supplies	521,298	42.3%	1,197,702	57.3%	6,899,327	61.8%	10,932,372	52.6%
Office supplies/maint.	126,405	10.3%	243,342	11.6%	1,283,712	11.5%	1,888,631	9.1%
Supervision fees	108,600	8.8%	0	0.0%	0	0.0%	1,040,469	5.0%
Hosp. prenatal services	0	0.0%	0	0.0%	0	0.0%	402,442	1.9%
TOTAL:	1,232,547	100.0%	2,090,714	100.0%	11,156,797	100.0%	20,801,503	100.0%
PROFIT (DEFICIT):	79,584	6.5%	193,080	9.2%	1,583,242	14.2%	(576,003)	-2.8%

NOTES: 1989 figures are extrapolated from 8 months of data.

Cost recovery in Bwamanda's health centers was high even before the plan went into effect: in 1985, the health centers had a profit margin of 6.5 percent, excluding depreciation. In 1986,

cost recovery was even better, with a 9.2% profit margin, although the financial records show that the zone did not charge the health centers for supervision costs in 1986 and 1988.

Hospital costs in the Bwamanda health zone are similar to those of other well functioning zones. Of the eight zones for which Bitran et al compiled per capita hospital expenditures⁸ in 1985, Bwamanda ranked third lowest (4). Its per capita cost was \$0.42 (21 Z) compared to the eight-zone average of \$0.65 (32 Z).

4. Utilization and Access to Services

Theories of insurance suggest that insured persons may use more services than uninsured due to both adverse selection (the tendency of persons more likely to need services to purchase insurance) and moral hazard (the tendency of persons to be more profligate in demanding services when they face few financial penalties). These phenomena make the development of insurance more difficult because they raise premiums, further discouraging health, low cost people from buying insurance. The authors examined whether these theories applied to Bwamanda and confirmed that they did.

The authors' analysis of utilization data showed that distance and membership status strongly affect hospital utilization. Hospitalization rates are higher for members and workers with employer-provided health care coverage than for Bwamanda residents who have no form of health insurance or employer coverage. The authors examined this pattern with two sets of data: monthly utilization statistics tabulated by each service, and a ten percent sample of entries from the hospital register for all admissions.

Table A.7 compares the insurance status of hospitalized patients with the insurance status of Zaire's population. While 77% of the patients are insured, only 60% of the health zone population are members of the insurance plan. Persons covered by an employer are even more overrepresented among the patients than in the population. There are three times more employed persons, and only a third as many uninsured patients hospitalized than expected from their frequency in the population.

Table A.7 Distribution of Payment Categories in the Population and Hospital Patients, Dec.1988 - Oct.1989 (maternity patients excluded)

PAYMENT CATEGORY	POPULATION		HOSPITAL PATIENTS FROM ZONE*	
	PERSONS	%	SAMPLE	%
Employed	6,176	4.6%	54	17.3%
Insured	81,142	60.2%	240	76.7%
Total not insured	47,362	35.2%	19	6.1%
TOTAL	134,680	100.0%	313	100.0%

* The original sample of 329 patients included 16(4.9%) from outside of Bwamanda zone. They were removed from the "not insured" category, leaving the 313 patients reported here.

⁸ These were derived by dividing the total expenditures for hospitals in the zone by the zone's population. This calculation does not adjust for net border crossing.

The systematic one in ten sample of patients from the admissions register covered patients admitted from December 1988 through October 1989. Data were analyzed according to four major service categories: pediatrics, internal medicine, gynecology and surgery. Obstetrical patients were excluded because of incomplete records.

Based on the hospital register, Table A.8 shows that the annual hospitalization rate was 10.5% for salaried workers and family members with employer-paid health coverage; 3.6% for members of the Bwamanda insurance plan; and 0.5% for Bwamanda residents without insurance or employer coverage.

Table A.8 1989 Admission Rates by Payment Category

Service (Population)	-----Payment Category-----			TOTAL ZONE	Over- all Total n.a.**
	Not Insured	Insured	Employed		
	47,362	81,142	6,176	134,680	

	Annual Admissions:*				
Surgery	166	547	71	788	840
Gynecology	29	132	26	276	283
ALL (Exc.Obs.)	231	2,640	594	3,465	3,330

	Annual Admission Rates (%):				
Surgery	0.35%	0.67%	1.15%	0.59%	
Gynecology	0.06%	0.16%	0.43%	0.20%	
ALL (Exc.Obs.)	0.49%	3.25%	9.62%	2.57%	

	Risk Ratios for Admissions:				
Surgery	1.0	1.9	3.3	1.7	
Gynecology	1.0	2.7	7.0	3.4	
ALL (Exc.Obs.)	1.0	6.7	19.7	5.3	

NOTES:

* Numbers of surgery and gynecology admissions were extrapolated from complete utilization statistics from January through June, 1989 by doubling the six-month total. Numbers of annual admissions for all services (excluding obstetrics) were extrapolated from a 10% sample of such admissions from December 1988 through October 1989 by multiplying the total by 12/11. The extrapolations were based on 657 surgical admissions, 230 gynecology admissions, and 329 total non-obstetrical admissions, respectively.

** Overall admissions include admissions of patients from outside of the Bwamanda health zone.

The risk ratio for a payment category is the ratio of the admission rate for that category relative to the rate for uninsured persons. The risk ratios across these services show consistent patterns. Insured patients had from 1.9 to 6.7 times the admission rates of uninsured patients. Employed patients had dramatically higher admission rates: 3.3 to 19.7 times those of uninsured patients.

This pattern of higher rates for insured and employed persons, compared to uninsured, is probably the combined effect of moral hazard, some adverse selection, better access, (closer residents were more likely to be insured) lack of adequate controls (which may permit non-members to falsely present themselves at the hospital as members) and random variation due to small numbers. Table A9, based on the survey, provides further support of adverse selection and/or moral hazard.

Table A.9 Survey of Hospitalized Patients in Bwamanda

Characteristic	Insured (N=29)		Uninsured (N=21)		Stat. Sig.
	Mean	STD	Mean	STD	
Age in years	20	19	22	20	
Payment for current hospitalization in Zaire	1568	1700	4083	4070	**
Number of episodes of serious illness in household during 1988 and 1989	2.4	2.9	1.6	1.2	
Number of hospitalization episodes in household during 1988 and 1989	2.6	4.4	1.7	1.2	
Number of times the patient was hospitalized from 1985 thru 1989	2.8	2.7	1.3	1.8	**
Number of persons in household:					
Children	5.5	6.7	5.6	3.1	
Younger adults	3.8	3.5	2.7	1.2	
Elders	0.7	1.1	0.6	0.7	
TOTAL	10.0	8.4	8.9	3.3	

For employed persons, both the hospital and the patient have every incentive to hospitalize. Care is free to the employee, and the hospital is paid two to three times the fee of a self-paying patient. The problem of higher hospital use by insured patients has not had a serious effect on the financial solvency of the insurance plan, since the plan covers such a large percentage of the population (60%). With lower enrollment, such a problem could bankrupt an insurance system. The fact that insured patients use only a third to a half as much hospital care as employed persons suggests that the 20% copayment may have limited moral hazard.

Principles of medical geography suggest that people will consume more health services the nearer they live to the site of care. By examining the pattern, one can see whether the data on utilization rates are plausible. Further, by examining utilization for both distance and insurance status, simultaneous possible confounding between these variables can be eliminated. The figure shows that insured patients used more services, regardless of distance. A similar pattern held for internal medicine admissions (one third of all admissions), separately.

Overall hospital admission rates for all services (excluding obstetrics) were also examined by distance for 1989. Figure A.2 shows the regression of admissions for all payment categories and admissions with insurance coverage on distance from the hospital. The 21 observations are villages covered by Bwamanda Hospital.

There was no evidence of any meaningful difference in delay between insured and uninsured patients. A patient going to Bwamanda Hospital knows that he must pay on or near admission. As an uninsured patient faces higher fees, it may take him longer to assemble the necessary cash. Using data from Kombo, Bombisa, and Dondeme Health Centers, the authors found minimal delay among both insured and uninsured patients in both groups.

In previous work, Moens had examined whether patients actually followed up on referrals to the hospital. He found that rates were high and comparable for both insured and uninsured patients.

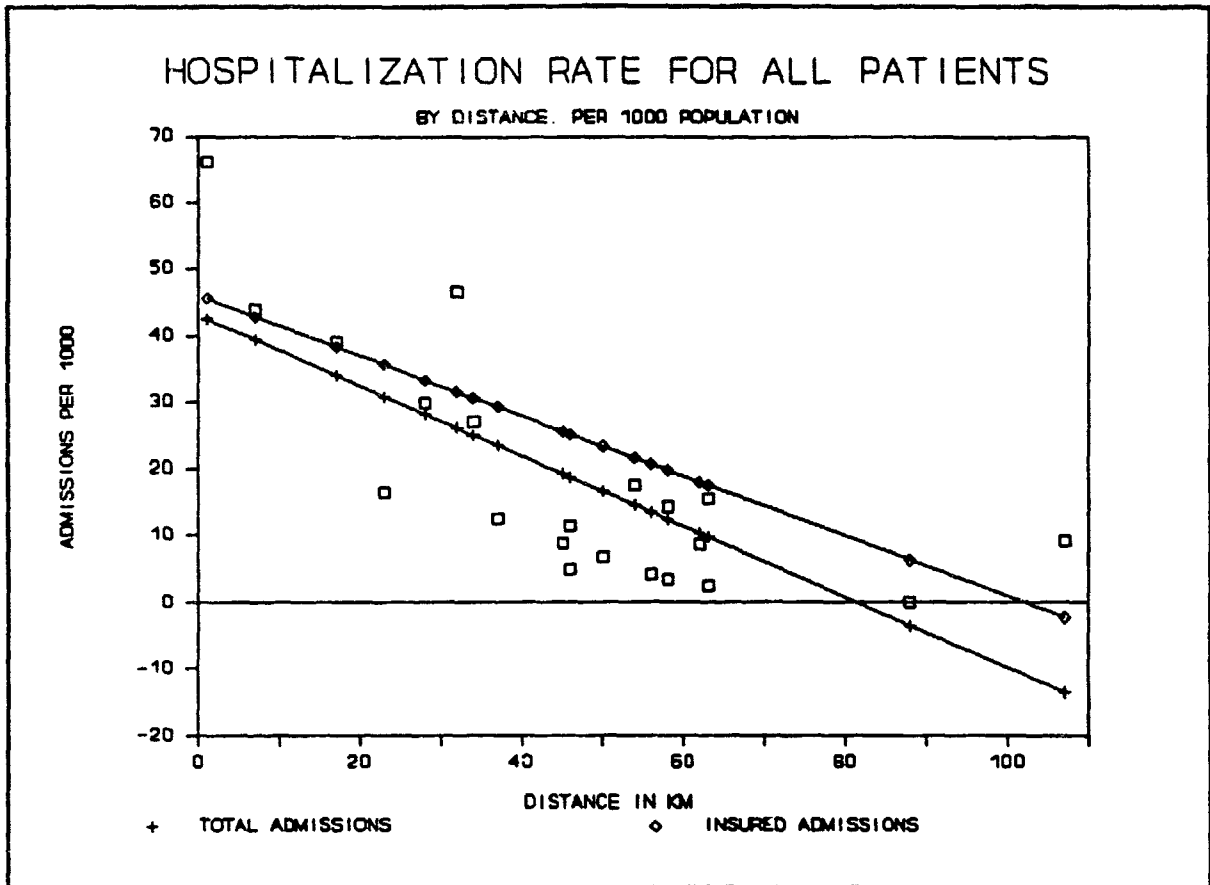


Figure A.2

The study team examined a number of other indicators of quality for differences between insured and uninsured persons:

- Proportion of high risk pregnancies delivered in hospital
- Proportion of all deliveries in hospitals
- Age adjusted overall death rate overall
- Childhood death rate
- Proportion of pregnant women enrolled in ante-natal care
- Birth rate
- Length of hospital stay.
- Delay in starting delivery.

The study team tested most of these indicators with a visit to Isabe health center, one of the health centers served by Bwamanda Hospital. In theory, the data to calculate most of these indicators should have been available at the health center through the family registration cards; the remaining data should have been available at the hospital. In practice, the data proved inadequate because family cards did not necessarily record every birth and death, particularly if they occurred at home or in the hospital. For example the Isabe household cards in Isabe showed 876 people. The cards reported only 21 births (about half the expected number) and 8 deaths (also fewer than expected).

Table A.10 presents comments of insured and uninsured patients towards possible changes in

insurance. Members (n=29) indicated their benefits and disadvantages. Non-members (n=21) indicated why they did not join. Members were interested in seeing ambulatory care covered at a modest increase in premium. Those not joining had diverse reasons, including living outside the catchment area.

Table A.10 Swamanda Survey: Attitudes

Survey question	No. of % Respond.	
Can you increase your premium from 125 to 200 Zaire to cover ambulatory care?		26
Yes	80.8%	
No	19.2%	
Why did you decide to be a member?		29
Cheapest way to get care	89.7%	
Quality of care is better	3.4%	
solidarity	3.4%	
I thought it was obligatory	3.4%	
Other	3.4%	
What benefits do you receive from your membership?		27
The personnel sees me faster	37.0%	
I have better health	3.7%	
I want to support the institution	3.7%	
Quality of care is better	22.2%	
Other	3.7%	
No response	29.6%	
What are the disadvantages or problems of insurance scheme?		29
Too expensive	6.9%	
It is necessary to come for follow up visits	17.2%	
No response	75.9%	
Why are you not a member of the insurance scheme?		21
I have no money	16.0%	
I didn't know at the time of	5.0%	
Other	75.0%	

B. CASE STUDY OF BOKORO

The rural health zone of Bokoro, located in the Bandundu region of Zaire about 350 km north-east of Kinshasa, was created in 1981. Services at health centers and hospitals are coordinated by a central office (Bureau Central de la Zone de Sante, BCZS). The various organizations which provide health care in the zone are represented in the zone health committee: the government, the Catholic and Baptist missions, the Belgian Cooperation, etc. The zone recovers a substantial part (over 80% in 1988) of its recurrent costs including local salaries through fees for services. Certain services receive technical and financial assistance from a variety of sources to close the gap between the available budget and expenditures. The referral hospital Bokoro recovers over 60% of its costs through fees for services.

In contrast to the Bwamanda health zone, the referral hospital in Bokoro does not enjoy a monopoly position. It faces several officially recognized and some "illegal" competitors for inpatient care. The hospital has made considerable efforts since its creation to improve access to ambulatory inpatient care all over the zone. As a result, occupancy rates in the Bokoro hospital have decreased drastically since the late 1970's. When the rate stabilized in 1987 at about 1200 admissions per year excluding the maternity, it was about half the level of 1978. The number of available hospital beds decreased simultaneously, from 127 in 1986 to 78 in 1989, resulting in an annual occupancy rate of 40% to 45%. The average length of stay is about 10 days.

In addition to the inpatient care, the hospital provides ambulatory care to 1,500 to 2,000 patients every year amounting to about 5% of its annual operating expenses in 1988.

1. Terms of the Insurance Plan

The Bokoro subscription plan is a direct insurance plan, offered by the provider, the Bokoro Rural Health Zone. Since its introduction in 1985 the insurance plan, called the "abonnement," has undergone dramatic changes. Originally intended to guarantee comprehensive care, including preventive, ambulatory and inpatient care at the peripheral and referral level, today this plan covers only curative ambulatory care. Due to financial difficulties, extra charges are imposed for chronic diseases like diabetes and hypertension. Preventive care, family planning, deliveries, prolonged treatment, treatment of sexually transmitted diseases and antibiotics and injections are not included in the insurance plan; patients must pay for these. First line treatments of tuberculosis and leprosy are provided free of charge through separate programs.

