



**USAID**  
FROM THE AMERICAN PEOPLE



Partners for Health Reformplus

# **Determinants of The Financial Stability of Mutual Health Organizations: A Study in the Thies Region of Senegal**

---

*September 2005*

---

Prepared by:

---

**Chris Atim, PhD**  
Consultant  
Abt Associates Inc.

**Francois Diop, PhD**  
Abt Associates Inc.

**Sara Bennett, PhD**  
Abt Associates Inc.

This document was produced by PHRplus with funding from the US Agency for International Development (USAID) under Project No. 936-5974.13, Contract No. HRN-C-00-00-00019-00 and is in the public domain. The ideas and opinions in this document are the authors' and do not necessarily reflect those of USAID or its employees. Interested parties may use the report in part or whole, providing they maintain the integrity of the report and do not misrepresent its findings or present the work as their own. This and other HFS, PHR, and PHRplus documents can be viewed and downloaded on the project website, [www.PHRplus.org](http://www.PHRplus.org).



Abt Associates Inc.  
4800 Montgomery Lane, Suite 600 ■ Bethesda, Maryland 20814  
Tel: 301/913-0500 ■ Fax: 301/652-3916

*In collaboration with:*

Development Associates, Inc. ■ Emory University Rollins School of Public Health ■ Philoxenia International Travel, Inc. ■ PATH ■ Social Sectors Development Strategies, Inc. ■ Training Resources Group ■ Tulane University School of Public Health and Tropical Medicine ■ University Research Co., LLC.

*Order No TE 081*





### **Mission**

*Partners for Health Reformplus is USAID's flagship project for health policy and health system strengthening in developing and transitional countries. The five-year project (2000-2005) builds on the predecessor Partnerships for Health Reform Project, continuing PHR's focus on health policy, financing, and organization, with new emphasis on community participation, infectious disease surveillance, and information systems that support the management and delivery of appropriate health services. PHRplus will focus on the following results:*

- ▲ *Implementation of appropriate health system reform.*
- ▲ *Generation of new financing for health care, as well as more effective use of existing funds.*
- ▲ *Design and implementation of health information systems for disease surveillance.*
- ▲ *Delivery of quality services by health workers.*
- ▲ *Availability and appropriate use of health commodities.*

### **September 2005**

#### **Recommended Citation**

Atim Chris, Francois Diop, and Sara Bennett, September 2005. *Determinants of the Financial Stability of Mutual Health Organizations: A Study in the Thies Region of Senegal*. Bethesda, MD: The Partners for Health Reformplus Project, Abt Associates Inc.

For additional copies of this report, contact the PHRplus Resource Center at [PHR-InfoCenter@abtassoc.com](mailto:PHR-InfoCenter@abtassoc.com) or visit our website at [www.PHRplus.org](http://www.PHRplus.org).

**Contract/Project No.:** HRN-C-00-00-00019-00

**Submitted to:** USAID/Senegal

and: Karen Cavanaugh, CTO  
Health Systems Division  
Office of Health, Infectious Disease and Nutrition  
Center for Population, Health and Nutrition  
Bureau for Global Programs, Field Support and Research  
United States Agency for International Development



# Abstract

The financial sustainability of community-based health insurance schemes has been debated in the literature, given concerns that small risk pools, voluntary membership, and weak financial systems might jeopardize the schemes. The research reported here investigates the main factors influencing the financial stability of mutual health organizations (MHOs) in the Thies region of Senegal. The study covered the four-year period 2000-03 and comprised a household survey component, a MHO survey component, and a provider survey component encompassing all 27 schemes in the Thies region that have been fully functional for at least two years. Despite growth in the number of MHO members and beneficiaries during the four years, scheme financial performance overall was poor. The primary factors explaining this poor performance were: problems of adverse selection, low dues recovery, unrecovered loans (particularly for expenditures at the hospital level), frequent changes to benefit packages without concurrent changes to premiums, and limited use of financial tools. In order to promote MHO sustainability, greater support is needed for the design of schemes, and particularly for their management. Reinsurance, which helps protect against random risk, may have a role to play in the future, but the immediate focus should be on stronger financial management.

---



# Table of Contents

Acronyms .....	v
Acknowledgments .....	vii
Executive Summary .....	ix
1. Introduction and Objectives of the Study .....	1
1.1 Background .....	1
1.2 Objectives and Motivation for Research .....	2
1.3 Country Context .....	3
1.3.1 Organization and Financing of Senegal’s Health Care System .....	3
1.4 Definitions, Conceptual Framework, and Research Questions .....	6
1.4.1 Research Questions .....	8
2. Methodology .....	11
2.1 Sampling for MHO Survey .....	11
2.2 Sampling for Provider Survey .....	12
2.3 Data Collection, Processing, and Analysis .....	13
3. Financial Stability of MHOs in the Thies Region .....	15
3.1 Categorizing MHOs by Financial Performance .....	15
3.2 MHO Size and Financial Performance .....	15
3.3 Reserve Fund .....	17
3.3.1 Adequacy of Reserve Funds .....	18
4. MHO Design .....	21
4.1 Gathering Information for Scheme Design .....	21
4.1.1 Information-gathering Methods Used by Schemes .....	21
4.1.2 Impact of feasibility studies on financial performance .....	22
4.2 Design Parameters .....	23
4.2.1 Dues .....	23
4.2.2 Services/benefit packages .....	24
4.2.3 Managing Financial Risk .....	25
5. MHO Management .....	27
5.1 Dues: Collection Mechanisms, Periodicity, Arrears and Recovery Rates .....	27
5.2 Loans, debt, and debt recovery .....	29
5.2.1 Non-health insurance services of MHOs and their impact on performance .....	29
5.2.2 Repayment of health care loans .....	30

5.2.3	Repayment of loans for mosquito nets and income-generation activities .....	32
5.2.4	Mechanisms to absorb or reduce impact of bad debts .....	33
5.2.5	Debt owed to providers.....	33
5.3	Skills, Competence of Management, MHO Structures .....	34
5.4	MHO Marketing/Promotion .....	35
5.5	Financial Management .....	36
5.5.1	Impact of use of financial tools on MHO financial performance .....	37
5.6	Remuneration and Volunteerism .....	38
5.7	Mismanagement and Misappropriation .....	39
6.	Provider Environment.....	41
6.1	Introduction .....	41
6.2	Clinical/Prescription Practices and Provider Behavior .....	41
6.2.1	Drug availability .....	41
6.2.2	Providers' role in advising potential MHO members .....	42
6.3	Financial Relations between Provider and MHO .....	42
6.3.1	Provider tariffs.....	42
6.3.2	Provider payment mechanism.....	43
6.3.3	Provider revenue from MHOs .....	43
7.	Member Characteristics and Beneficiary Behavior .....	45
7.1	Household Participation and Risk Profile .....	45
7.2	Capacity to Prepay and Regularity of Contributions.....	47
7.3	Health Care Utilization.....	48
7.4	Loans and Debt Repayment.....	50
8.	Conclusions on Financial Stability of MHOs .....	51
8.1	Adverse Selection.....	51
8.1.1	In Thies we see that: .....	51
8.2	Weak Financial Management of Schemes.....	52
8.2.1	Low Dues Recovery Rates.....	52
8.2.2	Loans for Hospital Services and other types of Loans .....	52
8.2.3	Changes to Benefit Packages.....	53
8.3	Financial Management tools and training .....	53
8.4	Factors which did not affect financial performance .....	53
9.	Recommendations .....	55
	Annex A: Drug Stock-outs .....	57
	Annex B. Provider Tariffs .....	59
	Annex C: References .....	61

---

## List of Tables

Table 1.1. Selected national and health system indicators 2002.....	3
Table 1.2. Structure of the health service delivery system in Senegal.....	4
Table 1.3. Inventory of MHOs Sénégal 1997–2003.....	6
Table 2.1. Sampling strategy for MHOs.....	12
Table 2.2. Sampling strategy for health care providers.....	12
Table 3.1. Mean number of members and beneficiaries, by MHO financial performance category....	17
Table 3.2. Reserve fund account.....	17
Table 3.3. How was reserve fund constituted?.....	18
Table 3.4. Evolution of reserve accounts 2000–04.....	19
Table 4.1. Methods by which MHOs gathered information about scheme design.....	21
Table 4.2. Percent of MHOs having done initial feasibility study and later financial performance....	22
Table 4.3. Basis on which dues level were first fixed.....	23
Table 4.4. Number of, and reasons cited for, modifications in dues levels, 2000–03.....	23
Table 4.5. Services covered by MHOs initially and currently: Percent coverage and number of MHOs.....	24
Table 4.6. Schemes adopting risk-management practices at time of initial scheme design.....	25
Table 5.1. Periodicity of dues collection.....	27
Table 5.2. Rate of dues recovery by MHO financial performance category.....	28
Table 5.3. Methods used for collecting dues.....	29
Table 5.4. Non-health insurance services of MHOs, by MHO financial performance category.....	30
Table 5.5. Average health loan recovery rate, by MHO, 2000-04.....	31
Table 5.6. Total MHO health loan debt as percent of total annual expenses.....	31
Table 5.7. Member health loan debts to MHO of six months, one year, and more than one-year duration.....	32
Table 5.8. Mechanisms used by MHOs to absorb or reduce impact of bad debt.....	33
Table 5.9. Educational level of HMO managers.....	34
Table 5.10. Training in MHO management and operations.....	34
Table 5.11. MHO marketing/promotion activities.....	35
Table 5.12. Media and channels used for MHO marketing/promotion activities.....	35
Table 5.13. Management/administrative tools.....	36
Table 5.14. Elements that MHOs incorporate into budgeting.....	37
Table 5.15. Percentage of MHOs using financial tools, by financial performance.....	37
Table 5.16. Remuneration of managers.....	38
Table 5.17. Remuneration of zonal delegates and other persons.....	38
Table 5.18. Reported cases of fraud, abuse, and misappropriation of funds.....	39
Table 6.1. Providers' personnel giving advice/information on advantages of MHO.....	42
Table 6.2. Provider payment mechanisms at health posts and health centers.....	43
Table 6.3. Revenue from MHOs as percentage of total PHC provider revenue.....	44
Table 7.1. Capacity to pay: Incidence of premium contributions on HMO member households in the Thies region.....	47
Table 7.2. Regression results: Regularity of contributions among nuclear family units that are MHO members in the Thies Region.....	48
Table A1. Average duration of provider stock-outs during last 6 months of 2003 of selected drugs: iron, paracetamol, chloroquine, and amoxicillin.....	57
Table B1. Provider tariffs, 2000–03.....	60

---

## List of Figures

Figure 1. 1. The key actors influencing financial stability of MHOs.....	9
Figure 3.1 Aggregate number of mutuelle members by old and new mutuelles, Thies 2000-2003 .....	16
Figure 3.2 - Average number of beneficiaries per mutuelle by old and new mutuelles, Thies 2000-2003 .....	16
Figure 5.1. Combined average annual dues recovery rates for 23 MHOs, 2000–03 .....	28
Figure 5.2. Average recovery rate of health loans by MHOs, by year.....	30
Figure 7.1. Proportion (%) of individuals within MHO-enrolled households who are beneficiaries of MHO services in the Thies region, by the category of MHO.....	46

# Acronyms

<b>CBHI</b>	Community-based Health Insurance
<b>FCFA</b>	<i>Franc de la Communauté Financière Africaine</i>
<b>GDP</b>	Gross Domestic Product
<b>GRAIM</b>	<i>Groupe de Recherche et d'Appui aux Initiatives Mutualistes</i>
<b>HH</b>	Household
<b>IGM</b>	Initial General Assembly
<b>IPM</b>	<i>Institution de Prevoyance Maladie</i>
<b>IPRES</b>	<i>Institution de Prévoyance et de Retraite au Sénégal</i>
<b>PHC</b>	Primary Health Care
<b>PHR<sub>plus</sub></b>	Partners for Health Reform <sub>plus</sub>
<b>SPSS</b>	Statistical Package for Social Science
<b>WHO</b>	World Health Organization
<b>USAID</b>	United States Agency for International Development



# Acknowledgments

The authors would like to thank all members of the team that undertook the field surveys as well as other parties and individuals who played important roles during this research on MHOs in the Thies region:

- ▲ Mr Sarr and his colleagues, who helped with finalizing the survey instruments, testing them, revising them, overseeing their administration in the field; then producing and cleaning the data tables;
- ▲ All the field enumerators, assistants, and supervisors who actually administered the instruments and collected the data;
- ▲ All the staff of MHOs and providers, as well as households who kindly participated in the surveys;
- ▲ The data entry clerks; and
- ▲ Franck Mampouya M'bama for his assistance with the preliminary data analysis including production of cross tabulations.

We are equally grateful to the Partners for Health Reform *plus* support staff – Salamata Ly, Raj Gadhia, and Kate Stillman – who helped with the vital coordination and logistical organization work.

We are also thankful to Ricardo Bitran for undertaking a technical review of the first draft report and offering the authors some valuable comments; as well as Alan Fairbank of Abt Associates for his valuable role in the early conceptualization of the research and offering some useful reviewer comments on the draft report.



# Executive Summary

---

## Background and Objectives

Community-based health insurance schemes, also known as mutual health organizations (MHOs) or *mutuelles*, offer the prospect of lower financial barriers and financial risk protection for those seeking care. They hold particular promise for populations outside of formal sector employment. However, there are substantial concerns about the financial sustainability of MHO schemes, due to a number of factors:

- ▲ MHOs may have small risk pools which mean that relatively few expensive cases could damage MHO finances;
- ▲ MHOs generally allow individual and voluntary membership, which may lead to adverse selection;
- ▲ MHOs are often said to have weak financial management systems, which may leave them particularly prone to fraud and abuse.

The primary objective of the research reported here was to determine the main factors influencing the financial stability of MHOs in the Thies region of Senegal.