Table B.1 shows the full charge schedule at the health center. Insured patients pay 25 percent of these charges; uninsured patients pay the full amount. There is no cap on spending. As virtually all enrollees are employees, any cap would be inconsistent with the Zaire employment laws, which require employers to pay for all medical care.

Most employers in the zone, including health services, missions, and processors of agricultural products (such as BIMPE) enrolled their workers and dependents in this plan. Presently over 4,000 persons are covered, representing 4.5% of the Bokoro Health Zone. Enrollment in the insurance plan ("abonnement") costs 1,200 Z per person per year. When one family member enrolls, the entire family is obliged to subscribe. This requirement reduces the likelihood of an adverse selection as well as sharing one card among family members. Contributions for an entire family can easily reach 12,000 Z. This premium is very expensive for the general population; thus, the enrollment rate outside of employees is presently close to nil.

No co-payment was associated with the plan initially. To reduce the moral hazard patients must now make a 25% co-payment of the normal non-subscriber fees. Because only employees are enrolled and they should be reimbursed for this copayment, this policy should not affect

**Table B.1 Fees for Service at Health Centers
Bokoro Health Zone, 1989**

SERVICE CATEGORY	ZAIRE
CONSULTATIONS *	
Children, registered at MCH	120
Children, not registered	150
Patient above 14 years	180
Patient from outside zone	250
MATERNAL and CHILD HEALTH	
Pre-school care incl. immunization (5 yrs.)	200
Ante natal care (9 months **)	200
Planned parenthood (12 months)	300

- *) For one disease episode up to 5 days duration.
Extra charges apply for: antibiotics, drugs after the fifth day, fee for after hour consultations.
- ***) Excluded: weekly malaria prevention.

utilization substantially. From the survey, it was not clear whether insured respondents were actually reimbursed for all medical costs.

Services are fully available to uninsured persons upon payment of a flat fee for an episode of care. A minimum charge was set at 180 Z for an adult in 1988 by the BCZS. However, the health committee for a health center can decide to charge more, for example 500 Z. Services covered by the flat rate are limited. Extra charges arise for antibiotics, prenatal and child care.

To better characterize the insured and uninsured population and to assess interest in other forms of insurance, a small survey was conducted. The questionnaire was similar, though not identical, to the one used in Bwamanda, discussed above. The questionnaire was written in Lingala. Annex V contains a copy of a completed questionnaire in Lingala and an English translation. Of the 47 subjects interviewed, 21 were a systematic one-third sample of the 63 non-maternity inpatients in Bokoro Hospital, and 26 were heads of families (all farmers and fishermen) from the towns of Bokoro and Kempa, 12 km outside Bokoro. These 26 families were chosen systematically from family cards in the health centers of Bokoro and Kempa. Table B.2 characterizes the insured and uninsured respondents.

Table B.2 Bokoro Survey: Population Characteristics.

Characteristic	Insured (N=21)	Uninsured (N=26)	Valid Responses
Gender:			
Female	29%	46%	47
Male	71%	54%	
Average Age	35	32	47
SD of Age	14	20	

*Patients from:			47
Bokoro Hospital	38%	50%	21
Bokoro Town	33%	23%	13
Kempa Town	29%	27%	13
Receives a salary each month	19%	8%	47
Occupation:			47
Agriculture/Cultivation	57%	65%	
Fishing	10%	8%	
Teacher	14%	0%	
Driver	0%	4%	
Employed (details unspecified)	5%	8%	
Trader	10%	4%	
No occupation or no response	5%	12%	
Employer:			47
Para-statal enterprise	5%	0%	
None or no response	95%	100%	
Would you be able to pay in cash 10,000 Zaires for an illness requiring minor surgery in a hospital?			47
Yes	19%	4%	
No	76%	88%	
No response	5%	8%	

 * Percentage of respondents from each source insured: Bokoro Hospital, 38%; Bokoro town, 54%; Kempa town, 46%.

2. Organization and Management

Three major concerns led to the introduction of an insurance plan in 1985 by the health zone authorities: a) the financial accessibility to health care was too limited for the majority of the population of the zone; b) a referral to the hospital was a severe financial burden; and c) revenues were not able to cover most recurrent costs.

The level of the premium is based on historic utilization rates, an average length of an episode and the quantity of drugs and materials consumed. The utilization pattern of a group of private employees (BIMPE corporation) was initially used as a standard. The premium was set to 600 Z in 1985 and remained constant until April 1989. In that month, the rate was doubled to 1,200 Z. Actual utilization in 1989 was found to be two consultations per member per year and the average cost was 500 Z per consultation.

In April 1989, the annual premium was doubled to 1200 Z. The increase anticipated continuing inflation (which sometime exceeded 100% per year), and a possible increase in utilization.

Insurance premia are paid to the provider, the health center. Premia for employed persons and their dependents are paid by the employer. In theory, people could enroll at any time during the year. In practice, enrollment tended to be highest after the two harvest and fishing seasons in this area, January, July and August, when the agribusinesses had the most cash and were best able to pay the annual premia for employees.

The names of all insured family members are recorded on duplicate forms. One copy remains at the health center and the other with the family. No unique identification numbers were used for each subscriber. The study team found no controls that would prevent non-enrolled persons from borrowing an insured person's enrollment form. It was not possible to assess the extent to which free care was provided to unregistered persons or persons where the

membership had expired.

Although the Bokoro subscription plan does not cover inpatient care, it indirectly pays for the initial hospital consultation. Prior to admission the patient pays a consultation fee for the physician visit. About two thirds of the outpatients are referred by the health centers. For each referred outpatient, the hospital charges the referring health center 300 Z, thereby generating about 300,000 Z. Referred patients themselves pay nothing for this consultation, but they do pay regular hospitalization charges if they are admitted. Self-referred patients pay 500 Z for their outpatient consultation.

The system of referral accounts for health centers was introduced in 1985. These accounts were intended to pay for hospital care of patients referred from the health center for continued treatment of the same illness episode. Due to limited revenues, however, only outpatient consultations at the hospital are included today. Fifty percent of the health centers' profit (the balance of revenues after deduction of recurrent expenses and costs of drugs) is credited every month to the referral account.

This system of referral accounts, similar to one used in the town of Kasongo, was intended to provide a form of risk pooling. Minor outpatient episodes would have subsidized more costly problems requiring hospitalization. Kasongo reportedly has had similar problems to Bokoro, however. At the level of flat fees for outpatient care that are acceptable, it is not possible to generate sufficient revenues to finance inpatient care.

All revenues after deduction of local expenses are transferred monthly to the central account of the health zone at the Service d' Approvisionnement en Fournitures, Equipements et Medicaments (SAFEM), which keeps separate accounts for the hospital, zone, and pharmacy. At the BCZS each health center has its own account showing debits and credits. Funds generated by the insurance plan are not separated from other revenues. As a result, it was not possible to estimate the administrative effort for the plan separately.

3. Resource Mobilization

The health zone as a whole operated at a deficit each year from 1986 through 1989. In 1988, the deficit was 2 million Z. The majority of health centers either have deficits or generate insufficient profits to cover the administrative costs of the BCZS. There is a severe disincentive for these health centers to function well. If they make a profit, only 15% is retained for investments and only 10% for discretionary use by the health committee. Moreover, there is no punishment for bad performance; rather the good centers will have to share the entire burden.

Preserving premium income over the year is a problem throughout Zaire. Savings kept in cash is eroded by inflation, and bank interest rates are generally far below inflation. The study team identified several institutions in which revenues from the health insurance plan could be invested. Last year a rural savings cooperative, Societe Cooperative d'Epargne et de Credit de Bokoro (SECREB) was created by private citizens. A very competitive interest rate will be paid this year for short term (several months) deposits. An alternative is several private merchants who supply farmers with tools and material and who buy their products. Several of them are seen by long time Bokoro residents as serious partners for investments.

Before examining the financial status of Bokoro hospital, its charge structure will be reviewed. An advance of 2,500 Z has to be paid on admission. This amount covers an anticipated period of hospitalization of 10 days; the minimum charge is for five days (1250 Z). Any unused balance is refunded to the patient. In addition the patient pays for various procedures and for certain drugs. Table B.3 shows a detailed price list for services provided at Bokoro Hospital.

Table B.3 Fees for Service at Bokoro Hospital, 1989

SERVICE CATEGORY	ZAIRE	SERVICE CATEGORY	ZAIRE
AMBULATORY CARE		INPATIENT CARE	
Consultation, referred	300	Deposit	2,500
Cons. non-referred	500	Minimum Payment	1,250
Cons. nurse on duty	200	Any additional day	250
Outpatient care < 1 week	500	Private room per day, standard	500
Diabetes (6 months)	250	Private room per day, luxury	650
Private consultation	1,000	Laboratory, cat. 4	250
Medical certificate	500	Surgery, cat. 1	2,100
Laboratory, cat. 1	50	Surgery, cat. 2	3,150
Laboratory, cat. 2	100	Surgery, cat. 3	4,050
Laboratory, cat. 3	150	Surgery, cat. 4	4,850
Laboratory, cat. 4	250	Surgery, cat. 5	7,200
X-Ray	1,000	Surgery, cat. 6	8,650
Ultrasound, extern, w/ med.need	1,000	Spinal anesthesia	850
Ultrasound, extern, on demand	2,000	Ultrasound	500
Echocardiogram	350	X-Ray	1,000
Surgery, cat. 1	1,250		
Eye examination	250		

Table B.4 Financial Situation of Bokoro Hospital, 1986 - 1989

	1986		1987		1988		1. HALF 1989	
	Exp.	Rev.	Exp.	Rev.	Exp.	Rev.	Exp.	Rev.
OPERATING REVENUE								
User fees and insurance plan	2,218,013	91.7%	3,189,941	99.3%	5,220,314	96.9%	4,147,044	98.3%
Others	201,598	8.3%	21,398	0.7%	164,501	3.1%	71,782	1.7%
TOTAL:	2,419,611	98.7%	3,211,339	56.3%	5,384,815	66.3%	4,218,826	62.1%
OPERATING EXPENSES								
Personnel (excl. expats)	846,222	49.6%	2,049,358	52.8%	2,768,706	46.4%	2,932,384	44.5%
Drugs and med. supplies	404,718	23.7%	990,890	25.5%	2,322,755	38.9%	2,834,017	43.0%
Office supplies	16,220	1.0%	29,483	0.8%	39,113	0.7%	78,296	1.2%
Transport	610	0.0%	96,548	2.5%	141,861	2.4%	31,334	0.5%
Maintenance	61,403	3.6%	105,648	2.7%	126,212	2.1%	127,772	1.9%
Fuel & electricity	216,910	12.7%	444,757	11.5%	429,037	7.2%	555,316	8.4%
Food service & other	159,499	9.4%	164,234	4.2%	140,943	2.4%	34,282	0.5%
TOTAL:	1,705,582	100.0%	3,880,918	100.0%	5,968,627	100.0%	6,593,401	100.0%
OPERATING SUBSIDIES:	33,099	1.3%	2,497,184	43.7%	2,742,143	33.7%	2,574,322	37.9%
		100.0%		100.0%		100.0%		100.0%

Table B.4 shows the cash flow of Bokoro Hospital from 1986 through the first six months of 1989. Revenues from operations together with subsidies cover hospital expenses every year. While in 1986 almost 99% of operating expenses came from operating revenues, this share dropped to 56% the following year. In 1988 and 1989, respectively, 34% and 38% of operating expenses are covered from subsidies. The Catholic mission, the Belgian Cooperation, SANRU, FONAMES, and the government of Zaire contributes salaries for some of the personnel.

The share of expenses for drugs and medical supplies has doubled over the past four years and is approaching 50% of the hospital's recurrent costs.

It was not possible to distinguish between revenues from insurance funds and direct patient charges. The hospital budget is shown to enable a calculation of necessary revenues from a hypothetical insurance for hospital care. Given the present subsidies and the present level of services the hospital would need a minimum of 40,000 subscribers. Including anticipated administrative costs for the insurance plan and an inflation rate of 60%, a premium of 200 Z per person would seem necessary.

4. Utilization and Access

Rates of utilization of ambulatory care services at the Bokoro Health Center for the first six months in 1989 are shown in Table B.5. Differences in utilization between subscribers and the uninsured are striking. Based on the six months average, subscribers consult five times as often as non-subscribers with a new disease. Rates of treatment with antibiotics, antibiotic prescriptions, and injections show a similar pattern. Subscribers use two to nine times as many services. Their higher utilization rate is not necessarily due to insurance, however. Every plan subscriber is employed and all medical expenses for the family are covered anyway.

In the household survey, mentioned earlier, respondents were asked about their preferences regarding health insurance. A single annual payment of 100 Z to 200 Z per family member seemed affordable. The preferred times to pay were January, July, and August. The survey of members showed that they were interested in broader coverage that would include hospital care as well as ambulatory care (see Table B.6). While hospitalized patients naturally preferred hospital care, a majority of healthy villagers preferred ambulatory care.

A major handicap to wider enrollment is probably the lack of an incentive for the health personnel to attract new subscribers. The staff of health centers are evaluated and rewarded with an incentive payment for an overall high utilization rate, correct operational procedures and having more revenues than expenses. No incentive is provided for new plan subscribers. These would merely add to the work load but not necessarily increase the profit.

Health zone administrators complained that clinical personnel did not believe in the value of the insurance scheme. Thus, their publicity and educational efforts were minimal or even negative. No clear policy had been formulated regarding the best enrollment period.

The authors felt that if the premium were lower, substantially more subscribers would enroll and would dilute the present high risk membership with more low risk subscribers. The health committee members and health center staff with whom they spoke, however, could not follow this argument.

The study team felt that respected community institutions could assist in publicizing the idea of a prepayment plan. In Bokoro, the Programme des Actions Complementaires (PAC) might serve this role. It was created to promote social services, agricultural and fishing activities and is associated with the BCZS. Also, two religious missions (Catholic and Baptist) have contributed greatly to the development of the Bokoro area over the past 70 years. They enjoy great confidence of the population which could be an important factor for a successful

Table B.5 Health Care Utilization by Plan Subscribers and Non-subscribers at Bokoro Health Center *

1989	Jan	Feb	Mar	Apr	May	Jun	AVERAGE	RATIO#	
Population size									
Non-subscribers	3817	3797	3794	3819	3799	2986	3669		
Subscribers	156	176	179	174	174	176	173		
Total	3973	3973	3973	3993	3973	3162	3841		
	ANNUAL UTILIZATION RATE+								
New cases									
Non-subscribers	0.45	0.38	0.46	0.48	0.46	0.59	0.47		
Subscribers	4.59	1.69	1.86	2.25	1.79	2.30	2.36	5.0	
Antibiotic prescr.									
Non-subscribers	0.03	0.05	0.05	0.08	0.07	0.06	0.06		
Subscribers	0.49	0.31	0.27	0.31	0.49	0.72	0.44	7.3	
Injections									
Non-subscribers	0.14	0.08	0.15	0.32	0.33	0.19	0.20		
Subscribers	1.98	0.92	0.27	1.24	1.51	3.11	1.72	8.6	
	AVERAGE RATE PER NEW CASE								
Antibiotic Rx									
Non-subscribers	0.06	0.06	0.06	0.09	0.09	0.10	0.07		
Subscribers	0.11	0.18	0.14	0.14	0.20	0.31	0.18	2.6	
Injections									
Non-subscribers	0.32	0.21	0.31	0.66	0.70	0.33	0.42		
Subscribers	0.43	0.55	0.62	0.55	0.84	1.35	0.73	1.7	

*) Data from the "BORDEREAU DE CONTROLE DE CAISSE" part A, Number 14 - 16 and 19.

) Ratio of average for subscribers divided by average for non-subscribers.

+) Projected annual utilization rates, calculated as:
 number of services in month * 12 / population size.

insurance plan.

Table B.6 Bokoro Survey: Questions Asked Separately of Insured Respondents (N=21)

QUESTIONS	Respondents
Can you pay 100 Zaires for an insurance scheme which will take care of all of your family? When?	21
Now	52%
In a week	19%
In a month	10%
Never	19%
Can you pay 200 Zaires for an insurance scheme which will take care of all of your family?	21
Now	38%
In one day	5%
In a week	10%
In a month	29%
Never or no response	19%

When will you like to pay this amount?		17
Any time	41%	
Dry season (3rd quarter)	41%	
After harvest (end of 3rd, begin. 4 3rd, 4th or 1st quarter)	24%	
	18%	
Why will you like to pay at that time?		17
Employer covered	24%	
Cash available	18%	
Selling the harvest	12%	
Selling fish	29%	
Selling coffee	18%	
Selling products	12%	
Selling fish and coffee	6%	
Selling coffee and harvest	6%	
If this insurance would cover either the cost of care at the hospital or at the hospital, which would you prefer?		21
Health center	33%	
Hospital	57%	
I don't know	10%	
Were you sick last month and sought care?		21
Yes, sought care at health center	14%	
Yes, sought care at hospital	19%	
No answer or did not sought care	67%	

C. CASE STUDY OF ST. ALPHONSE

The St. Alphonse Health Center is the first and only operating health facility in the urban health zone of Matete, Kinshasa. Since the Matete Health Zone is not yet functional, St. Alphonse is supervised by the Kisenso Urban Health Zone. The Kisenso zone receives technical assistance, capital and operating subsidies from the Belgian-sponsored project "Sante Pour Tous Kinshasa" (SPTK). St. Alphonse Health Center began operation in 1987, largely through community action channeled through the Development Commission of the St. Alphonse Parish. The health center received investment subsidies from many donors, including the OXFAM Project (Great Britain), the Canadian and German Embassies, and SPTK. At present, the health center is self-financing with a large profit margin.

1. Terms of the Insurance Plan

The St. Alphonse insurance plan covers ambulatory curative care episodes of illness at the St. Alphonse Health Center. Plan members are entitled to pay a fixed fee for each episode of illness up to five days, rather than paying for each day of treatment as non-members are required to do.

Table C.1 lists the prices according to payor category (member vs. non-member). An episode of illness includes up to five consultations and all basic drugs required. Per visit fees also include consultation and basic drugs, but for one day of care only. For both payor categories, laboratory exams are charged separately. Drugs which are not usually kept in stock at the health center level (for example, quinine for chloroquine-resistant malaria) are charged separately as well.

Table C.1 Prices, St. Alphonse Health Center Kinshasa, 1987-1989

ZAIRES							
DATE	MEMBER PREMIUM	ADULT			CHILD		
		MEMBER EPISODE	NON-MEMB FIRST VISIT	NON-MEMB OTHER VISITS	MEMBER EPISODE	NON-MEMB FIRST VISIT	NON-MEMB OTHER VISITS
JAN. 87	50	100	110	50	80	(*)	(*)
JAN. 88	150	150	150	50	100	100	50
JAN. 89	150	300	200	50	300	200	50
MAR. 89	300	500	400	150	500	400	150

(*) No price was established for non-member children the first year. In 1989, differential pricing for adult/children was abandoned in favor of one price for all age groups.

The health center also offers prenatal consultations and well-baby care; however these services are not covered by the insurance plan. Deliveries are referred to other facilities, although the health center would like to open a maternity service in the future.

The population eligible to join the insurance plan includes the approximately 10,000 residents of the health center's catchment area. No census has been carried out, nor is one planned in the near future. Enrollment in the insurance plan is voluntary. Since the health center opened in February 1987, 1,689 residents have joined the insurance plan, although only about 620 (6.2%) are currently covered under the plan.

According to a member of the St. Alphonse Development Commission, many residents in the catchment area are salaried workers with employer health coverage. St. Alphonse health center does not bill employers for care, so there is no record of the number of patients who may not have joined the insurance plan because they are already covered by their employer.

The insurance premium for 1989 was set in March, at 300 Z (\$0.85) per person. The 1988 premium price was 150 Z (\$0.80), increased from the initial price of 50 Z (\$0.39) in 1987. In early planning meetings, community members expressed a preference for family enrollment, but the health center staff and development commission members felt that without a census such a system was open to abuse. All individuals pay the same premium.

As discussed above, the insurance plan has a co-payment of 500 Z (\$1.41) per episode of illness. The insurance plan has not established any deductibles. In 1987 and 1988, the co-payment differed according to age, with a lower co-payment paid by children. All SPTK-supported health zones abandoned this practice in 1989, in favor of a single co-payment. Table C.1 shows co-payments from past periods. The episode of illness covered is restricted to five days, and does not cover expensive, special drugs.

The health center treats patients who are not members of the insurance plan; in fact, almost 85% of new cases seen at the health center in 1988 were in non-members (see Table C.2 for utilization figures). Non-members do not qualify for the episode of illness price, but are required to pay for each day of care. Currently non-members pay 400 Z (\$1.13) for the first day of care, and 150 Z (\$0.42) for each subsequent day of care. The average number of visits per episode of illness for non-members thus far in 1989 was 3.6, or an average cost per episode of 790 Z (\$2.23) [(1 visit x 400 Z) + (2.6 visits x 150 Z)]. As with members, while consultations and basic drugs are included in the price, laboratory exams and special drugs are charged separately.

Table C.2 Utilization, St. Alphonse Health Center Kinshasa, 1988-1989

	1988			1989		
	number	% total util.	% new cases	number (8 mo.) (*)	% total util.	% new cases
Members episodes	1,413	5.2%	13.7%	434	3.0%	10.3%
Non-members first visit	8,898	32.6%	86.3%	3,788	26.4%	89.7%
Non-members other visits(+)	16,477	60.3%	---	9,710	67.8%	---
CPM new cases enrolled	376	1.4%	---	302	2.1%	---
CPS new cases enrolled	168	0.6%	---	98	0.7%	---
TOTAL:	27,332	100.0%	100.0%	14,332	100.0%	100.0%
Visits per episode (non-members)	2.9			3.6		

- * Jan. to Sept., excluding April (no data avail. for April)
- + Follow-up visits are calculated by dividing total receipts for follow-up visits by price per follow-up visit.

2. Organization and Management

The insurance plan began with the opening of the health center, in February 1987. The Development Commission of St. Alphonse parish was instrumental in creating the health center and mounting an awareness campaign among the population in the health center's catchment area. The Development Commission has been in existence for over 10 years, and manages a diverse range of activities in addition to the health center, including a food cooperative, tie-dying cooperative, and an adult literacy program.

The health insurance plan-awareness campaign took a full year and involved considerable effort. Four members of the Development Commission worked full-time for two months, conducting door-to-door visits to explain the purpose of the insurance plan. They were assisted by six students from the National Art Institute who were enrolled in the Institute's program in "animation culturelle." The students worked full-time for three months.

In spite of this concentrated effort, most residents were not convinced about the benefits of joining an insurance plan. The plan began with only 50 members. The St. Alphonse insurance plan is a direct insurance plan, offered by the provider, which is both the center and the zone. Accounting for the insurance plan is mingled with that of the health center. The price of the premium is set by SPTK/health zone central office staff. It was not possible to meet with these people, so little is known about how the premium price is established.

Individuals may join the plan at any time during the year, with coverage starting immediately and lasting one year from the time of enrollment. The only restriction is that people cannot join the plan while they are sick. Enrollees receive a membership card which specifies name, age, sex, membership number, date joined, and date of expiration. The health center nurse also records information about each enrollee in a membership register. This register records membership number, date (without year), name, address, sex, and age. Membership numbers are sequential until 1,000, then begin again with number 1. When a person wishes to renew his or her membership, a new card is issued (with a new membership number) and the old card is destroyed. Therefore it is difficult to analyze renewal rates.

There are few recurrent costs associated with administration of the insurance plan. Since the plan began, no new registers or membership cards have been purchased. The membership verification process is very simple (the receptionist compares the membership card to the person's national ID card), and accounting is combined with that of the health center, so personnel expense for record-keeping is negligible. The current cost of printing a membership card is about 20 Z (\$0.06), so the card expense for the 620 current members is approximately 12,400 Z (\$35).

To identify plan members, as mentioned above, the membership card is compared to national ID card. Cards are not checked against the membership register.

Premiums are deposited in an account at the parish, as are all receipts of the health center. A member of the Development Commission works at the health center as an administrative assistant, and prepares a monthly financial report according to the SPTK model. The report shows cash flows as well as an income statement. Premiums are recorded as a cash receipt, but not as income. No interest is earned on premiums.

3. Resource Mobilization: Financial Situation of Plan and Center

Table C.3 presents the combined financial situation of the insurance plan and the health center for 1988 and 1989.

The data show that the health center is extremely profitable, with a margin of almost 65% in 1988, and 52% in 1989. Insurance premiums and member co-payments do not contribute a

Table C.3 Financial Situation, St. Alphonse 1988-1989
Nominal Zaires

	1988		1989 (*)	
		% of Total Exp.		% of Total Exp.
OPERATING REVENUE				
Insurance premiums	88,090	4.2%	77,625	2.2%
Member episodes	279,300	13.3%	303,225	8.7%
Non-members first visit	1,158,950	55.1%	2,017,080	57.6%
Non-members other visits	823,860	39.2%	1,470,525	42.0%
CPM & CPS	110,600	5.3%	469,350	13.4%
Sale of drugs (**)	544,080	25.9%	171,675	4.9%
Laboratory (+)	265,960	12.6%	579,150	16.5%
Sale of foodstuffs	163,580	7.8%	195,150	5.6%
Other	33,710	1.6%	33,000	0.9%
TOTAL:	3,468,130	164.9%	5,316,780	151.7%
OPERATING EXPENSES				
Personnel	832,426	39.6%	1,962,990	56.0%
Drugs and med. supplies	977,856	46.5%	1,215,200	34.7%
Supplies, util., maint.	177,121	8.4%	322,043	9.2%
Purchase foodstuffs	34,475	1.6%	4,500	0.1%
Other	81,785	3.9%	0	0.0%
TOTAL:	2,103,663	100.0%	3,504,732	100.0%
BALANCE:	1,364,467	64.9%	1,812,048	51.7%

* 1989 figures extrapolated based on 8 months of actual data

** After Nov. 1988 revenue from sales of drugs drops sharply.
This may indicate a change in payment system
(more drugs included per episode)

+ Laboratory receipts recorded only for May through Dec. in 1988
Exchange rates and inflation rates for each year are found in Annex III

large amount to the total revenue of the health center in either year Examining revenue as a percentage of total expenses, premiums covered 4.2% of expenses in 1988, and only 2.2% in 1989. Member co-payments covered another 13.3% of expenses in 1988 (8.7% in 1989). In both years, nearly all of health center expenses were covered by consultation fees paid by non-members. Other services (sale of drugs, laboratory, preventive care, etc.) contributed to the positive margin.

4. Utilization

Table C.2 showed member and non-member utilization for curative care cases, and combined utilization for preventive care. Member episodes accounted for 13.7% of all new cases of illness in 1988. This share dropped to 10.3% in 1989.

Unfortunately, follow-up visits for members are not recorded by the health center, so it is not possible to evaluate from its utilization data whether payment by episode encourages members to come back to the health center more frequently than non-members. For non-members, from 1988 to 1989 the number of visits per episode of illness increased dramatically from 2.9 visits per episode to 3.6. Changes in the relative price of follow-up visits compared to the initial visit may explain some of this difference (the relative price of follow-up visits

dropped in the first two months of 1989, then increased again in March). It is also possible that the diligence with which records are kept at the health center improved somewhat in 1989.

To better understand the characteristics of insured and uninsured patients, a random sample of consecutive ambulatory patients was surveyed in October 1989. The questionnaire was written in French and posed in Lingala by bilingual Zairois interviewers (see Annex V). Table C.4 presents the characteristics of respondents by insurance status for this plan and the CASOP, the other Kinshasa case study, described below. Table V.2 in Annex V documents the decision rules for resolving missing and ambiguous data on membership status, which arose in 9% of responses. At the St. Alphonse center, 79 patients responded of whom 13% were insured. At the CASOP, 126 patients responded of whom 51% were insured.

Table C.4 Kinshasa Survey: Population Characteristics

Characteristic	Insured (N=74)	Uninsured (N=131)	Valid Responses
Center:			
St. Alphonse	14%	53%	205
CASOP	86%	47%	
Gender:			
Female	44%	63%	205
Male	55%	34%	
Age group:			
0-14	10%	11%	205
15-44	79%	76%	
45 and above	11%	13%	
Average + S.D.	29 +14	27 +13	
Receives a salary each month	42%	33%	
Occupation:			
Professional, "cadre"	7%	10%	205
Skilled worker	13%	8%	
Student	24%	16%	
Unskilled worker	24%	16%	
Farmer	1%	2%	
Other	11%	13%	
None	20%	35%	
Employer:			
State	21%	6%	205
Para-statal enterprise	3%	2%	
Private enterprise, for profit	11%	14%	
Private enterprise, not for profit	6%	3%	
Independent	1%	7%	
Household	1%	2%	
Other	0%	1%	
None or no response	56%	66%	
Company pays for medical care:			
In full	35%	19%	205
Some	6%	3%	
None	3%	13%	
Not employed	56%	66%	
Is another family member employed and covered for medical expenses?			
	44%	27%	202

As time for pretesting the survey and training the interviewers was limited to a few hours, the survey should be viewed as an indication of characteristics rather than a precise scientific inquiry. The results show that both insured and uninsured patients are young adults, of whom about a third are employed. Insured patients tend to be slightly more likely to be employed and have better jobs than uninsured, but differences are small.

Table C.5, based on this survey, shows actual payments reported by insured and uninsured patients for their current episode. The results show confirm that uninsured patients do pay more than insured patients, but both groups do pay something. These data from an independent source (the patients) confirm that actual charges are consistent with the official price list.

Table C.5 Kinshasa Survey: Illness and Expenditures.

Characteristic	Insured (N=74)		Uninsured (N=131)	
	Mean	SD	Mean	SD
Duration of present illness episode in days	53	225	27	109
First visit for this episode.	35%		39%	
Number of previous visits for current episode	2.0	2.6	1.6	4.2
Payment for current visit in Zaires	222	521	511	856
Total payment for current visit including:				
Lab., x-ray and consultation				
\$0.00 - \$0.99 (0 - 430 Zaires).	90%		76%	
\$1.00 - \$2.00 (430 - 860 Zaires).	4%		7%	
\$2.01 - \$5.00 (861 - 2150 Zaires).	4%		10%	
More than \$ 5 (More than 2150 Zaires)	1%		7%	
MEAN	0.5		1.2	
Medicine included in total payment:				
All included	57%		56%	
Some included	42%		43%	
None included	1%		1%	
Total payment for all previous visits for current episode in Zaires(mean,SD)	115	309	308	1,106
Expect any follow up for this episode	85%		85%	

Table C.5 also compares utilization data of insured and non-insured respondents. The results demonstrate some moral hazard or adverse selection, in that insured respondents had more previous visits. Table C.6 further describes the attitudes of the two groups. Insured persons tend to be slightly better off than uninsured; for example, the time they would require to mobilize 50,000 Z (\$ 125) was less than for uninsured respondents. Table C.7 presents questions asked separately of members and non-members. It is striking that 43% of non-

members had not heard about the plans before. Thus, posters and displays at the plans' clinics about the insurance system might be an effective and inexpensive way of increasing enrollment.