This research was partly motivated by a request from the regional body responsible for MHO promotion (*Groupe de Recherche et d'Appui aux Initiatives Mutualistes*, or GRAIM) for advice on the establishment of a reinsurance scheme. Accordingly, the research was also designed to investigate the feasibility and desirability of developing reinsurance in Thies.

---

## Methods and Analysis

The research was undertaken in the Thies region of Senegal, where there are currently 40 active MHOs. Twenty-seven of these have been fully functional for at least two years and were included in the study.

The conceptual framework underlying the research suggests that four main factors affect the financial stability of MHOs, namely:

- ▲ The design features of the MHO;
- ▲ The efficiency and effectiveness with which the MHO is managed;
- ▲ The behavior and characteristics of MHO members and beneficiaries;
- ▲ The provider environment (including factors such as provider tariffs, clinical practices, and reputation for quality care).

Three main data collection instruments were developed and applied in order to collect information on these different factors. They were: a MHO survey, a household survey, and a provider survey. Data collection was carried out between September and November 2004. For the MHO survey, the study aimed to collect data for the past four calendar years (2000–03).

Based on the data on the financial performance of MHOs, three different strata for analysis were created: (i) MHOs with consistently good financial performance (N=6), (ii) MHOs with consistently poor financial performance (N=7), and MHOs with mixed financial performance (N=10).<sup>1</sup> Scheme design characteristics, scheme management, and member characteristics and behavior were analyzed according to these three strata.

---

## Scheme Financial Performance

Despite growth in the number of scheme members and beneficiaries during the past four years, scheme financial performance overall was relatively poor. Poorer performing schemes typically had a smaller number of beneficiaries than better performing ones – but there were only minimal differences in the number of scheme members. This implies that, among the poorer performing schemes, members typically enrolled fewer of the members of their household. This may be a sign of adverse selection. Most schemes had some kind of reserve fund, but only a few had sufficient money in the reserve fund to cover nine months of scheme health expenditures (the requirement imposed by recent regulations).

---

## Scheme Design

About 60 percent of the studied schemes had conducted a formal feasibility study, and those with better financial performance were more likely to have done so. The pattern of benefit packages had changed markedly over the years: Schemes had typically expanded from covering only (or predominantly) hospitalizations to offering more primary care benefits. While there were 60 changes in benefit packages during the four years looked at by the study, there were only 12 changes in premiums charged. While relatively few schemes started out by imposing waiting periods, mandatory family registration, or applying co-payments, most did at the time of the study.

---

## Scheme Management

Dues collection rates were very low (63 percent overall) and schemes with poor financial performance had a markedly poorer rate of dues collection (53 percent) than better financial performers (73 percent). Overall low payment of dues was corroborated by the household survey. However household survey findings suggest that low rates of dues payment were not caused by the fact that premiums are unaffordable for households. Indeed, dues were paid more regularly by households living in the poorest department, and by female-headed households.

Fifty-six percent of schemes offer loans to their members to cover the costs of hospitalization services that are not included in the benefit package. Actually, this is not a formal loan, but rather a result of the way in which the co-payment system is managed. The main hospital contracted by MHOs requires that the MHOs pay the full bill for all insured persons; any co-payment owed by the patient must then be recovered by the MHO. The average recovery rate for such loans was 50 percent. The better performing

---

<sup>1</sup> Four MHOs had such inadequate financial data that it was not possible to classify them.

MHOs were less likely than poorer performers to offer such loans. They were also less likely to offer loans for income-generation activities, which also had a very poor recovery rate. Problems of bad debt related to health loans were concentrated among a few MHOs. In two cases, health loans amounted to more than 75 percent of scheme expenditure and two schemes had a significant burden of bad debt. Only two of the 27 MHOs studied had fixed repayment schedules for loans taken by members.

MHO data on even relatively simple indicators (such as expenditures, number of beneficiaries, and service utilization) appeared somewhat incomplete and unreliable, and MHOs' use of management and administrative tools (such as registers of members and dues paid) was rather limited. Better performing MHOs appeared to make somewhat greater use of such administrative tools.

---

## **Provider Environment**

MHOs had in general negotiated with providers to get preferential rates for their scheme members when seeking care. Provider tariffs had been remarkably stable during the period of study.

Providers appeared particularly likely to encourage the very poor and those with serious illnesses to join MHOs, and this further raised concerns about adverse selection problems.

---

## **Member Characteristics and Beneficiary Behavior**

Analysis of the household survey data confirmed the suggestive evidence cited above on adverse selection. Households were more likely to register in the scheme the higher the number of women of childbearing age in the house. Households whose head was a member of a MHO registered on average only 72 percent of household members, likely elderly men, women of childbearing age, individuals with chronic illness, and individuals who had self-reported poorer health status. Moreover, among the schemes with good financial performance, a relatively greater proportion of household members were registered than among schemes with poor financial performance (i.e., selection was less in better performing schemes).

The schemes with good financial performance typically had a high number of health care visits (0.848 visits per beneficiary per annum) compared to the poorer performers (0.524 visits per beneficiary per annum). However, better performing schemes had relatively few hospitalizations (3.1 per 1000 beneficiaries per annum), compared to schemes with less good financial performance.

While the household survey found MHO members who were indebted to the scheme, this appeared to be a localized phenomenon. Only three of the 27 MHOs had more than 17 percent of their members indebted to the MHO.

---

## **Conclusions and Recommendations**

Given the relatively small size of the MHO sample in the study and the variable quality of the data available, the findings of the study should be interpreted with some degree of caution.

Overall MHOs in the Thies region seem subject to a considerable degree of financial instability, and some seem structurally unsound in financial terms. The research suggests a number of underlying reasons for this instability, namely:

- ▲ Problems of adverse selection

- ▲ Low dues recovery
- ▲ Unrecovered loans, particularly for expenditures at the hospital level
- ▲ Frequent changes to benefit packages without concurrent changes to premiums
- ▲ Limited use of basic financial tools
- ▲ Many of these reasons relate to weak financial management of the MOHs.

A number of factors were found *not* to be important determinants of financial instability, including:

- ▲ Changes in provider tariffs
- ▲ Fraud and abuse
- ▲ Small risk pools

Based upon these findings, the development of a reinsurance scheme does *not* appear to be an immediate priority in order to secure greater financial stability for MHO schemes in Thies. Reinsurance protects schemes against random sources of risk, whereas most of the sources of financial risk identified in Thies are non-random, relating instead to systemic problems of scheme design and management. Instead, it is suggested that the GRAIM and schemes in the Thies region work to:

- ▲ Prevent adverse selection through the consistent application of risk reduction mechanisms (such as enforcement of requirements that all household members register with the MHO);
- ▲ Ensure that premiums stay in line with benefit packages by recalculating premiums each time benefit packages change;
- ▲ Promote more regular payment of dues by members through further sensitization efforts and reviewing the mechanisms that schemes use to collect dues;
- ▲ Reconsider the co-payments charged at the hospital level, given the problems involved in getting members to pay these co-payments, and/or institute and enforce clear regulations regarding repayment of loans for health services.
- ▲ Promote more consistent collection and analysis of key indicators on service utilization, ratio of members to beneficiaries, dues payment rates, etc.

As noted above many of the problems identified relate to weak MHO management and skills. Both the GRAIM and other partners need to continue to develop the skills of MHO managers and the consistent application of basic management tools.

# 1. Introduction and Objectives of the Study

## 1.1 Background

Community-based health insurance schemes (CBHI), also known as mutual health organizations (MHOs) or *mutuelles*<sup>2</sup> have attracted increasing interest in recent years. This is partly because of the context of the health financing policy debates that accompanied and followed the introduction of user fees and other reforms in the health sector of developing countries (Akin et al. 1987, Evans et al. 1993), Shaw et al. 1995, Creese et al. 1995). But a related, and more immediate reason is because they are seen by many as a potential solution to the problems of health financing, facing at least certain sections of the population in such countries, usually the rural and informal sectors (e.g., see Dror and Jaquier 1999, Preker et al. 2002).

The World Health Organization's (WHO's) Commission on Macroeconomics and Health agreed that such a health financing strategy "would offer a degree of risk spreading, so that households would not face financial catastrophe in the face of adverse health shocks to household income" (WHO 2000: 61). The World Bank has similarly endorsed this strategy for both mobilizing extra resources and protecting vulnerable populations against the financial consequences of ill health (Preker et al. 2002).

### Box 1. Community-based Health Insurance Schemes

CBHI schemes have a common goal of finding ways for communities to meet their health financing needs through pooled revenue collection and resource allocation decisions made by the community. CBHI schemes are a form of insurance – allowing members to pay small premiums on a regular basis to offset the risk of needs to pay large fees upon falling sick. They are always non-profit and typically based on concepts of mutual aid and solidarity. CBHI schemes may develop around geographical entities (such as villages), professional groupings, or health facilities.

Source: From Bennett, Gamble Kelley, and Silvers 2004

However, it has also been pointed out that the results from the few studies available on this subject have so far been less optimistic (see Jutting 2001, citing Bennett et al. 1998, Criel 1998, and Atim 1998). Jutting points in particular to the issues of small risk pools, problems of adverse selection, heavy dependence on subsidies, financial and management difficulties, and "overall sustainability" (Jutting 2001:14).

Ekman, in his systematic review of the evidence to date on CBHI schemes in developing countries, notes that the available evidence is limited in scope and questionable in quality (Ekman 2004:1). His

---

<sup>2</sup> While *mutuelle* and MHO are equivalent terms (in French and English respectively) that describe the same phenomenon, CBHI is a more generic term that describes all such alternative forms of non-profit health insurance schemes initiated by communities, providers, enterprises, and others to cater for the health care financing needs of deprived populations especially in the rural and informal sectors. In this study the terms are used interchangeably.

review did not directly address sustainability, but he did conclude from that review that there was “strong evidence” that schemes provided some financial protection by reducing out-of-pocket spending, “moderate strength” evidence that such schemes improve cost recovery, and “weak or no evidence” that they have an effect on quality or efficiency of health care delivery. Particularly notable perhaps was the conclusion that, “in absolute terms, the effects are small and schemes serve only a limited section of the population” (Ekman 2004:1).

Lafond (1999) notes that sustainability comprises not only financial sustainability, but also adequate organization and management, planning, and policy making. However, in the case of MHOs, concerns about financial sustainability are particularly acute. Factors intrinsic to many MHOs which may affect their financial sustainability include:

- ▲ Small risk pools which mean that a relatively small number of expensive cases could damage MHO finances;
- ▲ Reliance on individual and voluntary membership which means that adverse selection may occur, whereby those who are likely to use health services more heavily (such as the chronically ill) are more likely to join;
- ▲ Weak financial management systems which may leave MHOs particularly prone to fraud and financial abuse.

There has been recent interest in the potential of social reinsurance for helping to stabilize the finances of MHOs (Dror and Preker 2002, Fairbank 2003), a trend that, as described below (Section 1.2), was partially responsible for the initiation of this research. Fairbank (2003) discussed potential sources of financial instability of CBHI schemes, arguing that reinsurance would only be effective in protecting schemes from random sources of risk, whereas there were multiple non-random factors (such as scheme management) which substantially influence financial stability. Furthermore, in order to promote scheme sustainability, it was important to have a clearer empirical understanding of the sources of financial instability.

The literature so far available on social reinsurance has not been based on empirical evidence on the determinants of financial sustainability of CBHI schemes. In other words, despite all the arguments about the sustainability (or lack thereof) of CBHI schemes, there is very little empirical evidence from research to enlighten this debate.

While MHOs do typically lack the kind of rigorous regulations associated with private for-profit insurance schemes, they rely considerably on social networks and trust which, some have argued, may counter-balance the weaknesses identified above (Franco et al. 2005).

Whether MHOs will become part of a lasting solution to the health care financing problems of Africa or not depends on their ability to continue to develop, expand and sustain themselves over the course of time. They will have to prove that they are not simply community development “meteors” that are destined to shine brightly for a while but are ultimately not sustainable.

---

## 1.2 Objectives and Motivation for Research

The primary objective of this research was to determine the main factors that influence the financial stability of MHOs in the Thies region of Senegal.

The region of Thies was selected because it is the pioneer region for the development of MHOs in Senegal and is the site of a good number of functioning MHOs, sufficiently old to provide data going back over a number of years. Moreover, promoters and scheme managers in the Thies region became interested in the concept of reinsurance as a means to secure greater financial sustainability for their schemes and asked the Partners for Health Reform *plus* (PHR*plus*) to assess whether the development of a social reinsurance scheme would make sense within their context. Results of this analysis, therefore, will be particularly useful to determine how to reinforce the financial viability of MHOs in the region and perhaps their most immediate use will be by the *Groupe de Recherche et d'Appui aux Initiatives Mutualistes* (GRAIM), a regional body that supports the MHO development and offers ongoing technical advice to schemes in Thies. It is hoped that findings also will inform schemes throughout Senegal and elsewhere.

---

### 1.3 Country Context

Table 1.1 gives basic population, as well as health status and system financing indicators for Senegal in 2002. It can be seen that a significant amount of resources dedicated to health come from private out-of-pocket spending.

**Table 1.1. Selected national and health system indicators 2002**

Total population	10,095,000
Gross domestic product (GDP) per capita (Intl \$)	1,202
Life expectancy at birth m/f (years)	54.0/57.0
Healthy life expectancy at birth m/f (years)	47.1/48.9
Child mortality m/f (per 1,000)	142/132
Adult mortality m/f (per 1,000)	350/280
Total health expenditure per capita (Intl \$)	62
Total health expenditure as % of GDP	5.1
Private expenditure on health as % of total expenditure on health	54.8
Prepaid plans as % of private expenditure on health*	3.5
Out-of-pocket expenditure on health as % of private expenditure on health	96.50

Source: WHO 2005

\* It is not clear if the WHO survey included MHOs as well as Institutions de Prevoyance Maladie and similar institutions within this category. See discussion below.

---

#### 1.3.1 Organization and Financing of Senegal's Health Care System

##### Organization

The public sector health system in Senegal is organized into a pyramid of five levels, which correspond to five reference levels.<sup>3</sup>

---

<sup>3</sup> Officially, in Senegal, the health pyramid is organized into four levels, combining the health post and health center levels into a single level. However, it seems analytically more convenient to regard these as two separate levels especially given their types of care and differential coverage areas.

**Table 1.2. Structure of the health service delivery system in Senegal**

Level (in ascending order)	Type of health care dispensed (2000)	Geographical coverage (2000)	Number of units: Total (2000)	Number of units: Thies (2002)
Health hut	First aid/ health education/ village pharmacies	Village	1384	244
Health post/ Maternity clinic	Primary health care	Rural community/ urban quarter	768	125
Health center	Secondary care	Medical district	52	9
Regional hospitals	Tertiary care	Region	10	2
Teaching hospitals	Specialist care	National	2	0

Sources: Concertation (2000); data on Thies from Diop (2005)

Ever since the first health committees emerged in the Pikine department in the 1970s, progressive reforms have expanded throughout the country, especially with the primary health care (PHC) strategy in the 1980s, the Bamako Initiative in the 1990s, and the administrative and political decentralization instituted in 1997 including the transfer of responsibility for PHC to the local collectives. In 1998, a hospital program reform was initiated that aimed at transforming public hospitals into truly public establishments, with the population represented on the boards of directors.

### **Financing**

The state continues to fund investments and salaries in the public health sector. However, structural adjustment programs were adopted in the 1980s, and since then the health care financing system has progressively moved toward greater public participation, initially through the Bamako Initiative in the public sector, and then through the introduction and widespread application of user fees at hospitals, as well as the development and expansion of a private sector (including pharmacies) based on full cost recovery. User fees have become a universal tool in the public sector: for cost recovery at the PHC level and as part of the process of decentralization of public hospitals.

### **System of Social Protection**

The formal regime of social protection in Senegal affects only formal sector employees in the public service, the private sector, and retired persons. These formal sector groups and their families constitute probably around 10-15 percent of the total population of the country.<sup>4</sup> The institutions that afford such protection include the Social Security Fund (*Caisse de Sécurité Sociale*), the Pension Fund (*Institution de Prévoyance et de Retraite au Sénégal* or IPRES), and the Sickness Funds for the private sector (*Institution de Prévoyance Maladie* or IPMs).<sup>5</sup>

<sup>4</sup> Griffin and Shaw (1995) estimated 13 percent coverage in the mid-1990s, but it is not certain if their figure included the *Institution de Prévoyance Maladies*.

<sup>5</sup> IPMs are health insurance organizations mandated by law, by which any enterprise with 10 or more workers must provide for at least 40 percent and up to 80 percent of the health care costs of its employees. This is to be done through the setting up of an IPM either alone or jointly with other enterprises. In practice the IPMs are run predominantly by the workers themselves with financial contributions from both employees and the employers as required by the law. The trend is towards inter-enterprise IPMs to obtain large pools and enhance viability.

Under a 1972 legislative decree,<sup>6</sup> this system of social protection entitles public sector employees and their families to reimbursement by the state for up to 80 percent of health care costs, excluding drugs costs, which are the responsibility of the employee. This system affects 66,000 public employees and their families, estimated at 300,000 (both employees and families combined) (République du Sénégal Ministère de la Santé 2004).

Similarly, legislation passed in 1975 provides that IPMs in the private and state (parastatal) enterprise sectors must cover between 40 percent and 80 percent of the health care costs of employees. In practice, most employers cover about the same percentage as the state does for its employees, i.e., about 80 percent of such costs, but including drugs costs in this case.<sup>7</sup> This system affects 120,000 employees and their families, making altogether about 700,000 persons (République du Sénégal Ministère de la Santé 2004).

Finally, since 1975, retirees from both public and private sectors benefit from a contributive health insurance coverage, by which the IPRES retains a percentage of retirees' pension payments and provides partial health care coverage for the retirees.

There is a private commercial health insurance sector but its coverage is limited to more affluent parts of the population and is estimated to cover only around 70,000 people altogether (République du Sénégal Ministère de la Santé 2004).

### **Development of MHOs**

Other than the groups enjoying some degree of formal social protection described above, the population (i.e., the vast majority in the rural economy and urban informal sector, which is well over 80 percent and perhaps nearer to 90 percent of the population) is expected to pay for health care at the point of use, although state health facilities enjoy subsidies for investments and salaries. Cost recovery is practiced at the PHC and lower levels for drugs and supplies, and fees are also charged at higher care levels under the decentralization and hospital reform programs.

This situation has led to the emergence, in many cases spontaneously, of MHOs in rural and urban informal areas. MHOs in Senegal began around 1989 in Thies with the setting up of the Mutuelle of Fandene. Since then, they have spread, first to the surrounding two other departments of Thies (Tivaouane and Mbour) and then to the rest of Senegal. The majority are concentrated around Thies, Dakar, and Kaolack.

A survey in 2003 by the *Concertation*<sup>8</sup> found 136 MHOs, of which 79 were fully functional, 48 were either in the planning or gestational phase, and nine were having difficulties (see Table 1.3). The total membership was given as 42,235, with a total beneficiary population of 308,563 (Ndiaye 2004).

---

<sup>6</sup> Le décret N°72-215 du 7 mars 1972 relatif à la sécurité sociale des fonctionnaires.

<sup>7</sup> La loi du 30 avril 1975 relative aux Institutions de Prévoyance Sociales et le décret N° 75-895 du 14 août 1975 portant organisation des IPM d'entreprise ou inter entreprise et rendant obligatoire la création de ces dernières.

<sup>8</sup> The *Concertation* is an umbrella group of MHO promoters, technical support agencies, coordinating bodies, and similar institutions that meets every two years to review and analyze the state of the MHO movement in West and Central (Francophone) Africa and to discuss strategies for promoting the further development of these organizations. Based in the International Labor Organization's STEP (Strategies and Tools against Social Exclusion and Poverty) program offices in Dakar, Senegal, the Concertation has a coordinator, website ([www.concertation.org](http://www.concertation.org)), and programs supported by the member agencies.

**Table 1.3. Inventory of MHOs Sénégal 1997–2003**

Region	Functioning MHOs		Situation in 2003				Total
	1997	2000	Functional	Gestational	Planned	In difficulty	
Dakar		10	23	9	8	4	44
Diourbel			4	5		1	10
Fatick			3	1			4
Kaolack		1	8	1	1	1	11
Kolda					1		1
Louga			6	2			8
St Louis		2	7	2			9
Tambacoun			1	1	2	1	5
Thiès		15	27	6	4	2	39
Ziguinchor			3	3	2		8
Sénégal	19	28	79	30	18	9	136

Sources : Concertation (1997, 2000, 2003)

The nine MHOs deemed by the Concertation’s inventory surveys to be having problems by 2003 meant that the MHOs had been forced by *serious financial* or other difficulties to either suspend offering services or even cease functioning altogether. Other MHOs may not be financially healthy, but if they had not suspended services or ceased to function, they would not have been placed among the nine.

The fragile financial state further highlights the importance of determining the key factors that account for such instability in MHO finances.

It is important to bear in mind when reading this report that MHOs operate within a health system context dominated by public provision and a fairly dynamic and growing private sector, that the public sector remains significantly subsidized by the state, and that MHOs and similar institutions are not paying the full marginal cost of the services but only the “cost recovery” component in public institutions. Private non-profit facilities like the Catholic St Jean de Dieu hospital in Thies also are subsidized by charitable donations received from abroad for investments costs and some supplies, although they would insist that they practice full cost recovery.<sup>9</sup> Only at private for-profit facilities do MHOs pay, presumably, the full marginal costs; MHOs do contract with such facilities, especially at the PHC level.

---

## 1.4 Definitions, Conceptual Framework, and Research Questions

For the purposes of this study, the financial stability of a MHO is defined as “the equivalence of all income and all expenses (by accounting period) when averaged over many (several) accounting periods.” Since part of income is allocated to reserves (as an expense), the minimum level of reserves needed (given membership and annual benefit costs) would be determined independently of, and in addition to, the determination of “equivalence.”

---

<sup>9</sup> In any case, there is a subsidy to MHOs using such facilities because St Jean de Dieu offers substantial discounts to MHOs and their members.

It should be noted that, perhaps unlike many small businesses, MHOs, in principle at least, typically aim for immediate financial stability, and they aim at raising sufficient revenue to cover their projected expenses on a year-by-year basis. In other words, they do not assume that it is normal to take losses in early years before attaining financial equilibrium and surpluses in later years. This means that MHO often wait for several years from the time they start paying their contributions before they begin offering health services, having accumulated a good enough ‘cushion’ or reserve fund.

However, as we will see, MHOs can and do have deficits (as well as surpluses) and the perspective taken here is that a proper assessment of financial stability or sustainability can only be made by examining trend data over a number of years (this research has tried to gather four years of data for each MHO).

The conceptual framework underlying the study is presented in Figure 1.1. It suggests that the four main factors affecting the financial stability of MHOs are:

- ▲ the design features of the MHO
- ▲ the efficiency and effectiveness with which the MHO is managed
- ▲ household characteristics – specifically the characteristics of households which choose to join the MHO and the behavior of member households
- ▲ the provider environment (including factors such as clinical practices and reputation for quality care).

Figure 1.1 also shows the parameters thought to be important in influencing financial stability within each of these four broad categories.

MHO expenditures constitute primarily its commitments and obligations to the providers with which it contracts and, to a lesser extent, the expenses of its administration (including marketing). The MHO’s income, on the other hand, comes largely from the commitments and obligations of its members as provided by the MHO’s membership contract. The amount of income actually collected also reflects the MHO’s performance of its income collection activities (management performance).

The balance of expenses and income of an MHO during a given period results from the interactions and behavior of the various parties (providers, member and non-member households, MHO managers) in relation to incentives associated with the MHO’s design. These design parameters include benefit packages, premiums and frequency of contributions, membership policy, measures to minimize risks inherent to health insurance (adverse selection, moral hazard, increasing costs, abuses, fraud, etc.), and contract terms that bind the MHO and the authorized provider(s). These scheme design parameters set the rules of conduct and possible sanctions that govern the behavior of households, MHO managers, and providers.

However, the MHO’s design parameters are not immutably fixed; they can and do change as the initial basis or premises for the design evolve. For instance, MHOs may change their design as members respond to changes in their socio-economic environment or needs, or in response to the behavior of other parties. Similarly, the management, household characteristics and behavior, and provider environment are all important factors that may change and affect the financial stability of MHOs in the course of their development.

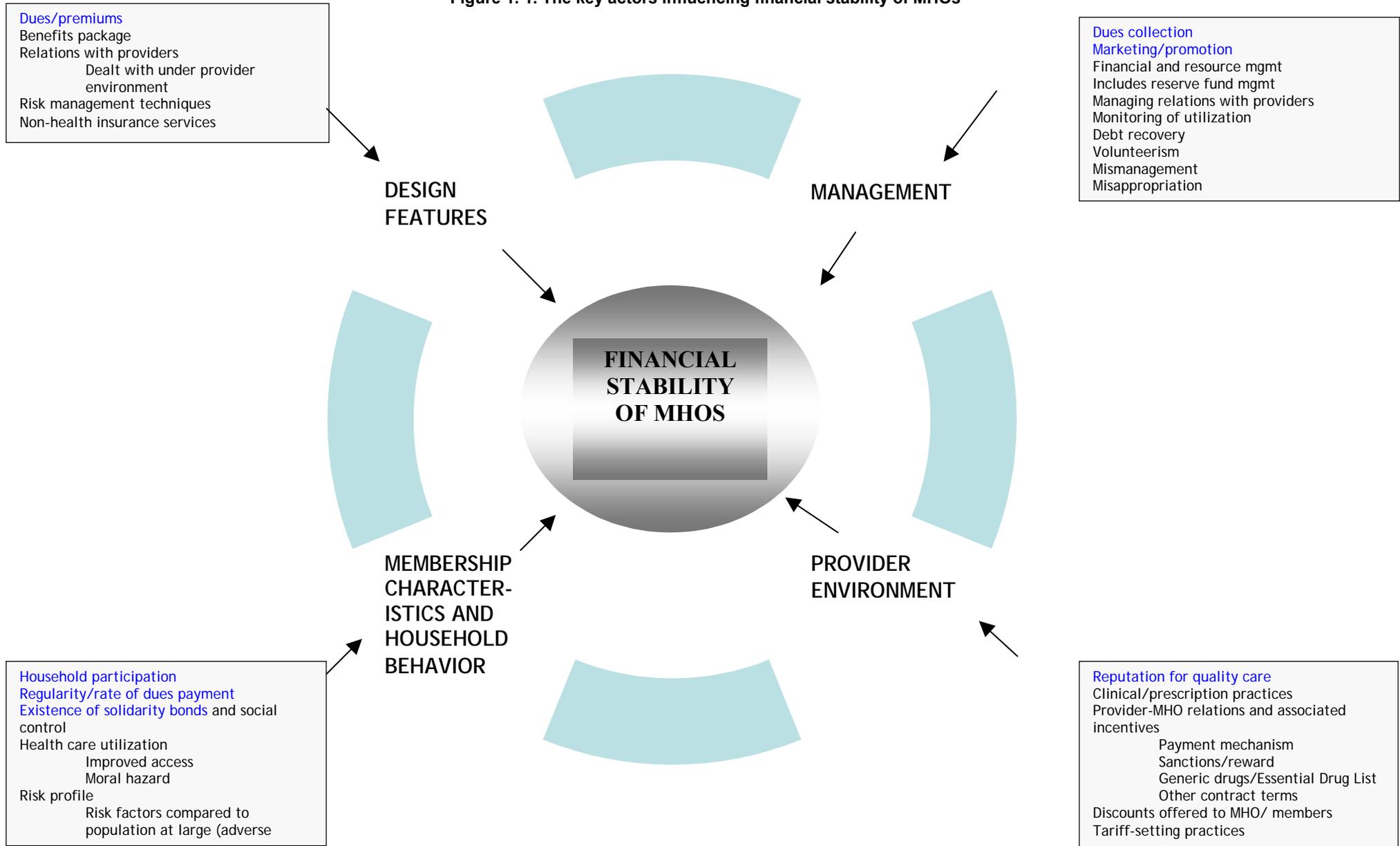
Exogenous to these relationships between MHO, households, and providers, facts such as the extent of macro-economic stability, natural disasters, and the availability of government budget to subsidize public sector providers may all influence the financial stability of MHOs.