Table C.6 Kinshasa Survey: Population, Attitudes and Opinion

Characteristic	Insured (N=74)	Uninsured (N=131)	Valid Responses
Would you be able to pay 10,000 Zaires for an illness requiring minor surgery in a hospital?			205
Could pay today	35%	34%	
Could pay some other day*	58%	55%	
Could never pay or no response	7%	11%	
* After how many days? (Average)	11	12	
Would you be able to pay 50,000 Zaires for an illness requiring minor surgery in a hospital?			205
Could pay today	13%	11%	
Could pay some other day*	75%	70%	
Could never pay or no response	13%	20%	
* After how many days? (Average)	30	40	
Where would you get the 50,000 Zaires (see question above)?			205
Cash, from household	38%	22%	
Saving club or association	11%	6%	
By selling household items or livestock	5%	10%	
Taking a loan from somebody outside the household.	23%	23%	
Donation from somebody outside the household	0%	1%	
Contribution of family members	9%	19%	
Other	3%	4%	
No response	11%	15%	
Would you suggest this insurance plan to other family members?	85%	85%	135*
What do you think of the organization of health insurance schemes?			205
Favourable	96%	92%	
Not favourable	1%	3%	
Do not know or no response	3%	5%	

* Applicable only to St. Alphonse. In CASOP, families had to join.

Table C.7 Kinshasa Survey: Questions Asked Separately of Insured and Uninsured Respondents

QUESTIONS :	%
What are the inconveniences or problems of your membership?	
Too expensive	6.9%
Benefits not worth the fees I pay	1.4%
It is necessary to come for follow up visits.	26.4%
Other	15.3%
Nothing	47.2%

Why are you not member of the insurance plan?

Too expensive	15.9%
I have no money	7.9%
Why should I pay before I am sick?	4.0%
Never heard about this before	42.9%
I am not often sick	0.8%
I did not know at the time of enrollment	10.3%
I do not trust this insurance	5.6%
I can pay for each consultation	9.5%
Other	3.2%
.....	

As in Bwamanda, it was difficult to characterize the insurance status of about 18 respondents (approximately 9% of the respondents). As shown in Appendix Table IV.2, however, it was possible to impute the membership status based on responses to other variables.

D. CASE STUDY OF CASOP

The Caisse de Solidarite Ouvriere et Paysanne (CASOP) is sponsored by the Zairian National Workers Union (UNTZA). The health insurance plan is only one of the many social services provided by the CASOP, which operates nationwide. The research team studied how the insurance plan works by looking at the CASOP's only polyclinic in Kinshasa, which serves all CASOP members in the city.

1. Terms of the Insurance Plan

The CASOP plan covers ambulatory curative cases of illness treated at the CASOP polyclinic in Kinshasa. Plan members are entitled to pay a lower fee than non-members for each day of care, which includes a nurse consultation and some basic drugs. Families of members are entitled to the same benefits as members, for no additional premiums.

Table D.1 contains a list of prices according to payor category. Theoretically, there are four categories: individual member, individual non-member, company member, company non-member; but there are currently no companies which are affiliated with CASOP's clinic that are not members, so in effect there are three active payor categories. Individual members are insured and pay least. Individual non-members are uninsured individuals. Company members are insured and benefit from having their companies billed the fees for their services. For all payor categories, laboratory exams and x-rays are charged separately. Drugs which are not usually kept in stock at the health center level are charged separately as well.

Table D.1 Price List
CASOP Polyclinic, 1989

SERVICE	MEMBER	NON-MEMBER	COMPANY MEMBER
Consultation with:			
Medical Assistant	250	350	400
General Physician	350	500	600
Specialized Physician*	450	700	800
IV with drug	1300	1550	1600
Laboratory: Blood	100	200	200
Laboratory: Stools	100	200	150
Normal delivery	7000	10000	12000
Xray (chest, adult)	1400	1500	1700

* This is the type of consultation chosen by most patients according to the clinic administration.

The clinic also provides prenatal care, vaccinations, nutrition demonstrations, and minor surgery, all of which are not covered under the plan.

Nationally, the CASOP has more than 42,000 contributing members. When family members are included, the total reaches one quarter million. In Kinshasa, the total number of members (including families) was 6,691 in September 1989. Since membership is open to the entire population, this represents a tiny fraction (0.2%) of Kinshasa's total population of 3 million.

While all CASOP members and their families may use the polyclinic, Table D.2 shows that UNTZA staff and families account for a large fraction of utilization (34 to 47% of new cases in 1988 to 89). UNTZA is a "company member", and is billed for the "co-payments" of employees treated.

Table D.2 Utilization, CASOP Polyclinic, Kinshasa, 1988-1989

PAYOR CATEGORY	TYPE OF VISIT	1988					1989				
		number (*)	% all new cases	% all follow cases	% all total cases	Visit per epis.	number (9 mo.) (**)	% total util	% new cases	% follow cases	Visit per epis.
UNTZA staff	New	10,548	47.5%	---	---		3,628	33.7%	---	---	
	Follow-up	16,269	---	55.8%	---		8,987	---	48.8%	---	
	Total	26,817	---	---	52.2%	2.5	12,615	---	---	43.2%	3.5
Indiv. members	New	5,325	24.0%	---	---		2,456	22.8%	---	---	
	Follow-up	6,793	---	23.3%	---		3,591	---	19.5%	---	
	Total	12,118	---	---	23.6%	2.3	6,047	---	---	20.7%	2.5
Company billed mem. & non	New	4,079	18.4%	---	---		2,988	27.7%	---	---	
	Follow-up	4,434	---	15.2%	---		4,102	---	22.3%	---	
	Total	8,513	---	---	16.6%	2.1	7,090	---	---	24.3%	2.4
Non- members	New	2,264	10.2%	---	---		1,707	15.8%	---	---	
	Follow-up	1,648	---	5.7%	---		1,751	---	9.5%	---	
	Total	3,912	---	---	7.6%	1.7	3,458	---	---	11.8%	2.0
TOTAL	New	22,216	100.0%	---	---		10,779	100.0%	---	---	
ALL PAYORS	Follow-up	29,144	---	100.0%	---		18,431	---	100.0%	---	
	TOTAL	51,360	---	---	100.0%	2.3	29,210	---	---	100.0%	2.7

** Jan. to Sept., excluding April (no data avail. for April)

+ Follow-up visits are calculated by dividing total receipts by price per follow-up visit.

The monthly contribution to CASOP is 100 Z (\$0.28) for the average worker. Honorary members (people with large incomes--self-identified) pay 200 Z (\$0.56) per month, while farmers ("paysans") are charged 50 Z (\$0.14). In fact, the latter tariff is not used, since most people are able to afford 100 Z in the urban area of Kinshasa.

Upon joining CASOP, members must pay a one-time fee for the membership booklet (100 Z), and six months of contributions in advance, or a total of 700 Z (\$1.98). People who fall in arrears of their monthly dues are given three months to pay up the full amount. If they cannot pay back dues by the end of three months, their membership is suspended. Companies (e.g. UNTZA) which join the plan for their employees pay for the membership booklets, and use payroll deduction to collect the monthly contribution from the employees.

Individual members are subject to a co-payment. Since the end of 1987, their co-payment has been 450 Z (\$1.27) for one day of care. (See Table D.1) A price change is planned very soon. Companies are billed at the individual member's "co-payment" price for the services provided to their employees. Laboratory, x-ray, minor surgery and some drugs are charged separately. There are no caps on spending.

The insurance plan is voluntary for individual members. Companies may join voluntarily, but once they have joined they must enroll all their employees. The employees are then required to make the monthly contributions.

The health center treats patients who are not members of the insurance plan. Table D.2 showed that non-members accounted for between 9 to 10% of new cases in 1988 and 1989. A similar payment system applies, only non-members are charged higher prices. The average number of visits per episode of illness for non-members is lower than the overall average (1.7 compared to 2.3 in 1988), possibly showing that higher prices discourage people from seeking follow-up treatment.

2. Organization and Management

CASOP began in 1968, as a Christian mutual. When management changed into the hands of the Zairian Workers' Union, the name of the association changed. CASOP existed a long time before the polyclinic was added. By making a monthly contribution to CASOP, members receive benefits in the case of marriage, birth, hospitalization, need for social assistance, unemployment or a death in the family. The level of benefits is set in advance, usually on an annual basis. For example, a member who contributes 200 Z (\$0.56) per month will receive a hospitalization benefit of 50 Z (\$0.14) per hospital day. Family members are entitled to 25 Z (\$0.07) per day.

The member contributions are collected and managed by committees at the local level ("comite primaire"). These local funds are divided into different pools, according to standard formula. For example, 10% of funds are reserved for hospitalization benefits, 35% for death benefits, 3% for marriages. The local committees must contribute 17% of the funds to the polyclinic, and 15% to administration at the regional and national levels.

When the polyclinic first opened, CASOP's idea was that membership contributions would enable the clinic to provide care at no price to members. This soon proved impossible, because utilization was high and the services were too expensive. Health services received only a small portion of the premium. As CASOP officials felt that a higher premium would not be affordable, they introduced co-payments instead.

Polyclinic staff are all UNTZA personnel, and are paid through the UNTZA personnel office and not through the polyclinic. This situation is changing, however; a decision was made in May 1989 to make the polyclinic more independent from UNTZA.

CASOP is a direct insurance plan, offered by the provider. This status may change, however, as the policy of making the polyclinic "more independent" evolves. Accounting for the insurance plan is mingled with that of the clinic.

The monthly contribution amount is set to take into account the costs of the benefits covered (hospitalizations, deaths) based on benefits paid out in the past and the cost of living in Kinshasa. It isn't clear how the percentage of the total fund allocated to the polyclinic (30% in 1988, 17% in 1989) is set.

Individuals may join the plan at any time during the year (even when they are sick), with coverage starting immediately and lasting until the member stops paying dues. Enrollees receive a membership booklet which specifies name, age, membership number, date joined, profession and marital status. A photo of the member is included as well. Similar information is filled in for the spouse; for children, name and age are recorded. There are many pages in the booklet, where stamps are affixed to record payment of monthly contributions.

It is difficult to estimate the recurrent cost of administering the insurance plan, since it is part of a larger social insurance program with many administrative levels. The membership

verification process is not time-consuming (the receptionist checks the membership card to be sure it is up to date, or notes the employee ID number in the case of company memberships). It was difficult to assess the accounting procedures followed for billing company members or monitoring the insurance plan.

Premiums are paid to local committees, who forward a percentage of the premium payments to the polyclinic. The amount received by the polyclinic in 1988 (fiscal year ending October 1989) was approximately 403,980 Z (\$1,140).

3. Resource Mobilization: Financial Situation of Plan and Clinic

Despite repeated attempts to obtain financial data about the receipts and expenses of the polyclinic, the team failed to obtain any financial reports or summaries. The accounting systems of CASOP and the polyclinic are in extreme disorder.

4. Utilization

Table D.2 shows member and non-member utilization for curative care cases. Individual members accounted for 23 to 24% of all new cases of illness in 1988 and 1989. UNTZA staff, who benefit from "company membership", accounted for 48% of new cases in 1988, but only 34% thus far in 1989. Non-members accounted for only 10% of all new cases treated in 1988, however the percentage of non-members seen has increased to 16% in 1989.

The number of visits per case for non-members is lower than the average (2.0 compared to 2.7 in 1989). The highest number of visits per episode is found in the UNTZA staff group, with 3.5 visits per episode. The greater number of visits among insured persons suggests that moral hazard or adverse selection operates to some degree.

E. OTHER INSURANCE PLANS

Some descriptive information was obtained on four other insurance plans. The findings are summarized in Table E.1 and described below.

Table E.1 Characteristics of Other Insurance Plans

	REMEF	MASISI	UPM	SNHR
Region	Kinshasa	Kivu	National	Rutshuru HZ (Shaba?)
Rural/Urban	Urban	Rural	Mainly Urban	Rural
Management	Zairian PVO	Health Zone	Zairian PVO	SNHR
Year Started	1986	1988	1986	?
Eligible Population	7000	214,240	8 million	SNHR members & families
Number of Members	700 to 1000	?	few	20 families
Services Covered	All hosp. & amb. incl. referrals	Hospital services	Hospital & ambulatory	Hospital services
Premium	500/mo. adult 250/mo. child Discounted rates for poor & farmers	150 Z/ year	?	500Z/mo.

1. Reseau Medecins de Familles (REMEF)

REMEF is a direct insurance plan which functions like a staff health maintenance organization (HMO). Started in February 1986 by a Zairian doctor who had studied family medicine in the United States, the REMEF clinic is the base for medical staff who provide comprehensive health services and outreach activities to the families in the nearby communities. The REMEF has benefitted from some Canadian assistance and sponsors a private nursing school in addition to the polyclinic. The focus of the REMEF is maternal and child health services.

1.1 Terms of the Insurance Plan

The REMEF insurance plan covers all ambulatory and inpatient services, including drugs and laboratory, surgical interventions, and preventive care services. In May 1989 the polyclinic moved to its current location, where five beds are available for hospitalizations. There is an additional maternity bed as well. If a patient requires referral to a secondary hospital or medical specialist, the cost of the referral and all subsequent services is assumed by the plan.

While no census exists, the size of the community served is assumed to be about 7,000, of whom

between 700 to 1,000 (10 to 14%) are members who pay their monthly premiums regularly. Since 1986, the REMEF has had a total of about 2,000 members. Currently small local businesses who enroll employees and their dependents account for 557 members, or between 55 to 80% of total membership.

In 1989, the adult monthly membership premium was set at 500 Z (\$1.41), or 6,000 Z (\$16.92) per person per year. Students and children are charged a lower rate of 250 Z (\$0.70) per month, or 3,000 Z (\$8.47) per person per year. Farmers ("paysan") are also charged the lower rate of 250 Z. A full-time public relations worker assumes the task of verifying membership category, either by calling schools or making home visits. Lower income families may be charged different rates, depending on the decision of the REMEF administrator, again pending investigation by the public relations worker. Company membership rates are the same as individual rates.

The plan has no limits on spending or duration of episodes of illness. There are no deductibles or co-payments. Membership is voluntary (except in the case of company employees) and whole families are not required to join if one member joins. The plan covers both treatment at the facility as well as the cost of referrals elsewhere.

Non-insured residents may be treated at the facility. They are charged 500 Z (\$1.41) for each consultation, with drugs and laboratory payable separately. It is rare that non-members come to the facility to be treated, however.

1.2 Resource Mobilization

Record-keeping is not well-developed at the REMEF polyclinic, so it is difficult to analyze the financial situation of the plan. No utilization registers or financial account books were available for review, and procedures for recording and verifying membership seem lax.

To gain some estimate of the size of operations, salary information was obtained for polyclinic employees other than doctors. Monthly salary expense excluding REMEF's two doctors (one of whom is the Director) is approximately 95,000 Z (\$268). Assuming a salary of 150,000 Z per month for each doctor (the high-end of the Bwamanda pay range), total personnel expense is about 395,000 Z (\$1,115) per month, or 4.7 million Z (\$13,380) per year. Since personnel expense probably accounts for 60% of total expenses (it was 56% at St. Alphonse), REMEF's total annual expenses for polyclinic operations may be 8 million Z or more (\$22,590).