---

#### 1.4.1 Research Questions

- ▲ What are the primary factors affecting the financial stability of MHOs in the Thies region of Senegal?
- ▲ Specifically, what are the relative roles played by (i) aspects of MHO design, (ii) MHO management, (iii) provider environment, and (iv) household behavior in determining MHO financial stability?

**Figure 1. 1. The key actors influencing financial stability of MHOs**



NB: (1) Blue text represents sub-factors potentially impacting on income; black text represents those potentially impacting on expenses.



## 2. Methodology

As described in Section 1.4, it was thought that four broad types of factors (design features of the MHO scheme, scheme management, the provider environment, and membership characteristics and household behavior) would affect scheme financial stability. In order to collect information about each of these four factors, three different instruments were used, namely:

- i. A MHO survey – collecting information on scheme design, management, and financial performance
- ii. A provider survey – collecting information on the provider environment including fee schedules, prescribing practices, and provider–MHO relations
- iii. A household survey – collecting information on household participation in insurance schemes (issues of adverse selection) and service utilization (including issues of moral hazard).

While this report provides a full presentation of findings from the MHO and provider surveys, only highlights from the household survey are presented. A fuller presentation of the household survey and methodology underlying it is given in Diop (2005).

External factors affecting MHO financial stability were not investigated in-depth, but during the period investigated by the study, there were no major external shocks that would have been likely to significantly influence MHO financial stability.

---

### 2.1 Sampling for MHO Survey

At the time of the study, the Thies region reported having about 40 MHOs in all (see Table 2.1). In order to ensure that MHOs in the study were indeed functional and had sufficient data to enable trend analyses, it was agreed to include only MHOs that had been operating – i.e., offering benefits to its members – for a minimum of two full years.<sup>10</sup> All 27 MHOs which met this eligibility criteria were included in the sample. Where possible, data were collected for a four-year period (2000–03).

---

<sup>10</sup> Because MHOs regard the date of creation as the day their initial general assembly (IGM) was held, it sometimes happens, though not often, that a MHO effectively begins to offer the services before the IGM date. The data in Table 2.1 refer to the most recent inventory year (2003). By the time of the survey in 2004, 27 MHOs had at least two years of full functioning.

**Table 2.1. Sampling strategy for MHOs**

<b>Distribution of MHOs in the Thiès region according to membership size in 2003, and to the number of years since the date of beneficiaries' coverage.</b>					
<b>Date of coverage</b>	<b>Number of members</b>				<b>Total</b>
	<b>&lt; 100</b>	<b>100-399</b>	<b>400-999</b>	<b>1000+</b>	
< 1 year	8	4	2		14
1-3 years		7			7
4-5 years	1	3	4	1	9
6 years and +		4	4	1	9
<b>Total</b>	<b>9</b>	<b>18</b>	<b>10</b>	<b>2</b>	<b>39</b>

Source : Concertation 2003

## 2.2 Sampling for Provider Survey

Health services in Senegal are provided by a network of government and mission health posts, health centers, and hospitals, as well as a few private clinics. For the provider component, in order to maximize data collection from providers contracting with MHOs, the health post or clinic most frequented by the study MHOs' beneficiaries was included in the providers' survey; where other health posts had a similar attendance by beneficiaries of a MHO in the study, one of the health posts was randomly selected. The information regarding the most frequented health post was obtained by asking the managers of the MHOs concerned.

As many MHOs tend to contract with the same health centers and hospitals, it was decided to include in the survey all of those facilities in the region. Therefore, the two hospitals and all the health centers in the region were included in the providers' survey. Altogether, 24 health posts, three health centers, the regional hospital, and the private Catholic hospital were included in the study (see Table 2.2). Although public facilities predominate, there are a significant number of private facilities as well (both non-profit, religious ones and commercial ones).

**Table 2.2. Sampling strategy for health care providers**

<b>Type of provider</b>	<b>Number</b>	<b>% of total</b>
Health post (public)	15	51.72
Private mission health post	7	24.14
Private for-profit health post	2	6.90
Health center	3	10.34
Private mission hospital	1	3.45
Public hospital	1	3.45
<b>Total</b>	<b>29</b>	<b>100</b>

The variables investigated include the clinical practices of providers, financial relations between the providers and MHOs, payment mechanisms and incentive structures, contracts, quality of care (using drug availability as a proxy), and other provider-related issues.

---

## 2.3 Data Collection, Processing, and Analysis

Data were collected between August 2004 and November 2004 by a team of 16 enumerators for the household survey and four for the MHOs and provider surveys. Four supervisors in the field reviewed all completed survey sheets, and the data were entered into SPSS.

This report presents key findings from each of the different data sets collected (MHO, provider, and household).

The rest of this report is organized as follows: In section 3, basic data on the financial stability of the study MHOs are presented. Using these data, MHOs are stratified into three groups – those with strong financial performance, those with mixed financial performance, and those with weak financial performance. Further analysis then investigates differences between the three different categories of MHOs in terms of scheme design, management, and relations with providers (Sections 4, 5, and 6 respectively). Section 7 then presents summary findings from the household survey analysis regarding the financial stability of MHOs.<sup>11</sup> Section 8 presents discussion and conclusions.

It should be noted that, even though the Thies region of Senegal has one of the highest concentrations of MHOs in the world, the absolute number of MHOs analyzed in this study is relatively small (27). Given this small number, the analysis presented here is somewhat exploratory.

---

<sup>11</sup> It is planned, for a future date, to integrate the MHO and provider data set with the household data set; this would allow for an even richer analysis.



## 3. Financial Stability of MHOs in the Thies Region

This section describes some basic indicators of financial stability of mutual health organizations in the Thies region, including trends in financial balances, the number of scheme members, and the reserve account.

---

### 3.1 Categorizing MHOs by Financial Performance

Of the 27 MHOs included in the study, only 23 had adequate financial data to track total expenditure and total revenue over a period of at least two consecutive years. Data on expenditures and revenues were used to compute whether the MHO had a positive or negative financial balance at the end of each year for every year for which data were available.

- ▲ Six MHOs had consistently positive financial balances at the end of each year;
- ▲ Seven MHOs had consistently negative financial balances;
- ▲ The remaining 10 MHOs had mixed positive and negative balances.

Based upon this information, the MHOs were stratified into three groups:

- ▲ Those with good financial performance (i.e., consistently positive financial balances),
- ▲ Those with mixed financial performance (i.e., mixed positive and negative balances)
- ▲ Those with poor financial performance (i.e., those with consistent end-of-year deficits).

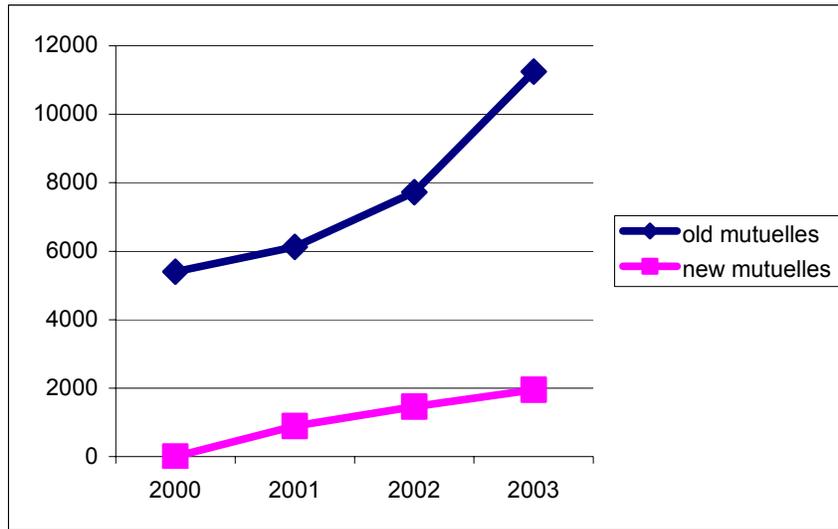
These three strata are used below to analyze how scheme design, scheme management, provider environment, and household behavior and characteristics affect scheme management.

---

### 3.2 MHO Size and Financial Performance

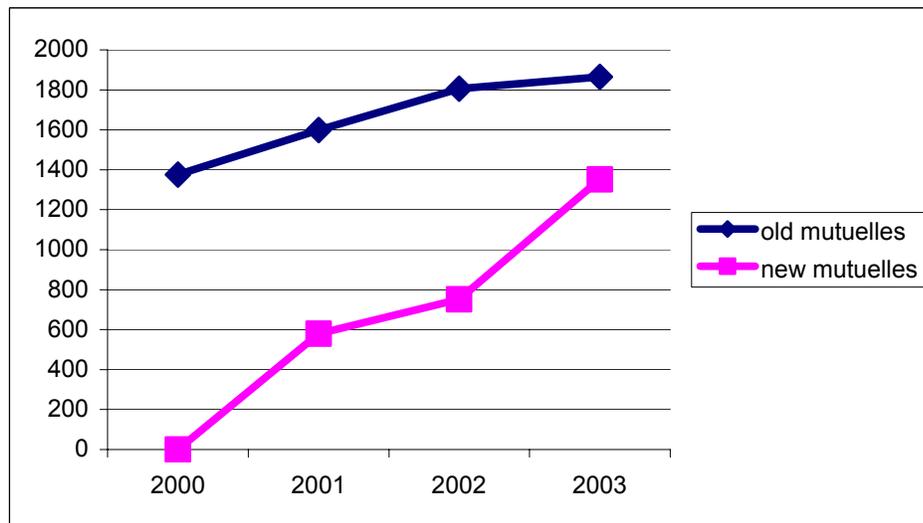
Of the 27 MHOs included in the study, three had no any reliable data on the number of members registered with the MHO nor the number of beneficiaries. Of the remaining 24 MHOs, 17 were established prior to 2000 (the first year for which the study collected data). These 17 are referred to here as the “old MHOs.” The remaining seven MHOs were established in 2000 or 2001, and are referred to here as the “new MHOs.” Figure 3.1 shows the evolution in the end-of-year numbers of MHO members, 2000–03, by old and new MHOs. The period saw a steady upward trend in membership for all the MHOs, although the most substantial growth came from the old MHOs, which doubled in size.

**Figure 3.1 Aggregate number of mutuelle members by old and new mutuelles, Thies 2000-2003**



Several of the MHOs did not have data on the number of beneficiaries covered. However, for those where data were available (19 MHOs in total), evolution of the average size of the scheme for the period 2000–03 is shown in Figure 3.2. This graph is interesting for two reasons: first, it shows an increasing mean number of beneficiaries, and second, the mean number of beneficiaries is quite high, rising from 1,300 in 2000, to more than 1,800 in 2003. It is often suggested that the MHO movement in Senegal is dominated by very small MHOs, with beneficiaries numbering in the low hundreds,<sup>12</sup> but the findings here suggest that most are considerably larger than this.

**Figure 3.2. Average number of beneficiaries per mutuelle by old and new mutuelles, Thies 2000-2003**



<sup>12</sup> This popular notion might have greater justification if one considers members rather than beneficiaries, but the number of beneficiaries is a more appropriate way to assess the adequacy of size of risk pool.

Table 3.1 shows the average number of members and beneficiaries for each of the three categories of MHOs (good financial performers, mixed financial performers, and poor financial performers). It can be observed that poor performing MHOs appear to typically have fewer beneficiaries than MHOs with stable balances. This may imply that small risk pools do indeed pose a threat to financial stability. That said, there are a number of small MHOs among the good performers, which somewhat undermines this notion.

**Table 3.1. Mean number of members and beneficiaries, by MHO financial performance category**

		2000	2001	2002	2003
MHOs with good financial balance	Members	226	171	259	326
	Beneficiaries	719	556	941	1,406
	Ratio Beneficiary: member	4.3	3.8	4.1	4.1
MHOs with mixed financial balance	Members	416	444	484	841
	Beneficiaries	2,239	2,88	2,352	2,443
	Ratio Beneficiary: member	5.9	5.5	6.3	5.3
MHOs with negative financial balance	Members	214	235	236	370
	Beneficiaries	515	756	702	534
	Ratio Beneficiary: member	2.6	3.5	3.9	3.1

A further observation is that, among poor performers, the number of beneficiaries compared to the number of members is typically small. For example, in 2003, those MHOs signed up only an additional 2.1 beneficiaries for every one member of the MHO. This compares to an additional 3.1 beneficiaries for each member in the group with good financial performance, and 4.3 in the mixed group. Household size in the Thies region is typically about eight persons (see Diop 2005). These findings therefore imply that not all household members are being registered, and that fewer household members are being registered among the financially less-stable MHOs. This suggests the potential for adverse selection, a phenomenon which is explored in more detail in Section 6.