Revenue from premiums cannot be estimated accurately, since the number of individuals falling into each membership category is unknown. But even if all members were adult and the maximum membership figure is assumed (1,000), revenue only comes to 6 million Z per year. This indicates that REMEF may be receiving external operating subsidies from some source, or that the estimates of doctors' salaries and/or total membership are wrong.

1.3 Utilization

Utilization figures were available for two months, August and September 1989. These figures show that utilization is much lower than either CASOP or St. Alphonse. REMEF treated an average of 152 new cases per month in Aug. to Sept. 1989, whereas the average number of new cases treated each month at St. Alphonse is about 528, and at CASOP the number is close to 1,200. REMEF's utilization data are shown in Table E.2.

⁹ The average family size of these members is small (3.2) which may be due to the large number of single persons employed in the hotel industry. Two small hotels are among the businesses which have contracted with REMEF to provide health care to employees.

Table E.2 Utilization Data (all patients) at REMEF

	Aug. 89	Sept. 89
New Cases	138	165
Follow-up Visits	147	162
Hospitalizations	19	3
Deliveries	3	4
Transfers	0	1
Growth Monitoring Visits	35	26
Doses of Vaccines Administered	128	141

REMEF's staff is dedicated and quality of care seems very high. The facility was extremely clean, bright, well-supplied and well-equipped. Technical assistance in organization of management systems and in management training would be well-placed, to assure continued evaluation and success of this health insurance experiment. The PASS may also wish to conduct a more detailed analysis of the costs associated with the plan, especially the plan's policy of paying for the treatment costs of all cases referred to other providers.

2. Masisi Health Zone Insurance Plan

The rural health zone of Masisi is located in the Kivu Region, covering a population of approximately 214,240. Only recently started, the health zone benefits from the assistance of a Belgian Cooperation Zonal Chief Medical Officer who has had previous experience starting-up the zone of Kirotshe, in the same region. Masisi has a 142-bed reference hospital and 19 health centers or health posts. To increase economic access to health services the zone began offering a health insurance plan in 1988. The Medicin Chef de Zone (MCZ) delivered a presentation about the insurance plan at the SANRU national conference in 1989. Since the research team for this study did not have time to visit Masisi, this section is based on the MCZ's presentation at the SANRU conference, as well as conversations with staff from the Belgian Cooperation and SANRU.

2.1 Terms of the Insurance Plan

The plan covers all hospital services including deliveries and chronic care. The premium charged in 1989 was 150 Z (\$0.42) per person per year, calculated on an actuarial basis assuming a hospitalization rate of 4.9%, an average cost per hospitalization of 2,000 Z (about \$11 in 1988), and a 50% margin for inflation. Premiums are invested in the purchase of drugs for the central pharmacy. The hospital bills the plan for services rendered to members. Members are identified by a membership card which is compared to a membership register kept at the hospital.

Enrollment of members takes place at the health center and community level, with the assistance of village health workers and health center nurses. Family enrollment was not required in the past, but is now seen as an important ingredient to financial sustainability, as discussed below.

2.2 Utilization and Success of the Plan

Enrollment figures are unknown, but the experience of the first year showed that enrollment was low and the plan was in deficit after only six months of operation. The MCZ attributes

the early failure of the plan to the problem of adverse selection. His solution was to try to enroll greater numbers of the population, and to require that whole families join if one member within one family joins. The MCZ also observed that it was very difficult to enroll residents who lived far away from the hospital. More than price, distance seemed to have a much greater effect on access to hospital care. According to the manager of the SANRU project (which provides assistance to Masisi), an additional constraint may be the lack of village structure in the area, which makes community organizing and the conduct of awareness campaigns difficult.

The Masisi experiment is ongoing. The study team encourages the Government of Zaire to monitor this experiment and conduct an evaluation of its success after two full years of operation.

3. Mutuelle "Union et Prevoyance" (UPM)

Created in 1986, the UPM is a non-profit association sponsored by several workers unions and medical providers, including UNTZA, the Confederation Internationale des Syndicats Libres (CISL), the Confederation Mondiale du Travail (CMT), the Clinique Internationale de Kinshasa, Mecial Service International, and the Institut National de Securite Sociale (in 1988). The UPM is currently operational, but on a very limited basis. The plan is proposed to be extended nationally, and is indirect (i.e. the UPM is not the health care provider). Its objective is to offer both ambulatory and hospitalization insurance to the employed population through contracts with health centers and hospitals.

4. SNHR Employees in Rutshuru

According to a USAID official, 20 employees of Service National d'Hydrolique Rural (SNHR) in the rural station of Rutshuru (south-eastern Zaire) started a small cooperative, to assure financing for health care needs of the group and family members. In principle, the SNHR pays for health care services for the employees and their dependents; however, in practice hospital bills were left unpaid. Finally, the hospital began refusing to treat the SNHR employees unless they paid cash in advance. The employees decided to organize themselves and create an insurance fund; they began by contributing 500 Z (\$1.41) per employee per month to the fund. Decisions to spend the insurance money are made by the whole group, on a case-by-case basis. According to the USAID official, the experiment seems to be working well.

The team suggests that future research regarding insurance should try to obtain more information about the success of this experiment.

F. INFORMAL ASSOCIATIONS

To explore a possible base for insurance systems in existing informal savings associations, a Zairian sociologist conducted interviews with 50 members from 17 associations. Fourteen of the associations were located in Kinshasa, while three were in Bwamanda. The sociologist also drew on her previous research and publications on "likelemba" and "moziki" associations, conducted for the Department of Women's Condition (21).

Likelemba associations are strictly rotating savings clubs, where members contribute a set amount at a set time interval, with one member receiving the pool at each collection interval. For example, in a likelemba with ten members, each contributing 1,000 Zaires per month, the "savings pool" is 10,000 Zaires, which will go to a different member each month. The members of a likelemba association do not need to meet each time the collection takes place; usually one person is assigned the task of collecting the members' contributions and distributing the pool to the recipient. There are no provisions for paying interest or "bidding" to obtain a more favorable (earlier) place in the cycle as occurs with Wang shares in Thailand; however, people who received the savings pool early during the first cycle move to the end for the second cycle.

Moziki associations have the same structure of a rotating savings club and add two additional features. First, moziki members get together for a social gathering at the time the collection is made. Members make regular contributions toward the refreshments for this gathering. Second, the moziki associations often include an emergency loan fund ("caisse de secours"). Members contribute a fixed amount to this emergency fund each time they get together. If a member is in difficulty and needs to raise a large sum of cash quickly, he or she can request a loan from the emergency fund, repayable usually within 1 to 2 months, without interest. At the end of the moziki cycle (i.e. when each member has had a turn to receive the money from the savings pool), the emergency loan fund is divided up and redistributed evenly to all members.

As an indication of the frequency of such associations, an administrative census in Bokoro town identified 12 likelemba or moziki which have over 1,000 registered members. Another association in Kempa (12 km from Bokoro) counts 100 members. Of these 13 associations, 8 made payments for hospitalization.

Eleven likelemba associations and six moziki associations were surveyed. The general characteristics of the associations are discussed below.

1. Size and Membership

The associations ranged in size from 4 to 20 members, with an average size of 10 members. The likelemba were slightly smaller than the moziki associations. In about half of the associations all members were of the same sex. In both types of associations, 65-68% of members were female.

Members represented a range of occupations: merchants and traders, food sellers, salaried workers, teachers, government employees, housewives, and some "family" associations (including members of the same family). Six of the associations regrouped people with the same occupation or employer. More than occupation, trust and rapport among members, as well as a similar ability and willingness to save, seemed most important to the success of an association.

2. Contributions

Frequency of contributions and meetings ranged from every two days to once a month, with members contributing from 1,000 Z (\$2.33) to 100,000 Zaires (\$232.50). Comparing equivalent monthly contributions, the average contribution for the 17 associations studied was 20,600 Z

(\$47.91). Excluding three associations with contributions of 50,000 Z or higher, the average drops to 13,353 Z (\$31.05).

3. Reasons for Saving

Fifty members were asked what they would do with the savings pool when it was their turn to receive it. The most frequently cited responses were business investment (44%) and purchase of a household durable good (34%). About 8% said they would use the money to pay for education, while 14% cited other uses, including purchase of clothing or jewelry, financing for a trip, and security deposit for housing.

Since school fees are usually paid in August and September, most members had probably already found the funds to pay for education by the time of the survey in October, thus education did not rate high among reasons for saving. Surprisingly, no members cited purchase of health care services as a reason for saving. The emergency loan funds organized through moziki associations were used to purchase health care, however, as described below.

4. Emergency Loan Funds

Four of the six moziki associations studied had emergency loan funds to which members contributed regularly. Equivalent monthly contributions to the loan fund ranged from 900 Z (\$2.09) to 2,000 Z (\$4.65) per member, creating a monthly pool of 9,000 to 40,000 Z (\$21 to \$93). Since the loan pool is additive, the total pool can grow to 81,000 to 800,000 Z (\$188 to \$1,860) by the end of the cycle.

In the four associations with loan funds, 10 of 54 members (18%) had received loans in the past 12 months. Loans ranged from 10,000 to 50,000 Z (\$23 to \$166), with an average loan size of 27,500 (\$64). Four loans were made for health-related reasons; three helped finance birth, and one was for a non-maternity hospitalization. Other reasons for loans were deaths or marriages. Loans were repaid in 1 to 2 months, without interest.

An additional function of the loan fund is to assure that the association does not falter because one member fail make his or her contribution during a particular interval. The loan fund is used to complete the member's contribution, and the member repays the fund before the next meeting.

In the two moziki associations without loan funds (both of which were located in the rural area of Bwamanda), members stated that collections were sometimes taken up for members facing extreme difficulties. This money was given, not loaned, to the member in need. In a recent case, 500 Z (\$1.16) was collected from each member for a total of 3,000 Z (\$7) to give to another member who had been hospitalized. This amount represents about two-thirds of the standard price of a hospitalization in the internal medicine ward.

5. Use of Money Lenders for Medical Emergencies

A recent World Bank study of savings and credit cooperatives in Zaire documents the use of money lenders as a source of informal credit (22). In the associations surveyed, members were asked if they had ever borrowed money from a money lender to pay for extraordinary health expenses. Of the 50 members surveyed, one admitted she had borrowed 20,000 Z (\$46) to pay for her sister's operation. She repaid the loan in one month, with 50% interest. The sociologist conducting the interviews noted that the practice of using money lenders is considered embarrassing, however, so people may have been reluctant to admit that they used money lenders.

6. Roles of Informal Associations

In conclusion, informal savings associations are used by many people in both rural and urban areas as a way to put aside a block of money for large consumer purchases, predictable education expenses or business investment. The rotating savings funds are not used currently to provide a cushion of security in case of medical emergency or other unexpected needs. A subset of informal savings associations--the moziki associations--does provide a mechanism for financing catastrophic health care by granting short-term loans to members.

Because membership in informal associations is very small (4 to 20 members), insurance schemes would not be feasible. The emergency loan funds are a good alternative, however, and associations should be encouraged to provide this service to members. Operations research might also explore the possibility of lengthening the repayment period for loans, and charging interest. These options may not be feasible, however, due to the short life of most of these informal associations. Most informal associations lasted less than a year, in the sense that membership generally turned over after one or two cycles when the savings objective had been obtained. Some of the same members may form a subsequent informal association, but it is considered a different association.

The savings and credit study proposed many ways in which donors can help strengthen COOPECs (Savings and Credit Cooperatives), another more formal but still grass-roots type of savings association. The study team recommends that the PASS implement that study's recommendations, especially to provide training in financial management to COOPEC managers and administrative staff. As COOPEC organizations begin to function more effectively, the possibility of providing health insurance through COOPECs directly (or using COOPECs to help administer insurance plans) can be explored.

III. CONCLUSIONS AND RECOMMENDATIONS

The case studies in this report have described a varied group of insurance schemes for rural and urban populations in Zaire. Several factors can be identified which favor or hinder the replicability and the development of health insurance plans. These conclusions summarize the 13 lessons learned from the case studies, and offer recommendations for next steps. The recommendations seek to strengthen existing systems, to learn from Zaire's rich experience in health insurance, to extend the existing systems, and to encourage appropriate initiatives. Our findings do not support the rapid implementation of a nation wide conventional health insurance system as a feasible solution. Instead, decentralized, locally managed plans seems to be a key success factor.

A. TERMS OF THE INSURANCE PLAN

1. The Insurance Schemes Cover Selective Types of Services

Theories of risk pooling suggest that insurance is most appropriate for events which are infrequent but would cause severe financial hardship. Inpatient care and treatment of certain chronic illnesses in rural Zaire meet this criterion. A typical rural hospital admission costing \$ 15, for example, would consume one month's income for a Zairois earning the per capita GDP. Several of the systems did, indeed, insure inpatient care: Bwamanda, REMEF, Masisi, and UPM. It was striking, however, that the systems in the other case studies (CASOP, St. Alphonse, and Bokoro) insured only outpatient care. The framers of the Bokoro plan had wanted insure both inpatient and outpatient care but found that the resources were sufficient only for outpatient care. Whereas the schemes in Bwamanda and Masisi explicitly covered care of chronic illnesses, the systems in Bokoro, St. Alphonse, and CASOP excluded it.

Insurance for ambulatory services, while theoretically less important than inpatient services, seems more attractive to many consumers. As ambulatory care is frequently consumed, consumers will immediately recognize the value of insurance coverage. Also, insurance may provide a way to pay for care at a time that cash is more readily available, such as at harvest time. The consumer surveys in this study indicated the attractiveness of covering ambulatory care. Among insured respondents in Bwamanda, 81% would like to increase their premiums sufficiently to cover ambulatory care. Among respondents in the Kinshasa survey, 85% would recommend their current largely ambulatory insurance plan to their family. The argument against such insurance is that moral hazard (excessive use of the insured services) and added administrative costs make such coverage much more expensive than paying for the services directly.

2. The Most Successful Plans Have Modest Premiums

The fuller the range and depth of insured services, the higher the required premium is. Among the plans studied here, Bwamanda and CASOP had the most members, with 134,680 and 42,000 (nationally) respectively. The 1989 annual premiums per family member were 125 Z (US \$0.29) in Bwamanda and 1,200 Z (\$2.79, a modest amount for Kinshasa) plus an enrollment fee in CASOP (100 Z per worker per month for an assumed family of 6). These plans limited services to those affordable within these financial constraints. The Bwamanda plan was essentially limited to inpatient care that met three conditions: the patient had been referred from a health center within the system, hospital staff confirmed the need for admission, and the care was provided in the hospital offering the insurance. In CASOP, individual membership provided only a modest reduction in fees. At their Kinshasa polyclinic, insurance lowered the price of the most frequently chosen consultation (consultation with a specialized physician) by only 36%, from 700 Z for a non-member to 450 Z for a member.

By contrast, in rural Bokoro the annual premium per person (not per family) was 1200 Z

(\$2.79). In the survey in Bokoro, respondents indicated that they could afford an annual premium of 100 to 200 Z. The only subscribers in Bokoro were employees whose premia were paid by their companies. The plan insured only 4.5% of the zone's population. The premium was beyond the financial means of potential individual members.

B. ORGANIZATION AND MANAGEMENT

1. An Acceptable Quality of Services Is a Precondition for Insurance

It is very difficult to measure quality of care without first developing common standards, and secondly conducting utilization reviews to examine the appropriateness of diagnoses and treatments, evaluate patient outcomes, and investigate deviations from standard protocols. Lacking common standards and historical utilization reviews, it is impossible to detect a causal relationship between the organization of a health insurance plan, and changes in quality of patient care. It is possible to record observations about general quality measures, however, including availability of drugs, training and level of staffing, and condition of infrastructure. It is also possible to formulate hypotheses about the nature of the relationship between insurance systems and quality of care, even if such hypotheses cannot be tested without additional data collection.

A likely hypothesis is that health providers which offer insurance programs have higher quality of care than health providers which do not have any form of community financing system (user fees, insurance, or other). This is because community financing systems, including health insurance plans, increase the financial resources available to health providers, thereby allowing the providers to spend more on quality improvements (assuring drug supply, hiring and training staff, etc.). There is no reason to believe, however, that insurance systems would be any better at improving quality than user fee systems, except that insurance systems may be able to mobilize greater financial resources, depending on how premiums are priced, levels of enrollment, and how premium revenues are invested.

Bwamanda, Bokoro, St. Alphonse, and CASOP, all had high quality of care, in terms of general indicators such as drug supply, staffing and infrastructure (see Table II.2 in Section II). All four providers had a steady supply of drugs with very infrequent stock-outs. Bwamanda, Bokoro and CASOP all have several doctors and well-trained (A-1 level) nurses; St. Alphonse Health Center has several well-trained nursing staff. All four facilities have good to fair infrastructure, with well-maintained buildings and most essential equipment. The facilities were busy with patients, suggesting that patients had sufficient confidence to spend their time and money to seek treatment. Compared to other health zones receiving donor assistance (for example, from the SANRU project or Sante Pour Tous Kinshasa), the quality of care at the facilities studied was about equal. Compared to non-donor assisted zones, however, quality was much higher.

Studies elsewhere in Africa, such as Rwanda, have demonstrated that the population is willing to pay substantially for the availability of drugs [24]. If drugs are absent, patients lack confidence in the facility and few will use it. Before trying to develop health insurance, it would be important to assure that patients have confidence in the provider(s) covered under the insurance.

If a health facility had poor quality due to inadequate resources, it seems unlikely that creation of health insurance alone could break the cycle. However, if some external assistance (funding, qualified personnel, donated supplies, or technical assistance) could raise quality and confidence for a period of time, then insurance could help make those improvements sustainable.

2. Voluntary Schemes Have Found It Important to Sensitize the Population

To obtain widespread enrollment, a voluntary insurance system needs to sensitize the population to its value. In systems organized through a health zone, the workers in that zone can organize this enrollment. In Bwamanda, this awareness campaign functioned well and over 60% of the zone's population was enrolled in both 1988 and 1989. As enrollment occurred at a specific time, village meetings were held at that time to promote the system. Health workers received a commission (3% of the premiums they collected) to reinforce their enthusiasm.

In Bokoro, on the other hand, workers in health centers received no incentive, did not appear interested in the subscription plan, and enrollment was low. In St. Alphonse, the parish development committee promoted enrollment and conducted a door-to-door campaign, though current enrollment is only about 6.2% of the population of the urban zone. (As this approach probably permitted only a single contact with each potential enrollee, it may not have been that effective.) Because village leaders often command the respect of the population, their endorsement of a new system can be a strong force in sensitizing the population to the value of a new system.

There may be many more opportunities for well functioning voluntary associations to add health insurance to their activities. The Commission mentioned in the introduction to this report identified 562 currently operating associations of all types. A health provider could work in partnership with several mutual associations in its vicinity to offer health insurance. The health provider would offer preferred access to members of the affiliated voluntary associations. The associations would provide some oversight over the quality and charges for services and would market an insurance system to its members. In the United States, many professional associations offer life and health insurance to their members in this way.

3. Committed, Decentralized Management Provides Flexibility and Accountability

All of the systems studied were under local control. The one national system, CASOP, delegated financial responsibility to local councils. Decentralization can be important even within an insurance system. In Bokoro, each health center exercised some control over its profits. As only a 25% share was allocated for its immediate use and deficits could be passed on to other health centers, there was little incentive for good financial performance.

All of the systems visited in the course of this study were run by health providers. These so called direct insurance systems offer important advantages in efficiency and control over indirect insurance systems, in which the insurer pays some independent provider for care. The indirect systems raise many questions of financial control. The insurer must assure that the member needs the service being requested, that the chosen provider is competent to perform the service, that it actually was performed, that the insured is the actual recipient of the service, and that the fee was appropriate. In a provider based system, many of the inherent conflicts between the insurer and the provider are avoided.

Committed administrators contributed to the success of the Bwamanda system. The director of the CDI Medical Service is a Belgian physician who has worked 14 years in Bwamanda. Other personnel, from the insurance plan administrator to the health center nurses, also believed in the system. While nurses welcomed the commission of 3% of the premium income they collected, they also seemed to appreciate being part of a well functioning system that allowed them to use the locally available resources to provide health care to their population.

4. Simple Control Methods Can Reduce Risks of Error or Fraud

Widespread error or fraud would undermine the financial viability of a health insurance

system. Control is required for several steps. The case studies have identified useful approaches for many of them.

(a) Assuring that premium income is received and accounted for for all persons recorded as paying. The system of printed stamps in Bwamanda provided a useful device. Each health center is issued a specific quantities of two-part enrollment stamps during the enrollment period. Upon payment, a member is given a stamp for each household member. At each supervisory visit during enrollment, the zone's financial officer withdraws the cash on hand and verifies that it matches the value of stamps distributed.

(b) Assuring that persons claiming to be insured have paid the current premium. Again, in Bwamanda one part of each of the above-mentioned stamps was affixed to the back of the family's health card kept at the center; the other to individual cards retained by each person. All stamps are signed to validate them. When a member seeks hospital care, he (or his guardian) must present his health record with the current signed stamp on the back.

(c) Preventing a non-insured person from easily borrowing the card of an insured individual. In CASOP, members had photo identification cards, a technology that is relatively expensive in Zaire. The cards were feasible for CASOP because they were generally needed only for one household member, the premium was higher (100 Z per month) so that the cards were more affordable, and getting photographs made and developed is relatively straightforward in Kinshasa.

In Bwamanda, identification photographs would have cost as much as the insurance. Instead, control relies on identifying information about the insured. First, his health card contains some descriptive data about the person named (age and height) that can be matched against his or her appearance. In addition, the enrollment register contained the names and birth dates of other family members about which the presumed insured can be quizzed.

(d) Assuring that the policy of enrolling all members of the family is enforced. In Bwamanda, as in some other zones, the health centers endeavored to maintain up-to-date cards on all persons in their catchment area. Provided that these cards were up to date, they create a roster for each family at the time of enrollment.

(e) Assuring that patients and insurers are charged appropriately for services through a clear system of prices. In Bwamanda, hospital care was charged in one of 16 all-inclusive prices per admission. This simplicity reduces the risk that the provider will perform unnecessary services to overcharge the insurer.

5. Appropriate Investment Strategies Can Preserve the Value of Premium Income over the Year

Because of the high rates of inflation in Zaire, the operation of insurance poses special challenges. In other countries, premium income could be kept in cash from the beginning of the year, when it is collected, until the middle of the year, when it is spent. In Zaire, where the rate of inflation may exceed 100% per year, this approach would be ruinous. Approaches to saving money without major erosion by inflation include investing in a responsible local institution. For example, funds invested with the CDI at Bwamanda earned a compound rate of 2.5 percent per month in 1989 (34.5% effective annual yield). It may also be possible to invest in drug supplies, provided the pharmacy is well run and drugs are safe. As drugs are mostly imported, their value will grow in proportion to the exchange rate with their country of origin.

6. Financial Analysis of the Insurance System Requires Better Accounts

None of the insurance systems visited by the team had up-to-date financial statements for

the system that could be used to assess its financial health. In CASOP, the financial system was so incomplete that no financial statement could be constructed for either the polyclinic or the insurance system. In Bokoro and St. Alphonse, financial statements for the health centers could be constructed, but premium income and expenses of insured patients could not be separated from the centers' other financial transactions. Bwamanda constructed an annual financial statement for the insurance plan at the end of each year, but it contained so many year end journal entries that no meaningful analysis could be performed mid-year.

Better financial accounts would aid the insurance systems in setting premiums and controlling costs, as well as providing better data to guide future policies.

7. A Financial Guarantor Can Help Build Confidence in Launching an Insurance System

When a new insurance system is established, many factors could precipitate insolvency. Accumulated health problems could lead to an initial burst of demand. Inadequate data or limited information could lead to underestimation of utilization or prices. An insurance plan may incur fixed expenses despite low enrollment. The public will be more likely to enroll in an insurance system if they are protected against these outcomes. Many organizations could serve as a financial guarantor. In Bwamanda, the CDI served this role. (Fortunately, it was never required to make good on its guarantee.)

In the future in Zaire, this study encourages existing organizations to serve as guarantor. The Government of Zaire, with support of PASS, the SANRU program, Sante Pour Tous, UNICEF, or a PVO might serve this role. The financial guarantee need only be given for one year at a time. If there are losses, the premiums or services can be revised or, if necessary, the system can be abandoned to prevent further losses.

C. RESOURCE MOBILIZATION

1. Access and Resource Mobilization Motivated Health Insurance Schemes

Health insurance systems were started primarily to meet two objectives concurrently: mobilizing resources and increasing access to services. In the health zones of Bwamanda and Bokoro, the hospitals had chronic or mounting deficits. They felt that substantial increases in user fees would price their services beyond the ability of the population to pay. With health insurance, ill persons would be more likely to seek care. As evidence of the goal of increasing access to health services, the insurance systems were promoted by developmental organizations such as the Center for Integrated Development in Bwamanda, the Development Committee of St. Alphonse Parish in Kinshasa, and the social welfare structure of CASOP. In Bwamanda, where the most detailed financial statements were available, the share of the hospital's operating costs recovered rose from 48% in 1985 to 79% in 1988.

D. UTILIZATION AND ACCESS

1. Evidence of Adverse Selection and Moral Hazard was Found, But Plans Minimized Their Impact

In every plan for which utilization of insured and uninsured persons could be compared, insured persons were found to use more services. In Bwamanda, insured persons were 6.7 times as likely as uninsured to be hospitalized. At Bekoro health center, plan subscribers had 5.0 times as many new ambulatory episode as non-subscribers. In the Kinshasa surveys, insured respondents reported more previous visits (2.0) for their current illness episode than uninsured (1.6). Similarly, utilization data from CASOP showed more visits per episode among individuals insured (2.5) than among those uninsured (2.0).

While comparisons among the diverse insurance plans require caution, this evidence suggests

that insurance makes a big difference in the likelihood of receiving services at all, but has only a modest impact on the intensity of those services among those receiving some care.

Plans used several approaches to minimize risk of adverse selection. Several required family membership. In Bwamanda, Bokoro, CASOP, SNHR, and now Masisi, if one member of a family joins, then the family must join. In REMEF, St. Alphonse, and formerly in Masisi, there was no such requirement. (Policies for UPM were not known.) This policy seemed to be effective in increasing enrollment overall, and members without special risk specifically. As plans did not graduate premiums by age or prior illness, the risk of adverse selection could otherwise be substantial. Masisi found that in its first six months of operation, enrollment was low and a deficit was incurred and the zone has therefore changed to family enrollment.

Other plans enrolled employee groups. Employee groups constituted 100% of members in Bokoro and 80 percent in REMEF. In CASOP, although the share of company member is unknown, they accounted for 51% of visits in 1989. SNHR is also an employee group and UPM is sponsored by workers' unions. This strategy appears successful in helping to make the insurance plan viable and should be encouraged as one method of recruiting members. It should not, however, be the exclusive method of enrollment, as that policy would exclude the bulk of the rural population. In Bwamanda rural health zone, for example, only 4.6 percent of the population was employees or their family members.

Some plans limited enrollment to a specified time of the year. In Bwamanda, enrollment took place only in March to April, after the second harvest. In St. Alphonse and CASOP, enrollment was allowed at any time of the year, and in CASOP, even when the subscriber was ill. Policies to limit adverse selection are most important when adverse selection would be most severe. This would occur when insured individuals would receive substantial discounts on infrequent, expensive services. Thus, limiting the time of enrollment or restricting enrollment at the time of illness is important in Bwamanda, where the insurance covered inpatient care and chronic illness, and in the CASOP.

2. Systems of Utilization and Cost Control Can Help Make Insurance Affordable

Several systems of utilization and cost control have helped to make insurance affordable. Co-payments have been used by all of the systems visited. In Bwamanda, the user generally pays 20%; in Bokoro, 25%. In St. Alphonse and the CASOP, the payment schedules are more complex, but co-payments average about two thirds of the costs. Previously, when CASOP had no co-payments, they found that outpatient costs far exceeded the share of membership fees available to cover them, and the policy was changed.

Plans have also excluded certain services in an effort to control costs. The Bokoro subscription does not pay for ambulatory care of chronic illnesses. The Bwamanda insurance does not cover initial ambulatory consultations directly with the physician.

Bwamanda used another important device to control cost: utilization control, through insistence on the referral system. Before a patient could be hospitalized, the patient had to be referred from a health center and a provider at the hospital had to confirm the need for admission.

E. INFORMAL ASSOCIATIONS

1. Informal Associations Financed Health Care Only Through Emergency Loan Funds

There are two types of informal associations. In a likelemba, or rotating savings association, each participant contributes a specified amount at a designated frequency. Among the participants surveyed in this study, the contribution averaged \$ 47.91 per month. One member receives the entire pool at each interval. Members used the savings for business investment,

purchase of a household durable good, or schooling. None said that they saved for medical expenses.

In a moziki, members not only make periodic savings into a pool, but also contribute regularly into an emergency loan fund. The pool financed loans to members in cases of births, deaths, marriages, or hospitalizations. In a survey of 54 moziki members, 10 had received loans in the past year, of which 4 were related to health (births or hospitalizations). Borrowers repaid loans without interest. In two moziki, members facing extreme difficulties could request a special collection from which the proceeds were given, not loaned, to the member in need.

F. STRENGTHENING EXISTING INSURANCE SYSTEMS

The existing insurance systems, while vibrant and innovative, could benefit from several steps.

1. Training

Training in the basic concepts and administrative aspects of health insurance schemes should be offered at the School of Public Health, University of Kinshasa, at successfully functioning systems such as Bwamanda, and through refresher programs offered by FONAMES, SANRU and the Sante Pour Tous project. A manual about the management of health insurance plans should be developed for this training. The training should consider both general principles (how to calculate premiums based on actuarial data) and an analysis of the experiences of functioning plans in Zaire.

2. Exchange Visits

An intra zone program of staff exchanges or site visits should be established. The existing systems could invite personnel from nearby zones to observe their system and adapt their forms and procedures. For example, under the sponsorship of officials for Equateur Region, the health zones around Bwamanda (e.g. Tandala and Gemena) could be given assistance in adapting and replicating the Bwamanda system.

3. Information Systems

Without a standardized information system and monitoring procedures, the costs and benefits of a health insurance system are difficult to evaluate and almost impossible to compare with other plans. To help existing insurance systems and possible future efforts, an appropriate coordinating agency (SANRU, PASS, or the Ministry of Health) should develop guidelines for information collection which would assure that utilization and accounting data are adequate for evaluation purposes (for example, availability of utilization and financial data by major payment categories: insured, employed, uninsured and unemployed).

Data analysis was hindered by the fact that none of the plans appeared to have a unique identifying number for each member. With decentralized enrollment through health centers in Bokoro and Bwamanda, each health center tended to develop its own numbering system. A comprehensive system would be easy to develop, in which the first digits represented the health center, the middle digits the village and the family, and the last digits the individual.