### 3.3 Reserve Fund

The reserve fund is an important instrument of risk management in all insurance bodies, including MHOs. It is the first (and, in the case of the Thies MHOs, often the only) buffer against unbudgeted expenditure increases arising from unforeseen and unexpected events. Table 3.2 shows how MHOs in Thies provide against such a risk.

**Table 3.2. Reserve fund account**

Nature of reserve fund account	Number of MHOs	Percentage of all MHOs surveyed
1. Savings account	21	77.8
2. Current account	9	33.3
3. Fixed-term deposit account	3	11.1
4. Cash account	26	96.3
5. Deposit payment to provider	23	85.2
6. Other	1	3.7

While a large proportion of the study MHOs appear to keep some form of reserve account, not all of the types of accounts cited in the table are appropriate ways of keeping reserves. In particular, it is inappropriate to consider cash accounts as part of a reserve fund. The accounts that should properly be considered part of a reserve fund are the savings, fixed-term deposit, and deposit payments to providers, with the latter two being most unambiguously appropriate. Only 11 percent of the survey MHOs actually keep a fixed-term deposit account, but around 78 percent and 85 percent of the MHOs do have, respectively, a savings account and deposits paid to a health provider.

Table 3.3 shows how the reserve funds were constituted. Up to 85 percent of the MHOs stated that the one-time enrollment fees paid by each member on registering for the first time are a source of their reserve funds. More surprisingly perhaps, up to 70 percent also mentioned the regular dues as a source, even though very few MHOs appeared to have regular budget surpluses.

**Table 3.3. How was reserve fund constituted ?**

Source of funds for reserve fund	Number of MHOs	Percentage of all MHOs surveyed
One-time registration fees	23	85.19
Regular dues	19	70.37
Waiting period fees	5	18.52
Gifts	1	3.70
Budget surplus	0	0.00

---

### 3.3.1 Adequacy of Reserve Funds

The importance attached to the reserve fund is demonstrated by the fact that many MHOs are willing spend several years building up a sufficient reserve fund before commencing to offer services to their members. Even if an MHO does not do this in general, those that wish to enter into a contract with the St Jean de Dieu Catholic Hospital<sup>13</sup> need to accumulate at least 500,000 FCFA<sup>14</sup> to pay the deposit required at the signing of this contract. This amount therefore constitutes an unofficial minimum target that must be accumulated before start-up, for MHOs that offer hospital benefits.

Table 3.4 presents data regarding the average amount of reserve fund accounts held by MHOs between 2000 and 2004. While the vast majority of MHOs stated that they had some kind of reserve account, data on the amount of the reserve fund were not available in all cases.

---

<sup>13</sup> All hospitalization cover to date is with this hospital.

<sup>14</sup> 1US\$ = 546 FCFA approximately

**Table 3.4. Evolution of reserve accounts 2000–04**

	2000	2002	2003	2004
Average amount (in FCFA) held as reserves (for those with reserve fund)	752,429	823,203	913,478	1,129,691
Average number of months of health expenditure covered by reserve (for those with reserve fund)	28.3	80.9	21.1 (48.5)	14.5 (39.9)
No. of MHOs with reserves covering at least 9 months	5	7	6	9

Note for years 2003 and 2004 that figures in parentheses represent average number of months of health expenditure including all MHOs. The figures without parentheses exclude one new MHO which had established high reserves and had minimal expenditure (giving nearly 600 months covered).

The table shows that the 500,000 FCFA deposit required by the St Jean de Dieu hospital provided a minimum level of reserve funds for most MHOs, but, over the years, the MHOs had built up their reserve funds in absolute terms by more than 50 percent.

The adequacy of the reserves held was calculated in terms of how many months of average health services expenditure would be covered by the amount of reserves. The 2003 law in Senegal regulating the MHOs requires that the reserve fund for each MHO should cover at least nine months of such costs.<sup>15</sup> As seen in Table 3.4, results are less-than-spectacular for the majority of MHOs. While the average number of months covered is high, this is due to a handful of MHOs that have far exceeded the legal requirements. Very few MHOs actually meet the nine-month requirement, although there does appear to be a slight upward trend in the number of MHOs meeting the requirement.

Furthermore it appears that the health expenditure data provided by the MHOs may not be very reliable. The individual categories of expenditure do not always sum to total expenditure, and health expenditure sometimes appears to be a very small component of total expenditure. If reserves are calculated based upon total expenditure (rather than the unreliable health expenditure data), then their adequacy appears in greater doubt.

It should be observed, however, that the Senegalese law was only passed in 2003, and the legislative instrument for its implementation was still being awaited in 2005. Therefore, in a wider sense, MHOs in Thies appear to be ahead of the law in generally accepting the need for, and practically implementing, reserve fund accounts to help stabilize their organizations.

---

<sup>15</sup> République du Senegal, Assemblée Nationale, Xème Legislature, N° 03/2003, « Loi Relative aux Mutuelles de Santé ». This law requires mutuelles to hold reserves equivalent to nine months' costs of services.



## 4. MHO Design

Box 2 summarizes (from Figure 1.1) the main aspects of scheme design that were hypothesized to affect financial sustainability of schemes. This section (i) reviews how MHOs determined scheme design parameters and how the parameters have evolved over the years and (ii) analyzes differences between MHOs' approach to scheme design and how this affected financial performance.

### Box 2. Scheme design factors affecting financial sustainability

Dues/premiums: these affect the income side of the financial stability equation. Indeed the main (recurrent) income of a MHO usually comes from the dues or premiums of members.

Benefits package: these affect the expenditure side.

Relations with providers: these can potentially affect either side of the equation but more usually they affect the expenditure side. (These aspects are also dealt with under provider environment later [Section 6].)

Risk management techniques: these affect the expenditure side as well.

Non-health insurance services: for the purposes of this study, it is the potential or real financial impact on the MHO of such services (such as offering loans to members, engaging in other socio-economic activities) that we are concerned about.

### 4.1 Gathering Information for Scheme Design

#### 4.1.1 Information-gathering Methods Used by Schemes

Table 4.1 presents ways in which MHO initiators gathered information on how to design a potentially viable scheme. MHOs frequently pursued more than one of the methods.

**Table 4.1. Methods by which MHOs gathered information about scheme design**

Method	Number of MHOs using method	Number of MHOs that reported adopting recommendations from the information-gathering process	
		Selected recommendations	All recommendations
Formal feasibility study* by scheme initiators	16	4	5
Formal feasibility study by a partner	8	2	2
Study visit to another MHO	5	2	0
Use of local skills in community, acquired from similar local experiences	6	2	0
Other method (not specified)	3		

\*Feasibility study is used here in a broad sense to include any systematic process, formal or informal.

As many as 16 (about 60 percent of the MHOs in the survey) reported that they had carried out a formal feasibility study in which those community members involved in initiating the scheme had participated. In eight (about 30 percent) cases, a partner (such as the GRAIM) undertook a formal study for the initiators. Approximately 20 percent of the MHOs visited existing MHOs or sought the advice of local people with relevant skills (usually acquired from similar community projects or types of initiative).

Table 4.1 suggests that adoption of the recommendations of feasibility studies was relatively limited. Of the 16 MHOs that reported carrying out feasibility studies, only nine reported adopting all or even some of the study findings. This reinforces anecdotal evidence which shows that the critical parameters for design are nearly always decided at the initial General Assembly meeting, where founding members' views may significantly depart from the results of a feasibility study. It is also a reflection of the democratic nature of the MHOs in Thies. (See also discussion about dues setting, below, and Table 4.2)

---

#### 4.1.2 Impact of feasibility studies on financial performance

Table 4.2 shows how feasibility studies may have affected financial performance of the MHOs in the survey, using the financial performance categories in Table 3.1 (MHOs with good performance/positive financial balances, mixed performance/mixed financial balances, and poor performance/negative financial balances). It appears that undertaking a feasibility study has a positive impact, or at least is correlated with, later financial performance. More good performers have undertaken a formal feasibility study than mixed or poor performers. This finding is particularly strong when MHO initiators have undertaken the study themselves or been closely involved in doing it: 83 percent of good performers carried out their own feasibility study. Similarly, more mixed performers carried out a study than did poor performers.

However it is important to stress that this does not prove that the feasibility study itself was the reason for the good performance. It is also possible that the *learning process* of undertaking the study may have had a beneficial impact.

**Table 4.2. Percent of MHOs having done initial feasibility study and later financial performance**

<b>% of MHOs having had at its start:</b>	<b>Good financial performer</b>	<b>Mixed financial Performer</b>	<b>Poor financial performer</b>
Formal feasibility study by initiators	83%	70%	57%
Formal feasibility study carried out by a partner	50%	40%	29%
Visit to another MHO or using the example of another MHO (local expertise)	17%	20%	14%
N	6	10	7

---

## 4.2 Design Parameters

---

### 4.2.1 Dues

#### Setting dues

Table 4.3 shows how the levels of member contributions (dues) were decided by MHOs in the study. Twenty-four MHOs (about 90 percent) attributed dues setting to a General Assembly decision, no matter the method/s used to estimate the dues level. What is interesting here, especially in the light of results in Table 4.1, is that only 11 MHOs stated that they based the dues on findings of a feasibility study, and four of them based it on the experience of another MHO.

**Table 4.3. Basis on which dues level were first fixed**

Basis	Number of MHOs
Feasibility study	11
Experience of another MHO	4
General Assembly decision	24
Advice of external partner	0
Advice of local technical support partner	0
Others, not specified	2

#### Modifying dues

Table 4.4 shows the total number of times that MHOs changed their contribution rates in the study period. What seems remarkable about this data is how few MHOs have changed their contribution rates in the period concerned. This is worth bearing in mind as we move on to see the changes that have occurred in other MHO design parameters, especially benefits packages.

**Table 4.4. Number of, and reasons cited for, modifications in dues levels, 2000–03**

Reason for modification	Number of MHOs modifying dues			
	2000	2001	2002	2003
General inflation	3	0	1	1
Increase in health care tariffs	0	1	1	2
Bad debts	0	0	0	0
Budget deficits	1	0	0	0
Other reasons – large reserves	0	1	0	1

It appears that increases in overall prices (general inflation) in 2000 and health care costs (medical inflation) in 2003 were the main reasons for changes (three MHOs in each case). It is worth also noting that, of the 12 modifications made, all but one were increases.

#### 4.2.2 Services/benefit packages

Table 4.5 shows the health services covered by MHOs at the start of the schemes and at the time of the survey, and the percentage of coverage by service. Many schemes in Thies involve high co-payment rates for services included in the benefit package. While co-payments are typically viewed as a mechanism to prevent unnecessary use of services, in the Senegalese context they are often viewed as a way to minimize the level of dues.

The data tend to confirm a widely observed trend among MHOs – toward increasing coverage of primary health care services (or, more broadly, ‘small risks’) rather than secondary health care (or ‘big risks’). This trend is evident when we look at the three most demanded curative care services: historically, hospitalization was the service the early MHOs initially offered and so was perceived as a very popular (‘big risk’) benefit, but only two MHOs (about 11 percent) have begun to offer hospitalization since they started up. In addition, the number of MHOs covering 100 percent of hospitalization services declined slightly. In contrast, consultation and drugs (‘small risks’) are increasingly popular services. The number of schemes offering at least some coverage of basic consultations has grown by 64 percent, and of drugs by 53 percent.

While MHOs are increasing their coverage of small risks, these events occur more frequently and so it is possible that their inclusion in MHO benefit packages will have significant implications for MHO finances.

**Table 4.5. Services covered by MHOs initially and currently: Percent coverage, number of MHOs**

Services offered	Number of MHOs covering % t (coverage rate) at start of scheme			Total	Number of MHOs covering % t (coverage rate) currently			Total
	0 < t ≤ 50	50 < t < 100	100		0 < t ≤ 50	50 < t < 100	100	
<b>Big Risks</b>								
Hospitalization	2	1	16	19	6		15	21
Delivery (uncomplicated)	3	2	5	10	3	9	4	16
Caesarean	1		2	3	4		2	6
Laboratory analysis and radiography	5	2	3	10	9	1	3	13
Surgery	3		1	4	7			7
<b>Small Risks</b>								
Consultation	5	4	5	14	9	10	4	23
Essential drugs and generics	5	4	6	15	5	11	7	23
Pre-natal care	1	3	5	9	2	6	5	13
Post-natal care	1	3	4	8	2	5	2	9
Vaccinations	2	3	3	8	2	6	2	10
Hospital transport	1		1	2	1		2	3
Family planning	1	1	2	4	2		1	3

MHOs were asked to report the last four changes in their benefit package, and reported a total of 60 changes in all. Unfortunately, the survey instrument did not ask about changes to benefit packages and to dues rates over comparable periods of time. However, most of these changes to the benefit package occurred since 1998: as discussed above, only 12 changes in dues occurred in the 2000-03 period.<sup>16</sup> Just as most contribution changes were upward adjustments, practically all benefit package changes added services to the package.

In all but four of the changes, the reason given for making the change was simply that this was a General Assembly decision. It appears that the General Assembly acted without an actuarial basis or other evidence-based projection of impact on the scheme's financial commitments and thus on scheme financial sustainability. Likely the General Assembly was responding to member demands in order to keep members and/or to attract new members.

---

### 4.2.3 Managing Financial Risk

Table 4.6 shows the kinds of risk-minimizing factors that were adopted into initial design of the scheme. As the table shows, only a minority instituted common risk-minimizing measures at that time. The current widespread use of such measures implies that many of the schemes adopted such measures only later in their existence, based on their experience.

**Table 4.6. Schemes adopting risk-management practices at time of initial scheme design**

<b>Parameters taken into account during initial scheme design</b>	<b>Number of MHOs</b>
Waiting period	10
Mandatory family registration	8
Co-payments	7
Appropriateness/ adequacy of dues in relation to benefits package offered	7

---

<sup>16</sup> As several of the MHOs in the sample were relatively young it seems likely that far more than 12 changes in the benefit package had occurred during the past four years.