4. Technical Assistance

Technical assistance can help each plan tailor the lessons learned from the three areas above to their own site, and to implement new accounting systems or policy changes.

G. ESTABLISHMENT OF ADDITIONAL INSURANCE SYSTEMS

1. Rural Health Insurance Systems

This study suggests that insurance systems have increased access to health services and mobilized resources in rural areas. Thus, a policy goal is to foster the development of additional systems to serve other parts of the country, and to gain more experience as to which approaches work best in which situations. The study suggests that additional rural schemes be established building on the lessons learned. This study suggests initiating varied types of systems: some for inpatient care only (like Bwamanda), some for inpatient and outpatient curative care (like the intention for Bokoro), and others that are comprehensive and include preventive services as well (like REMEF). The training, site visits, information systems, and technical assistance recommended above to strengthen existing systems should be extended to encourage new rural systems.

A model of particular interest for ambulatory care would be a system of prepayment. A member would prepay for a specified number of ambulatory episodes; say, five. He would receive a book of five vouchers. The subscriber would be offered a discount compared to the current charge in return for having prepaid the services. The vouchers would be promoted for sale, like insurance, at a time of the year when cash was most available.

2. Urban Health Insurance Systems

The Chief of the Commission on the Organization of Mutuels had been invited to submit a recommendation for consideration by the government for an urban based health insurance system. Any urban based system is likely to experience high utilization and, perhaps, expectations for high quality.

This study suggests that a hospital-based HMO-type insurance plan should be tested. Civil servants and their families would enroll on a family basis, paying a set premium which would enable them to seek inpatient care in case of need at a specified hospital. A separate organization would manage marketing efforts for the plan, and would turn over a percentage of the premium payment to the hospitals, based on subscribers. The premium would be set high enough to cover the risk of adverse selection. Users would pay a co-payment for each episode of hospital care. Ambulatory care could be controlled either through co-payments or through a voucher system, like that described above.

The potential advantage of this approach is that it includes mechanisms to direct hospital use to a particular facility and to control utilization. Utilization rates should be projected initially based on the experience of other large employers with similar workers; the system should then be refined based on actual experience.

REFERENCES

1. World Bank. Zaire: Population, Health and Nutrition Sector Review. Population and Human Resources Division, Africa III. Report No. 7013-ZR. Washington, D.C. May 15, 1989.
2. Mills, Anne. "Economic aspects of health insurance," in The Economics of Health in Developing Countries, eds. Kenneth Lee and Anne Mills. New York. Oxford University Press. 1983.
3. Baer, Franklin C., "The Role of the Church in Managing Primary Health Care in Zaire," USAID Kinshasa, Zaire: SANRU Basic Rural Health Project. No Date.
4. Bitran, R., et al. "Health Zones Financing Study, Zaire." Report prepared for the Resources for Child Health Project, USAID. Arlington, VA. March 1987.
5. Bitran, R. "Zaire Social Sectors Adjustment Project Health Care Financing Report." Cambridge, MA: Abt Associates Inc. for the World Bank. March 29, 1989.
6. de Bethune, X., Alfani S. and Lahaye J.P. "The influence of an abrupt price increase on health services utilization: evidence from Zaire." Research Reports, WHO, p. 76-81.
7. Bitran, R., "A 1986 Update of the Zaire Health Zones Financing Study." Report prepared for the Resources for Child Health Project, USAID. Arlington, VA. April 1988.
8. Bitran, R., "A Household Health Care Demand Study in the Bokoro and Kisantu Zones of Zaire: Volume II: Descriptive Analysis." Report prepared for the Resources for Child Health Project, USAID. Arlington, VA. Draft, Sept. 1988.
9. Bitran, R., et. al. "Case Studies on Management of Ten Health Zones in Zaire." Report prepared for the Resources for Child Health Project, USAID. Arlington, VA. 1986.
10. Bitran, R. A. "A Supply-Demand Model of Health Care Financing." Report prepared for the Resources for Child Health Project, Basic Rural Health Project, and Economic Development Institute of the World Bank. Draft. Cambridge, MA: Abt Associates, Oct., 1989.
11. Dikassa Lusamba, et. al. "Community Financing for Primary Health Care in the Republic of Zaire." Chevy Chase, MD: Primary Health Care Operations Research Project (PRICOR) 1986.
12. Ebenga Lombilo. L'Assurance-maladie via la solidarite sociale nationale: comment atteindre cet objectif au Zaire? Dissertation pour l'obtention du grade de licence speciale du departement des sciences hospitalieres et medico-sociales a Bruxelles. Bruxelles: Universite Catholique de Louvain, Faculte de Medecine. 1988.
13. Ebenga Lombilo. Mission d'Organisation des Mutualites au Zaire. (Rapport Final). Conseil Executif. Kinshasa, Zaire. Sept. 1989.
14. Moens, F. Design, Implementation and Evaluation of a Community Financing Scheme for Hospital Care in Developing Countries: A Prepaid Health Plan in the Bwamanda Health Zone, Zaire. Thesis prepared for completion of Master of Public Health degree at the University of North Carolina at Chapel Hill. 1988.

15. Vian, T. et al. "Financial Management Information Systems in Four Zairian Health Zones." Report prepared for the Resources for Child Health Project. Arlington, VA. December 1987.
16. Vian, T. "A Household Health Care Demand Study in the Bokoro and Kisantu Zones of Zaire: Volume I, Survey Design and Data Collection Techniques." Report prepared for the Resources for Child Health Project. Arlington, VA. June, 1989.
17. de Ferranti, D. "Paying for Health Services in Developing Countries: An Overview." Staff Working Paper No. 721. Washington, D.C.: World Bank. 1985.
18. Griffin, C. "User Charges for Health Care in Principle and Practice." EDI Seminar Paper No. 37. Washington, D.C.: World Bank. 1988.
19. World Bank. "Financing Health Services in Developing Countries: An Agenda for Reform." Washington D.C., World Bank. 1987.
20. Vogel, R. "Cost Recovery in the Health Care Sector: Selected Country Studies in West Africa." World Bank Technical Paper No. 82. Washington, D.C.: World Bank. 1988.
21. Karaha Kagobo, Kagado Musinda Rweju. "Le 'likelemba' ou forme d'association en milieu urbains," Kinshasa (a Zairian magazine), p. 11-12, 1988.
22. Marx, M. "Social Sector Adjustment Credit (SSAC) Cooperatives d'Epargne et de Credit." Report prepared for the World Bank. Kinshasa: J.G.P. Consultants. July 1989.
23. Rapport Annual. Zone de Sante Rurale de Bwamanda, Zaire. 1985, 1986, 1988.
24. Shepard, D.S. and Benjamin, E.R. "User Fees and Health Financing in Developing Countries: Mobilizing Financial Resources for Health." In Health, Nutrition and Economic Crises: Approaches to Policy in the Third World, Bell, D.E. and Reich, M.R., eds., Dover, MA: Auburn House Publishing, 1988.

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ANNEX I

Description of the Zaire Health Zone Structure And Management Organization*

* Source: Adapted from Bitran, et. al. "Health Zones Financing Study" 1986, with some edits.

Administrative Structure of the Zones and Management Systems

This appendix describes the organization of the facilities that belong to the zones' networks.

The Zairian health zones are organized according to the classical pyramidal model (see Figure 1). At the top of the set of providers is the set of providers is the reference hospital which provides mostly inpatient care and deals with more complicated health problems. At the bottom of the system are the health posts which treat more simple, ambulatory cases, and promote preventive programs. Health centers and reference health centers are in intermediate levels and provide a mix of ambulatory and inpatient services.

Linking these four levels of health care units is a system of referrals. Patients who cannot be treated at a given level due to the complexity of their problem are sent to the level about to seek treatment.

The medical and administrative activities of these four categories of health care units are supervised and coordinated to varying extents by the zone's central office. The nature of the relationships between the above-mentioned units varies among the zones.

Decisions at the health zone level are usually made by the health zone management committee, usually presided over by the Medecin Chef de Zone. Providers, health centers, the reference hospital and the population are usually represented in this committee.

Decisions concerning the set of health centers are usually made at the health centers' management committee, where the population, providers, and health centers' technical personnel are represented. The Medecin Chef de Zone normally chairs this committee.

Technical and administrative activities of the reference hospital are usually decided and coordinated by the hospital management committee, co-chaired by the hospital director and the Medecin Chef de Zone.

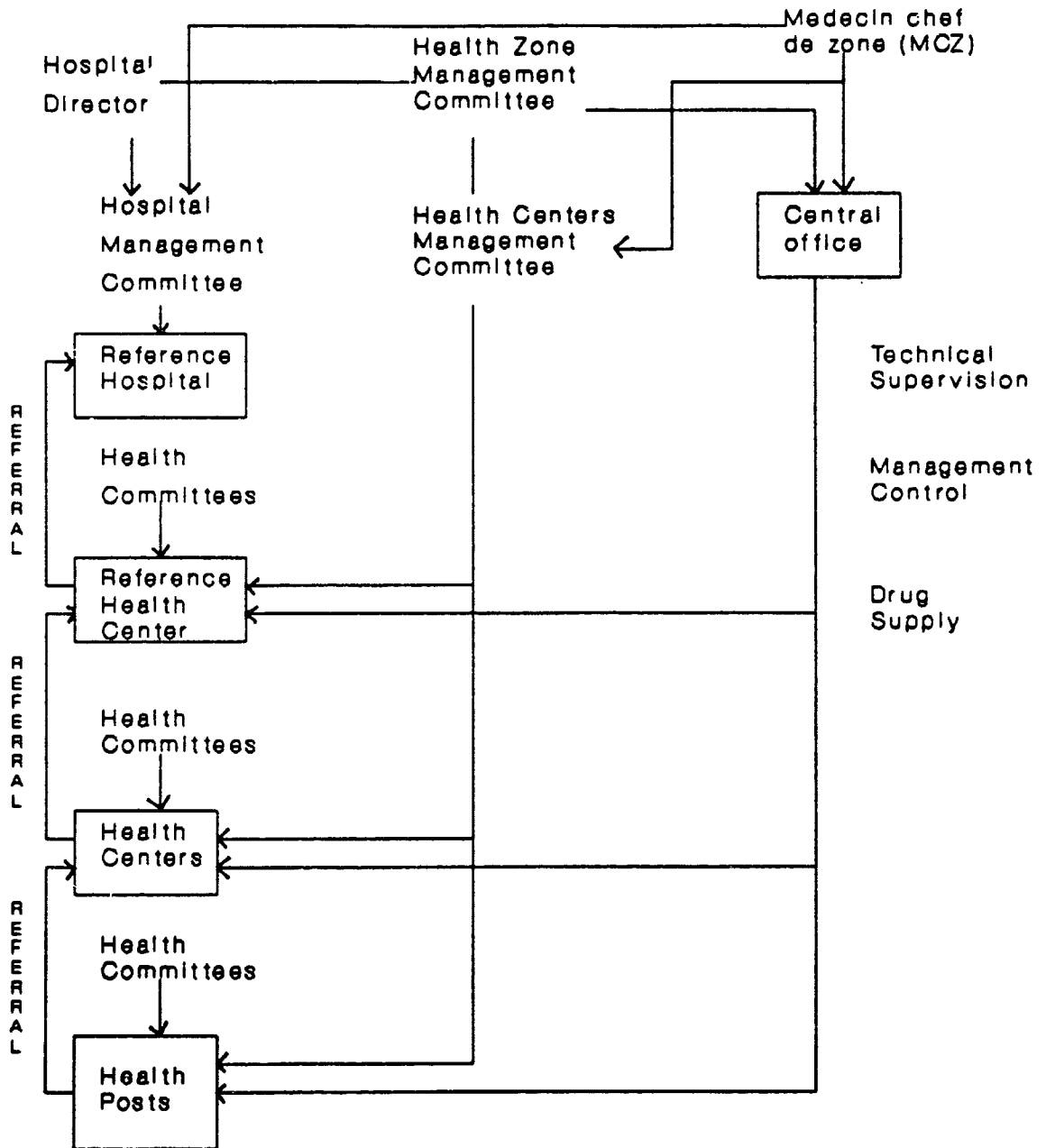
The population plays an active role at the health center level through the health centers health committees. Usually, each health center has its own committee made of community volunteers. They play a major role in controlling the health center's accounting, and are essential at promoting activities such as health education and sanitation.

The central office supervises the medical and administrative activities that take place in the health centers. Supervision involves periodic trips to the facilities by the Medecin Chef de Zone and other doctors and nurses of the central office. In exchange for its supervisory services, the central office charges a fee to the health centers.

The supervision fee may be the same for all health centers or may vary depending on the volume of activities of each individual facility. For example, in Kalonda, each health center paid a monthly supervision fee of 400% in 1985. In Kirotshe they paid 10% of their monthly revenue, excluding that from the sale of drugs. In Dungu in 1986, health centers pay to the central office 50% of their monthly revenue, drugs excluded. Finally, in Bokoro, the supervision fee paid by each center is proportional to the population of the center's health area and to the number of new curative cases treated in the facility.

In addition to its supervisory role, the central office performs a series of other activities which permit the functioning of the zone's health network. The other activities include accounting, financial and technical planning, drugs and material purchasing and management, training of the zone's employees and coordination of immunization activities. The supervision fees are generally insufficient to finance the expenses attributable to that activity and are only a small fraction of the central office's total expenses.

Figure 1 Administrative Structure of a Health Zone



With regard to the supply of materials, health centers purchase the majority of their drugs and medical supplies from a central pharmacy which is usually managed by the central office. In some zones the central office charges the health centers a mark-up above purchase price which helps finance its operating costs. In other zones, the office acts only as an intermediary and does not charge any fee for its role of supplier. The proportion of drugs and materials that the health centers purchase from other local suppliers is usually small.

The major relationship between health centers and the hospital is the referral of patients. In most cases, patients are referred to the hospital at no cost to the health center. In a few cases, however, health centers do have to pay a fee to the hospital for each referral. Such a fee is set by the hospital to discourage health centers from referring patients whose health problems can be treated at the health center level. In Kikimi, such a payment was 5Z in 1985, which obviously did not cover the costs generated by the referred patient. Kindu is another example of a zone where the health centers have to pay the hospital for referred cases. In 1985, the hospital received 75,900Z (\$1,500) worth of referral fees.

Finally, the reference hospital is intended to be a financially independent unit and its only formal relationship with the central office is, in most cases, the purchase of drugs.