## 5. MHO Management

In carrying out its functions, the MHO's management can have a very direct impact on financial stability. Box 3 summarizes (from Figure 1) the key dimensions of MHO management which are likely to affect financial stability.

### Box 3. Scheme management factors affecting financial sustainability

- ▲ Dues collection which affects scheme revenue
- ▲ Debt and loan recovery
- ▲ Resource management
- ▲ Managing provider relations (checking invoices, negotiating on prices etc.)
- ▲ Marketing/promotion
- ▲ Monitoring the utilization of services

### 5.1 Dues: Collection Mechanisms, Periodicity, Arrears and Recovery Rates

Table 5.1 shows the periodicity of dues collection by the 27 MHOs in the study. (Some offer alternative collection schedules.) Twenty-six collect dues on a monthly basis. Six allow quarterly payment periods (at least one of those collects dues only on a quarterly basis, to coincide with the period when members receive their pension payments). One collects dues annually and another at an unspecified period.

**Table 5.1. Periodicity of dues collection**

Periodicity	Number of MHOs
Monthly	26
Quarterly	6
Annual	1
Other	1

These dues collection schedules are largely the result of the fact that Thies is an agricultural area where income is obtained mainly from annual harvests, supplemented by dry season gardening and other more minor income-generation activities. Because the decision about when to collect dues is usually democratically arrived at during General Assembly meetings, it seems clear that the majority of people prefer the monthly collection schedule, perhaps because they find it less onerous than coming up with a year's dues all at once.

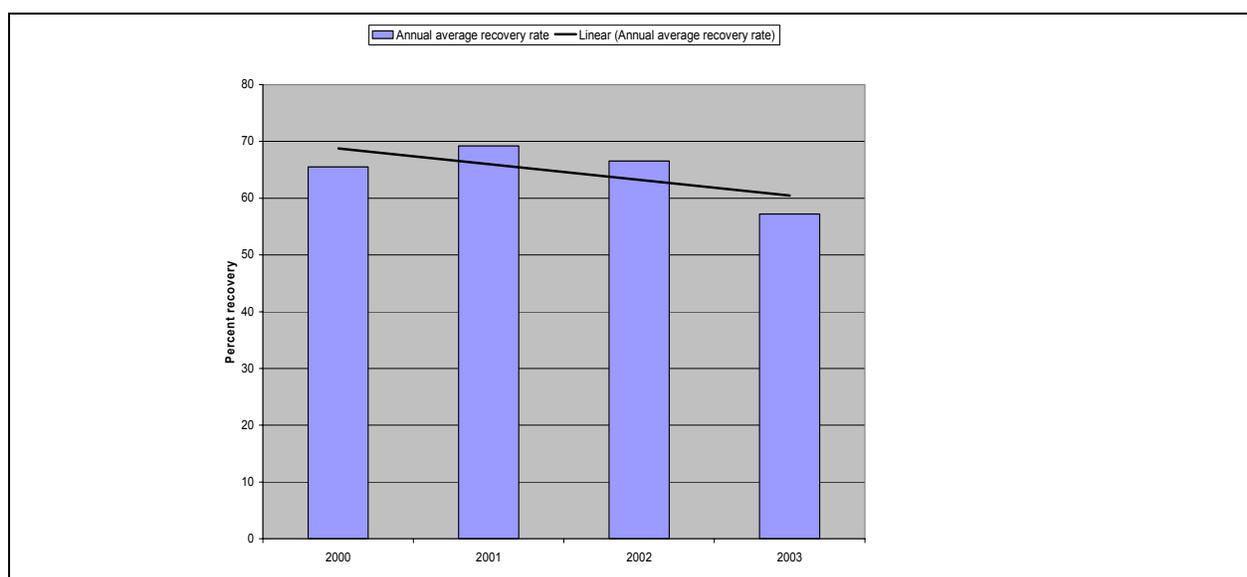
Table 5.2 shows the dues recovery rate at the end of four budget years for the three groups of MHOs. The rate is equal to the revenues actually received in dues payment as a percentage of the expected revenue from dues (i.e., the number of beneficiaries multiplied by the dues rate). Note that data were not available on this variable for a significant number of MHOs. Overall the rate of dues recovery is remarkably low, averaging 63 percent across all MHOs and across all four years. However there were significant performance variations that are masked by the aggregate data. In particular, six MHOs achieved a relatively strong performance, averaging more than 80 percent of dues recovery over the period. The table also indicates that strong performance in dues recovery is one of the factors that appears strongly associated with positive financial balances at the end of the year. Among MHOs with positive financial balances, the average dues recovery rate was 73 percent, compared to a 53 percent rate among MHOs with negative financial balances.

**Table 5.2. Rate of dues recovery by MHO financial performance category**

	2000	2001	2002	2003	Average recovery rate	N
MHOs with good financial balances	61%	76%	79%	63%	73%	6
MHOs with mixed financial balances	72%	71%	64%	63%	67%	9
MHOs with consistently negative financial balance	40%	60%	50%	43%	53%	5
Annual average recovery rate	66%	68%	67%	57%	63%	20

Figure 5.1 shows time trends for all MHOs over the four years. There appears to be a gently declining ability to recover dues from members. This might be related to macro socio-economic factors affecting the region and the income of community members, or it could be related to factors operating at the individual MHO level. However, further inspection of the individual MHO data did not reveal a marked trend towards a declining ability to recover dues by the better performing schemes.

**Figure 5.1. Combined average annual dues recovery rates for 23 MHOs, 2000–03**



The information presented in Table 5.3 shows methods used for collecting dues from MHO members. Sixteen MHOs (59 percent) of the 27 MHOs in the study said that they relied on members to pay their dues during meetings; 18 (two-thirds) reported that they carry out door-to-door-collection. The largest number, 23 (85 percent), stated that members may also go to the designated office (or MHO officer/s) to pay their dues, though this is usually considered less reliable. As MHOs typically use multiple methods for collecting dues, it is not possible to attribute poor dues collection rates to particular collection methods.

**Table 5.3. Methods used for collecting dues**

Method	Number of MHOs using method
Door-to-door	18
Members go unsolicited to pay dues at designated offices/ers	23
During meetings	16
Automatic deductions (from salary, etc.)	0

---

## 5.2 Loans, debt, and debt recovery

---

### 5.2.1 Non-health insurance services of MHOs and their impact on performance

This section presents data about additional, non-health insurance services offered by MHOs. The first of these services is actually integrated into the core health insurance function: loans in the form of advances to members for health care costs beyond the limit covered by their insurance. These loans are necessitated by the relatively high co-payment rate charged by many schemes, and by the nature of the provider contract for hospitalization services. St Jean de Dieu, the preferred hospital with which the MHOs in the survey contract for hospital services, insists on billing only the MHO for the entire cost of services provided to MHO beneficiaries. After the person is discharged from the hospital, it is the responsibility of the MHO to recover from the member, the member's share of the bill (primarily the co-payment, but also payment for services received that are not included in the benefit package).

Some MHOs have extended the practice of making loans to members for non-hospital services, specifically, for the purchase of mosquito nets and for income-generation activities.

Fifteen of the MHOs in the study, 56 percent of all the functional MHOs in Thies, offer loans to their members for health care costs beyond the level covered by their insurance. The same number also provide loans for purchases of mosquito nets. Only four give loans to support income-generation activities of their members.

Among the six MHOs with good financial balances, relatively few (33 percent) offer advances for health-related services and a large proportion (83 percent) offer loans for mosquito nets; none, however, offer loans for income-generation activities. Most loans for income-generation activities appear to be offered by MHOs with poor financial balances.

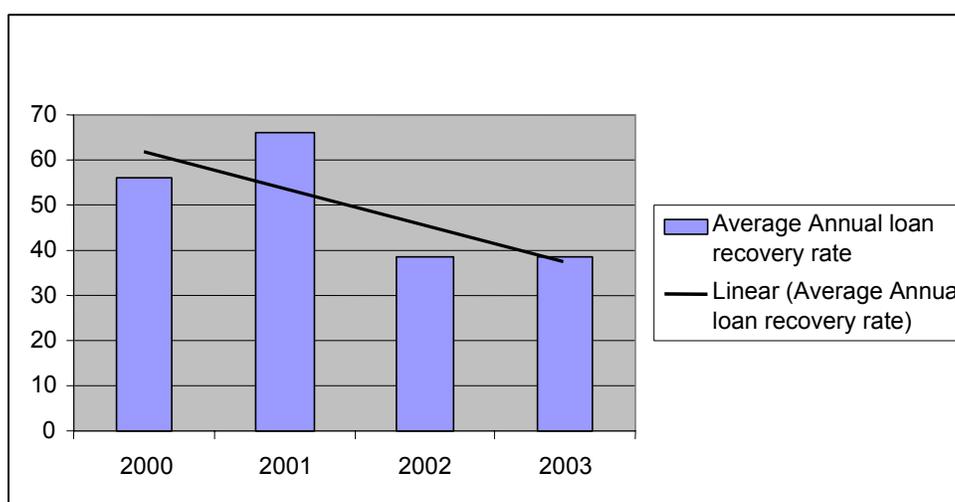
**Table 5.4. Non-health insurance services of MHOs, by MHO financial performance category**

MHOs	% offering health care loans	% offering loans for mosquito nets	% offering income-generation loans	N
Good financial performers	33%	83%	0%	6
Mixed financial performers	60%	50%	10%	10
Poor financial performers	57%	43%	43%	7

### 5.2.2 Repayment of health care loans

Overall, the rate of recovery of health loans was approximately 50 percent, though, as shown in Figure 5.2, the recovery rate has been appreciably less than 50 percent during the two most recent years for which data were available (2002, 2003).

**Figure 5.2. Average recovery rate of health loans by MHOs, by year**



Of the 15 MHOs that offer health care loans, six had average loan recovery rates of more than 60 percent; two had average rates around 50 percent, and seven had rates well below 50 percent (see Table 5.5). Examining the detailed annual figures, it appears that, at least for the four best performing MHOs (which had loan recovery rates more than 70 percent), the average recovery rate is a reasonably fair reflection of their year-to-year performance. There is much more variation in the loan recovery performance of most of the other MHOs.

There appeared to be little difference in health care loan recovery rates across MHOs with different types of financial performance (mean recovery rate for those with positive financial balances was 54 percent compared to 49 percent among those with consistently negative financial balances), but it should be kept in mind that far fewer MHOs in the more financially secure group offered such loans.

**Table 5.5. Average health loan recovery rate, by MHO, 2000-04**

Code of MHO	Average recovery rate
1	25
2	38
3	31
4	65
10	48
12	25
13	50
14	22
15	80
16	0
31	100
33	73
36	84
37	35
39	69

Table 5.6 shows the total of health care loans as a percentage of expenditure for the 11 MHOs for which data were available. Two MHOs, Nos 1 and 36, have health loan debt that is extremely high: in the former case, debt far exceeds the total average expenditure over the period; in the latter case, debt represents more than 75 percent of expenditure. A third MHO (No. 37) has an average debt that is more than a third of its expenditure.

**Table 5.6. Total MHO health loan debt as percent of total annual expenses**

Code of MHO	Debt as % of expenses				Annual average
	2000	2001	2002	2004	
1	57	255	125	99	134
2		4	2	5	4
3	35	11	9	3	15
10	9	15	8	5	9
12	12	21	26	33	23
13	12	14	12	14	13
15	0	11	19	8	13
33	22	3	0	18	14
36	53	86	98	68	76
37	3	66	63	17	37
39	12		15		13

Table 5.7 gives the decomposition of member debts to 10 MHOs as of 31 March 2004, by duration of the debt (for periods of six months, one year, and more than one year) and as a percentage of total 2003 MHO expenses. Five (50 percent) of these MHOs have total debts that are relatively insignificant in relation to total 2003 expenditures (representing less than 1 percent of expenditure), three have highly significant amounts of short-term debt, and one has debt in excess of 320 percent of its 2003 expenditures.

**Table 5.7. Member health loan debts to MHO of six months, one year, and more than one-year duration**

Code of MHO	Debt elapsing 6 months or less as % of total 2003 expenses	Debt elapsing over 6 months to 1 year as % of total 2003 expenses	Debt elapsing over 1 year as % of total 2003 expenses
1	0.1	0.0	0.0
3	0.6	0.0	2.0
10	0.0	0.0	0.0
12	31.9	6.2	33.1
13	0.1	0.0	0.0
15	0.0	0.0	7.9
31	0.6	0.0	11.7
36	321.4	0.0	0.0
37	0.2	0.0	0.0
39	45.5	0.0	

The survey data also indicated that only two of the MHOs studied have fixed repayment schedules/deadlines for loans taken out by members. Given that 15 of the 27 MHOs studied made loans to members, it is arguably a point of weakness in design and/or financial management that more than 85 percent of the MHOs do not have clear policies regarding loan repayment.<sup>17</sup> The two MHOs that have clearly defined repayment terms require that loans be repaid within nine months and three months respectively. For one MHO, the actual repayment period offered to the member is based upon the size of the loan; for the other, the repayment period is based upon the income of the member. It is possible that other MHOs have individual agreements with members which depend upon factors similar to these.

---

### 5.2.3 Repayment of loans for mosquito nets and income-generation activities

Of the 15 MHOs offering loans for mosquito nets, only eight have complete data on the amount recovered; however, for these eight, the recovery of loans for mosquito nets appears marginally better than for income-generation loans. Four MHOs have very high average recovery rates, at least 80 percent, and the overall average for the group is 67 percent.

Of the four MHOs offering loans for income-generation activities, only one was able to recover, on average, more than 80 percent of the amounts due. Over the four MHOs, only about 53 percent of the

---

<sup>17</sup> Despite not having fixed repayment terms, some MHO managers implicitly write off debt if not paid by the end of the year. See data on bad debts below.

total amount due in repayments of income-generation loans was recovered during the past four years. Data for two of the MHOs appear very patchy.

---

#### 5.2.4 Mechanisms to absorb or reduce impact of bad debts

Several questions are raised by the fact that some MHOs have significant and rolling annual loan arrears arising from non-health insurance activities: What happens when a MHO has to declare some of its debt as bad debt? How does an MHO minimize the potential impact of debt on its financial balance?

Table 5.8 shows mechanisms that the MHOs in Thies use to absorb or otherwise reduce the potential negative impact of bad debts. The mechanism relied on most frequently by the 26 MHOs responding to this question is social (peer) pressure. This reflects the community solidarity character of these schemes, and their potential ability to mobilize community social capital, although the survey did not measure effectiveness of this instrument and so it is not clear whether good results are achieved this way. The granting of moratoria to defaulters is similarly a reflection of social solidarity. It is interesting to note that at least five schemes mentioned that legal action was one mechanism is at least theoretically available. It is not clear from the data whether these MHOs actually took such action; it is probably safe to assume that legal action is not a practicable option for most MHOs.

**Table 5.8. Mechanisms used by MHOs to absorb or reduce impact of bad debt**

Mechanism	Number of MHOs stating that they use it
1 = Recourse to reserve fund	0
2 = External subsidies	1
3 = Increase of dues	0
4 = Social pressure	8
5 = Demand for security, guarantee or deposit	1
6 = Moratorium	5
7 = Legal action	5
8 = Others (unspecified)	6

Only three MHOs impose penalties on members who are in arrears for loans and six MHOs impose penalties on those who are in arrears for dues.

---

#### 5.2.5 Debt owed to providers

As of 31 March 2004, only three MHOs (11 percent of those surveyed) were indebted to providers, but by an insignificant amount compared to both provider turnover and the total amount of business done between MHOs and providers in Thies.<sup>18</sup> (The three debts ranged from less than FCFA 2,000 to FCFA 900,000.) This low level of debt is partly explainable by the universal requirement of a deposit that the MHO must pay to the provider at the start of their contractual relationship. It suggests that, whatever the current financial problems of MHOs, they may not yet be having a significant impact on providers.

---

<sup>18</sup> See discussion about providers, below, for details of the amount of business transacted between HMOs and providers, as well as the latter's general turnover figures (for health posts and health centers).

---

### 5.3 Skills, Competence of Management, MHO Structures

The skills and competence of management are factors that can have a significant impact on a MHO's ability to maximize its income (calculate a premium rate sufficient to cover expected expenses, achieve a high dues recovery rate, invest surplus revenue wisely, etc) and minimize its expenditures (vet provider invoices and tariff-setting and prescription practices, check abuses by members, appreciate the likely financial impact of various decisions regarding design and operation of the MHO, etc). The study examined two indicators of managerial skill: education level and training in MHO-related subject areas. Managerial competence is also examined assessed in later sections on marketing and promotion methods, as well as financial and management tools used.

Tables 5.9 shows the educational level of MHO managers; about 70 percent of managers have at least a secondary-level education.

**Table 5.9. Educational level of HMO managers**

Manager's level of education	Number of MHOs	Percentage of all MHOs in survey
Primary school	8	29.6
Secondary school	14	51.9
Higher education	5	18.5
Totals	27	100.00

Table 5.10 shows managers' additional training in MHO-specific skills. Administrative and financial management is the most commonly taught skill; approximately 70 percent of MHO managers have been trained in it.

**Table 5.10. Training in MHO management and operations**

Skill in which manager had training	Number of MHOs	Percentage of all MHOs in survey
Accounting	13	48.1
Marketing/promotion (sensitization and animation)	5	18.5
Administrative and financial management	19	70.4
Control (accounting and management audits)	7	25.9
Health care quality assessment	3	11.1
Information technology	8	29.6
Techniques of animation	10	37.0

Analyses conducted to see if managers' educational achievement or MHO-specific training appeared to affect the financial performance of MHOs found no noticeable difference between MHOs that are stronger financial performers and those that are weaker performers.

## 5.4 MHO Marketing/Promotion

Good promotion<sup>19</sup> of schemes can increase MHO membership, motivate existing members, improve dues collection, instill more responsible behavior and reduce abuses, and enable community needs and preferences to be discerned and taken into account in the design of schemes.

Even though nearly all MHOs do promotion (Table 5.11), the fact the study found that very few managers had received formal training in marketing/promotion (see Table 5.10) leads to questions about the quality, effectiveness, and likely impact of those activities.

**Table 5.11. MHO marketing/promotion activities**

Activity	Number of MHOs with activity plan	Percentage of all MHOs in survey
Sensitization (providing information)	25	92.59
Animation (promoting community participation)	11	40.74

The media and other avenues used for promotion activities (Table 5.12) appear to be dictated as much by financial cost as by some notion of effectiveness: public meetings and home visits are the most popular, used by nearly three-quarters of the MHOs.

**Table 5.12. Media and channels used for MHO marketing/promotion activities**

Activity	Medium	Number of MHOs	Percentage of all MHOs in survey
Sensitization	Public meetings	20	74.1
	Home visits	20	74.1
	Print media	1	3.7
	Radio	10	37.0
	TV	2	7.4
Animation	Public meetings	11	40.7
	Home visits	6	22.2
	Print media	2	7.0
	Radio	6	22.2
	TV	1	3.7

<sup>19</sup> Senegalese MHOs rarely use the term marketing; sensitization and “animation” are universally accepted and used to describe activities aimed at promoting MHOs in communities. Sensitization refers to information provision to and awareness raising among target communities; animation is more proactive, seeking to promote community participation in the MHOs.

## 5.5 Financial Management

A fundamental role of MHO management is to administer scheme resources and manage scheme activities to ensure MHO financial balance or stability, that is, that an MHO's income covers its expenses each year. The MHO manager has a number of tools to facilitate performance of this role. Table 5.13 lists the most common tools and the number of MHOs which have each tool, as well as some indication of whether those tools are actually kept up-to-date.

Good record keeping and regular reporting are particularly important for transparency and accountability, and therefore continued member confidence. Some of the tools involve good record keeping practice, while others involve the preparation of periodic reports.

About three-quarters of the 27 MHOs in the study keep a register of members and a register for member dues. Between three-fifths and two-thirds keep a cash book, a register of letters of guarantee and of beneficiaries (in addition to a members' register) and just over half of them keep a record of service utilization. The tools that are kept are generally quite up to date. However, less than half the MHOs (13) keep minutes of meetings, and even fewer maintain a bank book or prepare budget (income and expenditure) projections or an income and expenditure statement.

**Table 5.13. Management/administrative tools**

Types of management and administrative tools used by MHOs	Available		Not up to date		Not available		Not used (No. of MHOs)
	Number of MHOs	% MHOs surveyed	No. of MHOs	% MHOs surveyed	No. of MHOs	% MHOs surveyed	
Register of members	20	74.1			6	22.2	1
Register of contributions/dues	21	77.8	1	3.7	5	18.5	1
Purchase voucher/order	3	11.1	1	3.7	3	11.1	20
Minutes of meetings	13	48.1			11	40.7	3
Bank book	7	25.9	1	3.7	1	3.7	18
Cash book	17	63.0	1	3.7	8	29.6	2
Budget projections	5	18.5	1	3.7	3	11.1	18
Operating account/Income and expenditure statements	4	14.8			1	3.7	22
Balance sheet	11	40.7			8	29.6	8
Record or register of service utilization	15	55.6			8	29.6	4
Invoice register	10	37.0	1	3.7	5	18.5	11
Guarantee letter	18	66.7			4	14.8	5
Register of beneficiaries	17	63.0	1	3.7	8	29.6	1
Other management tools	4	14.8	5	18.5	1	3.7	17

\* A letter that beneficiaries must obtain when seeking health services in order to benefit from payment exemption according to the terms of their membership (only waived for emergencies).

These data suggest that the quality of MHO management is at best mixed, with only the basic record keeping tools in common use, while others tools, critical to good management, are rarely used. The

MHOs seem to be particularly weak in the areas of reporting on their activities, which involves further analysis or manipulation of their records.

Only 10 MHOs, or about a third of the total, indicated that they submit an annual budget to their General Assembly. This is a very low percentage for such a fundamental tool of financial management, without which it is difficult to see whether the current level of revenues and expenses can be sustained, as well as the likely financial impact of policy decisions.

Table 5.14 shows that for that third of the MHOs that do have a budget process, there is a reasonable understanding of the key elements that need to be taken into account to make the exercise credible and useful.

**Table 5.14. Elements that MHOs incorporate into budgeting**

Element	Number of MHOs	Percentage of all MHOs	
		Surveyed	Having a budget process
Inflation	8	29.63	80
Expected number of members/ beneficiaries	10	37.04	100
Cost of services	10	37.04	100
Overheads	10	37.04	100

### 5.5.1 Impact of use of financial tools on MHO financial performance

Table 5.15 shows the level of MHO use of financial management tools by MHO financial performance category. The data suggest that use of the tools has a beneficial impact on financial performance: good performers tend more to use the tools.

**Table 5.15. Percentage of MHOs using financial tools, by financial performance**

Tool	Good performer	Mixed performer	Poor performer
Bank book	33%	30%	14%
Cash book	83%	60%	57%
Balance sheet	50%	50%	29%
Record or register of service utilization	67%	70%	43%
Register of beneficiaries	50%	70%	71%
Guarantee letter	50%	70%	57%
Budget		30%	
Income and expenditure statement		40%	
Register of contributions/ dues	83%	80%	71%
Invoice register	33%	50%	14%
Register of members	67%	70%	86%
Reserve fund	83%	70%	71%
N	6	10	7

## 5.6 Remuneration and Volunteerism

MHOs rely greatly on volunteer labor. Administrative costs would be greatly increased if MHOs had to offer salaries or other incentives to staff, and they would presumably need to adjust expenditures downward, charge higher premiums, or risk financial imbalance.<sup>20</sup>

The data in Tables 5.16 and 5.17 appear to confirm the widely held perception that MHO managers are essentially volunteers.

**Table 5.16. Remuneration of managers**

Material incentives for managers		Number of MHOs	Percentage of all MHOs surveyed
1 = Salary		4	14.81
2 = Commission on dues collected		2	7.40
3 = Allowance	a : Accommodation	1	3.70
	b : Transport	6	22.22
	c : Free health care		
	d : Others	1	3.70
4= Other benefits	e. Other financial incentive	4	14.81

**Table 5.17. Remuneration of zonal delegates and other persons**

Material incentives for zonal delegates, committee members, and other personnel at decentralized levels		Number of MHOs	Percentage of all MHOs surveyed
1 = Salary		0	0.00
2 = Commission on dues collected		1	3.70
3 = Allowance	a : Accommodation	1	3.70
	b : Transport	6	22.22
	c : Free health care		
	d : Other incentive (to be defined)	2	7.41
Other benefits	Volunteer allowance	3	11.11
	UNACOIS*pays administrative costs	1	3.70
	10% commission on dues	1	3.70
	Nothing paid	7	25.93
	Telephone expenses	1	3.70

\* UNACOIS is a parent trade union for this MHO and provides support in the form of payment of overhead and other expenses of the MHO.

<sup>20</sup> It is also important to note that even where the personnel are unpaid, there may still be economic costs to the MHO in terms of level of performance, time spent on MHO work compared to other duties, and so on. These issues were not considered in this study.

## 5.7 Mismanagement and Misappropriation

This section examines data regarding fraud, abuse, and misappropriation as well as the systems in place for preventing such cases and for verifying the invoices from the provider(s).

Table 5.18 shows that 10 MHOs (37 percent of the surveyed schemes) reported having had a case of fraud or abuse in the use of services by members. The table also shows that one MHO admitted to a case of misappropriation of funds by a manager. Only four other cases of misappropriation were reported by all the MHOs and concerned lower-level officials.

**Table 5.18. Reported cases of fraud, abuse, and misappropriation of funds**

Have there been cases of fraud and/or abuse or misappropriation of funds involving:	Reported cases of fraud and abuse		Reported cases of misappropriation of funds	
	Number of MHOs responding yes	Percentage of all MHOs surveyed	Number of MHOs responding yes	Percentage of all MHOs surveyed
Ordinary members	10	37.04	n.d.	n.d.
Manager	0	0	1	3.7
Other officers	0	0	0	0
Providers	0	0	n.d.	n.d.
Zonal representatives	n.d.	n.d.	2	7.4
Dues' collectors	n.d.	n.d.	1	3.7
Other	n.d.	n.d.	1	3.7

n.d = no data

This is an area where under-reporting is likely; however the data are consistent with anecdotal evidence and a general perception that it is difficult to get away with misappropriation or misuse of funds.



## 6. Provider Environment

### 6.1 Introduction

The nature of the relations between the MHO and its provider(s) can have an important impact on scheme financial health. Those relations, usually captured in a contract, are shown in Box 3.

**Box 3. Provider relations with scheme and effects of provider environment on financial sustainability**

- ▲ The clinical practices of providers (appropriateness of clinical practices, whether practices help control costs)
- ▲ Provider tariffs
- ▲ Choice of provider payment mechanism (and hence provider's incentives to control or encourage service over-utilization and for checking fraud),
- ▲ Reputation and hence attractiveness of the provider and the quality of health care provided to potential scheme members
- ▲ Policy on the use of generic drugs and the essential drugs list (affecting costs to scheme)
- ▲ Other terms in the contract with cost implications

### 6.2 Clinical/Prescription Practices and Provider Behavior

#### 6.2.1 Drug availability

In order to assess very roughly one aspect of quality of care much appreciated by community members,<sup>21</sup> the survey asked providers about the average duration of health facility stock-outs of some of the most common drugs in use in Thies during the second half of 2003. The selected drugs were iron, paracetamol, chloroquine, and amoxicillin. This period encompasses the crucial rainy season of that year, a period when malaria cases tend to increase sharply and consumption of drugs is high.