**ANNEX II
LIST OF PRICES 1988 AND 1989
BWAMANDA REFERENCE HOSPITAL
AND HEALTH CENTERS**

**HOPITAL GENERAL DE REFERENCE
B.P. II GHEENA**

**TARIF DES SOINS MEDICAUX A L'HOPITAL DE BWAMANDA
A PARTIR DU 17/04/1989**

N°	DESIGNATION DE SOINS	C A T E G O R I E			
		A. RECEPSE	B. MEMBRE DE L.A. MUTUELLE	D. NON RECEPSE	D. SOCIETES
01	Pédiatrie I	1.500 s	300 s	3.000 s	3.750 s
02	Pédiatrie II (Soins Intenses)	2.500 s	500 s	5.000 s	6.250 s
03	Médecine Interne I (Ambulatoire)	3.000 s	600 s	6.000 s	7.500 s
04	Médecine Interne II (Hospitalisé)	4.500 s	900 s	9.000 s	11.250 s
05	Médecine Interne III (S. Intenses)	6.500 s	1.300 s	13.000 s	16.250 s
06	Chirurgie I	3.500 s	700 s	7.000 s	8.750 s
07	Chirurgie II	7.000 s	1.400 s	14.000 s	17.500 s
08	Chirurgie III	8.500 s	1.700 s	17.000 s	21.250 s
09	Chirurgie IV (Urgence)	10.000 s	2.000 s	20.000 s	25.000 s
10	Maternité avec C.P.N.	1.500 s	0 r a t u i t	3.000 s	3.750 s
11	Maternité sans C.P.N.	4.500 s	4.500 s	9.000 s	11.250 s
12	Gynécologie	4.500 s	900 s	9.000 s	11.250 s
13	Maladies chroniques +TBC 1 ^{ère} ligne	2.000 s	400 s	4.000 s	5.000 s
14	TBC 2 ^{ème} ligne	5.000 s	1.000 s	10.000 s	12.500 s
15	Extraction dentaire + Circoncision	1.000 s	200 s	2.000 s	2.500 s
16	Consultation Privée et Examen d'aptitude physique	3.000 s	3.000 s	3.000 s	7.500 s

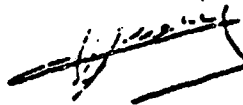
OBSERVATIONS:

1. L'accouchement est gratuit pour les femmes qui ont suivi les C.P.N. et qui sont membres de la Mutuelle.
2. Chambre Individuelle : 250 s
3. Prix d'Affiliation (Mutuelle) : 125 s/an

Fait à Bwamanda, le 15/04/1989

POUR LE COMITE DE GESTION DE LA ZONE
DE SANTE RURALE BWAMANDA

70 : DR. FREDDY MOENS : -
Médecin-Chef de Zone



Tarif des soins médicaux a partir du 15 avril 1989

ZONE DE SANTE RURALE DE BWAMANDA
CDI - BWAMANDA
B.P. 11 GEMENA.

TARIF DES SOINS MEDICAUX AUX CENTRES DE SANTE A PARTIR DU 15 AVRIL 1989.

DESIGNATION DE SOINS	C A T E G O R I E			
	Recensé	N. Recensé	S O C I E T E S	
			Recensés	N. Rec.
01. Consultat° Enfant + Elève	200 z.	400 z	500 z	1.000 z
02. Consultation adulte	400 z	800 z	1.000 z	2.000 z
03. Consultation Périnatale + Ngissance désirable	400 z	400 z	400 z	400 z
04. Consultation Préscolaire	200 z	200 z	200 z	200 z
05. Fiches familiales		G R A T U I T		
06. Carte de recensement			20 z	
07. Pharmacie familiale (sa- chet nivaquine + aspirine)			50 z	
08. Vente condom			10 z	
09. Maladies chroniques	2000 z.	4000 z	5000 z	10.000 z
* Les membres de la mutuelle payent		400 z		

OBSERVATIONS:

- * Les frais de traitement de maladies chroniques ne couvrent pas les autres épisode de maladies.
- * Les malades dont l'état nécessite une fiche d'hospitalisation au Centre de Santé de Référence (transfusion, perfusion, traitement filaire, ...) payent une deuxième quittance.

Fait à Bwamanda, le 13/Avril/1989

POUR LE COMITE DE GESTION DE LA ZONE
DE SANTE RURALE DE BWAMANDA

DR. FREDDY MOENS

Médecin-Chef de Zone.

Tarif des soins médicaux à l'hôpital à partir 1er février 88

ZONE DE SANTE RURALE DE BWAMANDA
HOPITAL GENERAL DE REFERENCE
B.P. 11 GEMENA

TARIF DES SOINS MEDICAUX A L'HOPITAL GENERAL DE REFERENCE DE BWAMANDA A PARTIR DU 1er FEVRIER 88' XXXXXXXXXXXXXXXXXX

DESIGNATION DE SOINS	C A T E G O R I E					
	<u>A</u>	<u>B</u>			<u>C</u>	<u>D</u>
	Recensé	Membre de la Mutuelle			N.Rec.	Société
		I.(20%)	2.(10%)	3.(5%)		
01. Pédiatrie	600 z	120 z	60 z	30 z	1.200	1.800
02. Médecine Interne Ambul.	1000 z	200 z	100 z	50 z	2.000	3.000
03. Médecine Interne Hosp.	1800 z	350 z	180 z	100 z	3.600	4.800
04. Gynécologie	1800 z	350 z	180 z	100 z	3.600	4.800
05. Maternité avec CPN	500 z	G r a t u i t			1.000	2.000
06. Maternité sans CPN	1500 z	1.500 z	1500	1500 z	3.000	4.500
07. Chirurgie I	1000 z	200 z	100 z	50 z	2.000	3.000
08. Chirurgie II	2500 z	500 z	250 z	120 z	4.000	6.000
09. Chirurgie III	3000 z	600 z	300 z	150 z	5.000	7.000
10. Chirurgie IV (Urgence)	3500 z	700 z	350 z	180 z	6.000	8.000
11. TBC + Maladies chron.	750 z	←-----	150 z	-----→	1.500	2.200
12. TBC 2ème ligne	1500 z	←-----	300 z	-----→	3.000	4.500
13. Consultations privés	1200 z	←-----	200 z	-----→	1.200	2.500

- OBSERVATIONS:**
1. Pour les femmes ayant suivi les Consultations Pré-Natales, l'accouchement est gratuit à condition d'être membre de la Mutuelle.
 2. La circoncision est gratuite pour le bébé d'une semaine. Au-delà de cet âge, le tarif de la pédiatrie est d'application.
 3. Chambre privée: 200 z/Jour.

B **GROUPE 1:** Centres de Santé axe ISABE-MBARI
GROUPE 2: Centres de Santé de: Boto-Kasongo-Bombese-Bowazi-Bongbada et Bodeme
GROUPE 3: Centres de Santé de: Bobandu-Solumbe-Bowara-Bobisi Bombisa-Bowakara-Bombili.

Fait à Buamanda, le 24 Janv. 1988

POUR LE COMITE DE GESTION DE LA
ZONE DE SANTE RURALE BWAMANDA

POUR LES ADMINISTRATEURS
DU CDI - BWAMANDA Asbl

DR. PAUL CHIEL
Médecin-Chef

72

BETYNA NGILASE GBELE - DOLO
ADMINISTRATEUR-CHEF DE PROJET

Tarif des soins médicaux aux centres de santé à partir 1er février 88

REPUBLIQUE DU ZAIRE
 ZONE DE SANTE RURALE DE BWAMANDA
 CDI- BWAMANDA
 B.P. 11 GEMENA-

TARIF DES SOINS MEDICAUX AUX CENTRES DE SANTE A PARTIR DU 01er FEVRIER 88' *XXXXXXXXXXXXXXXXXXXXXXXXXXXX*

DESIGNATION DE SOINS	C A T E G O R I E			
	Recensé	N. Recensé	SOCIETES	
			Recensées	Non Recen.
01. Consultation Enfant+Elève	100,- z	200,- z	200,- z	400,- z
02. Consultation Adulte	200,- z	400,- z	400,- z	800,- z
03. Consultations Prénatales + Naissances désirables	200,- z	200,- z	200,- z	200,- z
04. Consultations Préscolaires	100,- z	100,- z	100,- z	100,- z
05. Fiches familiales	G R A T U I T			
06. Carte Recensement	←----- 10,00 z -----→			
07. Pharmacie Familiale (sachet nivaquine/aspirine)	←----- 20,00 z -----→			
Sachet SRQ, Condom *	←----- 20,00 z -----→			

08. Maladie chronique	C A T E G O R I E				
	Recensé	Membre de la Mu- tuelle	Non-Rec.	SOCIETES	
				Rec.	N. Rec
	750,- z	150,00 z	1500	1500	3000,

OBSERVATIONS:

- * Les frais de traitement de maladies chroniques ne couvrent pas les autres épisodes de maladies.
- * Les malades dont l'état nécessite une fiche d'hospitalisation au Centre de Santé de Référence (transfusion, perfusion, traitement filaire...) payent une deuxième quittance.

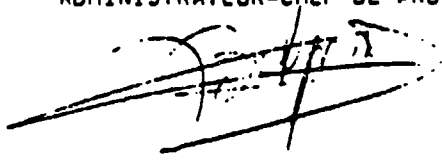
Fait à Bwamanda, le 24 Janv. 1988

POUR LE COMITE DE GESTION DE LA
 ZONE DE SANTE RURALE BWAMANDA

DR. BART CRIEL
 MEDECIN-CHEF DE ZONE

POUR LES ADMINISTRATEURS
 DU CDI - BWAMANDA Asbl

BETYNA NGILASE GEELE - DOLO
 ADMINISTRATEUR-CHEF DE PROJET



**ANNEX III
EXCHANGE AND INFLATION RATES**

Average Annual Inflation Rates in Zaire

1985	30.6%
1986	46.0%
1987	79.0%
1988	113.8%
1989	37.3%*

*1989 is an 8 month average, Jan.-Aug.

Source:1985: Zaire Population, Health and Nutrition Sector Review, Report No. 7013-ZR, World Bank, May 15, 1989.

1986: World Bank Office in Washington, D.C.

1987-1989: World Bank Office in Kinshasa, Zaire

Average Annual Exchange Rates: Zaires to US Dollars and Belgian Francs

\$1 U.S. 1 BF

1986	61.0	1.6	
1987	128.3	3.8	
1988	187.0	5.1	
1989	354.2	8.9	(Average for 8 months, Jan.-Aug.)
Nov. 89	430.0		

Source: 1986: World Bank Office, Washington, D.C.
1987-1989: World Bank Office in Kinshasa, Zaire

**ANNEX IV
DOCUMENTATION FOR BWAMANDA HEALTH INSURANCE PLAN**

1. Control Sheets for Stock of Membership Stamps

Control sheets are filled out in duplicate, with one copy kept by the administrator and one copy kept at the health center. Each time the health zone administrator makes a control visit to the health center during the inscription period, he updates both copies of the control form. The health center nurse then signs the copy kept by the administrator, and the administrator signs the copy kept by the health center nurse.

Example:

Date	Quant. Recv'd	Quant. Stock	Value	Quant. Sold	Value	Remain-der	Value	Signature
27/2	1,000	1,000	125000	---	---	1,000	125000	
07/3	---	---	---	193	24750	802	100250	
14/3	300	1,102	137750	426	53250	676	84500	

2. Membership Register for Bwamanda Insurance Plan

As each member pays the inscription price, the health center nurse registers the new member in a registration notebook, organized by village.

In the sample register page shown below, three numbers are assigned to each member. The first number ("Cen.") is the census number, given to each household during the medical census. The second number ("Order") is a sequential number given to each individual who joins the plan from a given village. Thus, there is a membership number "1" for each village. The third number is a number given to each family, again sequential within each village. The lack of unique membership numbers is an impediment to data analysis and evaluation of the insurance plan.

The field for "family composition" shows the individual's position in the family, e.g. "F" for father, "W1" for first wife, "W2" for second wife, "C" for child, etc.

The field for "attendance at the hospital" indicates the date of hospitalization and the service where the member was hospitalized (for example, "MIA" is Internal Medicine, Ambulatory).

Example:

No. Cen.	No. Order	fam-ily	Name	Age	Family Comp-osition	Old Memb. Number	Atten-dance at hosp.
35	1	1	Yulonago	60 yr	F	35	
	2		Kemba	50 yr	W1	35	
	3		Momongo	9 yr	C		
	4		Yuku	47 yr	W2		
25	5	2	Saolonga	29 yr	F	25	18/9 MIA

3. Hospitalization Notebook

Another important source of information about hospitalized patients is the hospitalization notebook (Cahier d'hospitalisation), filled out at the hospital admitting/billing office, when the patient registers. The notebook contains the patient's name, village, sex, date of hospitalization, hospital service, amount paid, and three identification numbers. The first ID number is a unique, sequential patient number. The second number is the census number from the household medical census. The third number is the insurance plan membership number, where the patient is a member of the Bwamanda Insurance Plan. A separate hospitalization notebook is kept for the maternity service.

4. Billing

After having paid the hospitalization fee, patients receive a receipt, which is stapled to the medical record, as proof of payment. Different color receipts are used for each payor category. A second copy of the receipt is kept in a receipt book at the admitting/billing office and used to calculate total receipts by payor category at the end of each day.

If a patient cannot pay the full price of a hospitalization, the patient may still be admitted if he or she can afford at least half of the hospitalization fee (it is rare that patients arrive at the hospital with less than half of the fee). A special "Advances" notebook is kept to register the payments of patients who cannot pay the full amount at the time of hospitalization. The procedures for collection of the remainder of the fee, once a patient has been hospitalized, are ad hoc. The responsibility usually falls to the nursing staff to get the patient to pay the remainder of his or her account. Hospital accounting procedures do not capture free care or bad debt, so these expenses are not reported in the hospital financial statements.

5. Financial Records and Reports for Insurance Plan

Two forms are attached which are used for recording financial information about the Bwamanda Insurance Plan. The first form ("Releve Mensuel Mutuelle 19..") is used to record monthly hospital and health center charges incurred for members of the insurance plan. The second form ("Situation Mutuelle 1988" -- also used for 1989) records all financial transactions (deposits, withdrawals, interest payments). Usually one line is used per month. The form is being revised, currently, to increase flexibility in recording transfers of funds.

Releve Mensuel

Z.S.R. - BWAMANDA
B.P. 11 GNA

RELEVÉ MENSUEL MUTUELLE 19...
Mois de: _____

HOPITAL GENERAL DE REFERENCE BWAMANDA					CENTRES DE SANTE	
N°	DESIGNATIONS	GROUPE	NOMBRE	MONTANT	Nbre Tot.	N/CENTRE
01	PEDIATRIE	I	34 x 200 Z	40.000 Z	53 x 1000 Z	.....
		II	36 x 200 Z	72.000 Z		52.500
		III	..... Z	..... Z		.....
		S/Total :	20	112.000		.....
02	CHIRURGIE 1	I	..x...Z	.... Z		.....
		II	..x...Z	.... Z		.....
		III	..x...Z	.... Z		.....
		S/Total :			.....
03	CHIRURGIE 2	I	..x...Z	.... Z		.....
		II	..x...Z	.... Z		.....
		III	..x...Z	.... Z		.....
		S/Total :			.....
04	CHIRURGIE 3	I	..x...Z	.... Z		.....
		II	..x...Z	.... Z		.....
		III	..x...Z	.... Z		.....
		S/Total :			.....
05	CHIRURGIE 4	I	..x...Z	.... Z		.....
		II	..x...Z	.... Z		.....
		III	..x...Z	.... Z		.....
		S/Total			.....
06	MEDECINE INTER- NE AMBULATOIRE	I	..x...Z	.... Z		.....
		II	..x...Z	.... Z		.....
		III	..x...Z	.... Z		.....
		S/Total			.....
07	MEDECINE INTER- NE HOSPITALISA- TION	I	..x...Z	.... Z		.....
		II	..x...Z	.... Z		.....
		III	..x...Z	.... Z		.....
		S/Total :			.....
08	GYNECOLOGIE	I	..x...Z	.... Z		.....
		II	..x...Z	.... Z		.....
		III	..x...Z	.... Z		.....
		S/Total :			.....
09	MATERNITE		..x...Z	.... Z		.....
10	TBC: 1ère ligne		..x...Z	.... Z		.....
11	TBC: 2ème ligne		..x...Z	.... Z		.....
TOTAL			.....	..... Z		.....
TOTAL GEN. (HGR + C.S.)						.....

H.G.R. - BWAMANDA
Proportion Affiliés
par groupe:
Total:
Groupe 1:
Groupe 2:
Groupe 3:

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