Annex A shows the number of providers who reported stock-outs of various duration in the six-month period. The data show that the vast majority of providers reported no significant stock-outs of any of the drugs. However, more providers (up to five) reported stock-outs of iron and paracetamol more than

---

<sup>21</sup> Many studies have shown that people are more willing to pay for quality health care (as perceived) and so MHOs would be able to draw more members if they are providing access to health facilities noted for quality of care. Presumably, they would also be able to charge more realistic dues.

of other drugs and for periods ranging between 1 and 50 days. The same two drugs were also the only ones to have been reported out of stock for more than 100 days. These data would seem to be consistent with anecdotal evidence of chronic localized drug stock-outs in a few public PHC facilities in the region.

---

## 6.2.2 Providers' role in advising potential MHO members

It is well established that providers play a crucial role in MHO promotion. Providers' direct and privileged contacts with vulnerable and sick community members give them high credibility and prestige on all matters concerning health. Indeed, many schemes regularly depend on them to help convince people to enroll in MHOs.

To learn whether provider personnel tend to counsel MHO membership to persons who would be considered "bad risks" for MHOs, providers were asked to rank the priority in which their staff actually counselled persons in vulnerable groups about the MHO. Table 6.1 shows that provider staff tend to encourage MHO membership to non-members who are seriously ill or very poor; 11 providers also stated that their personnel would give advice/information on the advantages of MHOs to all sick patients.

What is significant here is that the providers are in touch mainly with the vulnerable or sick people in the community: advice to such persons to join MHOs needs to be balanced by similar urging of the healthy and better-off in the community to do the same.

**Table 6.1. Providers' personnel giving advice/information on advantages of MHO**

Does provider advise non-members to join MHO in case of:	Number of providers giving this order of importance (1-5, 1 being highest priority) :				
	1	2	3	4	5
Serious illness	2	12	5		
Very poor patients	13	8	3	1	
Chronic illness	3	3	7	5	
All sick people	11	6		7	
Others		5			

---

## 6.3 Financial Relations between Provider and MHO

---

### 6.3.1 Provider tariffs

Annex B presents the evolution of provider tariffs in Thies public health facilities (health posts) from 2000 to 20003. The main finding is the remarkable stability of provider tariffs in the period. Perhaps this should not be surprising, as the tariffs are under state control and cannot be increased by providers.

A second important finding is that the data confirm the widely held perception that MHO members are systematically charged less for the health services than non-members. Across the whole range of services, with few exceptions, members' tariffs are lower than those of non-members, even for low-risk services such as consultation and drugs.

---

### 6.3.2 Provider payment mechanism

Table 6.2 presents the payment mechanism in force between MHOs and primary health providers in Thies. Twenty-six providers stated that they charged MHOs for each act performed (fee for service), while one charged per illness episode or case.<sup>22</sup> Fee for service is less efficient (and potentially exposes MHOs to higher costs) than other methods, but it is doubtful that any other method could realistically be implemented with PHC providers in these circumstances.

**Table 6.2. Provider payment mechanisms at health posts and health centers**

Payment mechanism	Number of providers using mechanism
Per act (fee for service)	26
Daily fee	0
Per case or episode	1
Other	0

---

### 6.3.3 Provider revenue from MHOs

Table 6.3 shows providers' revenue from MHOs as a percentage of total provider revenue. The general conclusion is that revenue from MHOs, apart from the unique case of the Ngaye Ngaye health center in 2003, forms only a very small percentage of total provider revenues in the period of the study. If revenue from MHOs were a significant proportion of provider income, this would give the MHOs significant power in their overall dealings with the providers, which if wisely used could have a positive impact on their financial stability.

---

<sup>22</sup> Data for the hospitals were not available during the survey but for the Catholic hospital, all MHOs that contract with it are subject to a daily rate for hospital admission charges (excluding surgery cases). This type of contract has greatly assisted the MHOs as it requires fewer administrative skills to implement and to check pricing.

**Table 6.3. Revenue from MHOs as percentage of total PHC provider revenue**

Provider	Revenue from MHOs as % of total provider revenue			
	2000	2001	2002	2003
Poste de santé de Thiénaba Gare	0	1.4	7.5	6.8
Poste de santé St Joseph de Baback	0	0.0	0.0	1.0
Centre de santé du Dixième			0.0	1.0
Poste de santé de Pout		0.0	0.0	0.0
Poste de santé Médina Fall	0	0.4	3.0	5.3
Poste de santé de Mbour Thiès		1.9	0.5	0.2
Poste de santé Sam Pathé		1.1	1.0	1.3
Poste de santé Mariama Fandène				
Poste de santé Al Afi	4.5	4.5	4.5	4.5
Poste de santé de Nguinthe	0		0.0	0.0
Poste de santé Petit Thially	1.2	0.7	4.1	4.5
Case de santé de Ngaye Ngaye				59.5
Poste de santé de Méouane			8.3	5.6
Poste de santé Mboro				0.7
Centre de santé Tivaoune	0	0.0	0.1	0.1
Dispensaire catholique de Pandinou-Lehar	1.1	0.6	1.2	0.0
Poste de santé Fissel			0.0	0.0
Poste de santé Saly	0	0.0	0.0	0.0
Poste de santé de Téfess			0.0	8.1
Poste de santé de Mbour		0.0	0.0	0.0
Poste de santé Diamaguène			0.0	0.0
Centre de santé de Mbour	0	0.0		
Centre de santé de Khombole				0.0

## 7. Member Characteristics and Beneficiary Behavior

This section provides a summary of the findings from the household survey component of this study.<sup>23</sup> Box 4 lists mechanisms through which member characteristics and beneficiary behavior may affect the financial stability of MHOs. Based on this list, the first subsection highlights findings on household enrollment and risk factors such as adverse selection at both the household and individual levels. The second subsection looks at member characteristics associated with regularity of contributions and due payment. The third subsection describes the use of health care services, comparing the observed behavior of beneficiaries and non-beneficiaries. The final subsection discusses MHO loans to members.

### Box 4. Member characteristics and beneficiary behavior affecting MHO financial sustainability

- ▲ Household participation
- ▲ Risk profile
  - Risk factors compared to population at large (adverse selection)
- ▲ Regularity/rate of dues payment
- ▲ Health care utilization
  - Improved access
  - Moral hazard
- ▲ Loans/Rate of debt repayment

### 7.1 Household Participation and Risk Profile

Adverse selection is one of the main mechanisms by which household enrollment behavior may affect the financial stability of MHOs. To look at how adverse selection operates among MHOs in the Thies region, the current study did a comparative analysis of the demographic and socio-economic profiles of member and non-member households, based on descriptive analyses and regression results (Diop 2005).

Analyses at the household level suggest the following: First, larger households are more likely to enroll in MHOs than are smaller households. Second, the higher the number of women of childbearing age in the household, the more likely it is that the household will enroll in a MHO. Neither the number of children under age five nor the number of the elderly (over 50) in the household contribute to the likelihood of household enrollment. Third, households headed by a woman are more likely to enroll than are households headed by a man. Finally, the higher the income of the household, the more likely it is that

---

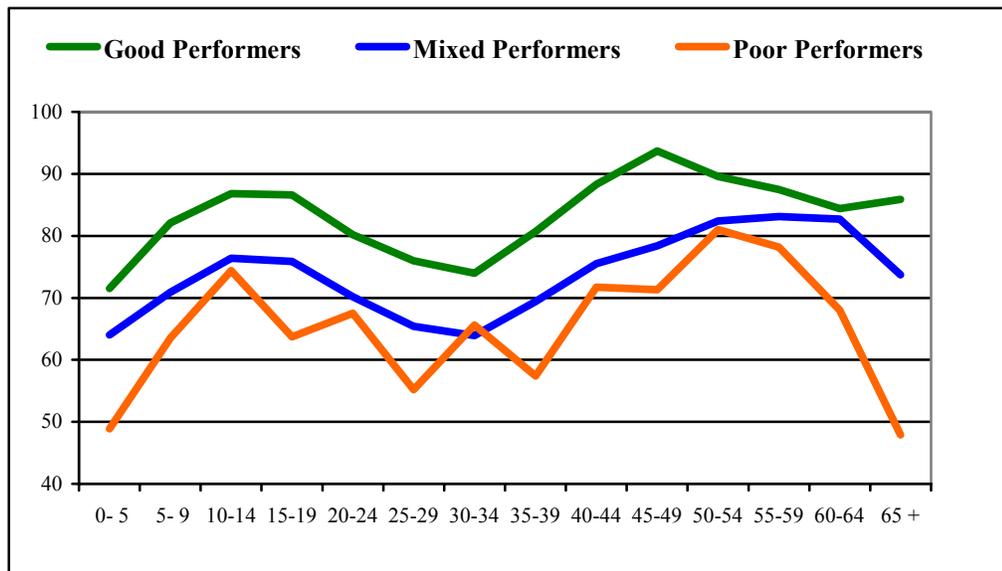
<sup>23</sup> For more details on the household survey results, readers are referred to Diop (2005).

the household will enroll; it should be kept in mind, of course, that most member households in the study area, other than those in Mbour department, are poor by any standard.

At the individual level, enrolled households are more likely to provide coverage to male children under 15 years of age, to elderly men over 55 years of age, and to women aged 30–54 years. Individuals with chronic illness (a small proportion of the population) are more likely to be covered. Individuals who self-report a better health status are less likely to be covered than are individuals who report worse health status. Finally, households with higher capacity to prepay (employed, higher income) are more likely to provide coverage to a larger number of their members.

Overall, these analyses suggest that selection processes in Thies may be operating in MHO enrollment at two levels: At the level of household enrollment, households with a greater number of higher-risk women of reproductive age are more likely to enroll than other households. At the level of individual coverage, only 72 percent of members are benefiting from coverage. Higher-risk women of reproductive age, male children, and males over 55 are more likely to be provided coverage among enrolled households.<sup>24</sup> There are signs also that individuals with poorer health status and chronic conditions are more likely to be provided coverage than healthier individuals. Finally, as Figure 7.1 suggests, these selection patterns are less prevalent among MHOs that are good financial performers compared to MHOs that are poor performers; MHOs which are mixed financial performers have an intermediate position.

**Figure 7.1. Proportion (%) of individuals within MHO-enrolled households who are beneficiaries of MHO services in the Thies region, by the category of MHO**



Source: Diop (2005): Figure 4.2

<sup>24</sup> The selectivity of enrollment and coverage of women at childbearing ages may not be related to the perception of higher health risks only. It may be reinforced by traditional roles of caregivers of adult women in the family; in other words, as the main health caregivers in the family, adult women may internalize more the costs and uncertainty associated with health care than men. It may also reflect the higher propensity of women to be involved into community-based associations compared to men.

## 7.2 Capacity to Prepay and Regularity of Contributions

Section 5.1 suggests that members' regular of dues (contributions) is strongly associated with the financial stability of the MHO in which they are enrolled. Hence, the study asked the following questions: Are current levels of contributions affordable for members? How do the characteristics of MHO members affect regularity of contributions in the Thies region?

Current MHO contribution policies and household information analyzed in this study suggest that most member households can afford the current level of contributions (Diop 2005). Among member households, the incidence of MHO contribution is about 1.2 percent of total household expenditures and around 5 percent of non-food expenditures (Table 7.1). For the poorest 10 percent of member households, the incidence of MHO contribution is less than 4 percent of total household expenditures and around 15 percent of non-food expenditures; among the richest 10 percent, these proportions are 0.4 percent and 1.6 percent respectively. In other words, the household survey data suggest that current levels of contributions make MHO membership financially accessible for the majority of households. Nevertheless, the combination of contribution policies and procedures, monthly fluctuations of incomes, and poor access to credit may impair this financial access.

**Table 7.1. Capacity to pay: Incidence of premium contributions on HMO member households in the Thies region**

Per capita household monthly expenditures by decile	Household monthly expenditures (FCFA)			Expected monthly premium payments if all household members are enrolled	Ratio (%) of expected premium contribution over actual expenditures		
	All	Non-food	Health		(4)/(1)	(4)/(2)	(4)/(3)
	(1)	(2)	(3)	(4)			
1	82,705	20,635	2,663	3,111	3.8	15.1	116.8
2	95,467	22,509	2,288	2,222	2.3	9.9	97.1
3	120,103	33,044	4,263	2,196	1.8	6.6	51.5
4	139,751	38,026	5,957	2,149	1.5	5.7	36.1
5	141,427	35,396	5,612	1,847	1.3	5.2	32.9
6	156,846	40,413	5,624	1,759	1.1	4.4	31.3
7	187,688	49,809	8,305	1,755	0.9	3.5	21.1
8	197,279	41,016	5,007	1,526	0.8	3.7	30.5
9	212,821	56,500	10,275	1,383	0.6	2.4	13.5
10	210,135	60,297	9,344	942	0.4	1.6	10.1
Total	155,997	40,004	5,939	1,872	1.2	4.7	31.5

Source: Diop (2005): Table 5.1b

These conclusions are consistent with the information on the regularity of MHO contributions based on household data. The proportion of members who report regularly paying their contributions is as low as 60 percent,<sup>25</sup> and much lower in the Mbour department (28 percent) which is relatively wealthier, compared to the poorer departments of Thies (65 percent) and Tivaouane (74 percent). Only 53 percent of

<sup>25</sup> Compared to an average of 63 percent based on the MHO data: see Table 5.2 in Section 5.1.

male members report regularly paying their contributions compared to female members (70 percent). Indeed, multiple regression results based on household data suggest that regularity of contributions into MHOs is mostly associated with gender, religious affiliation, and ethnicity, rather than variables related to the level or stability of household income such as a member's occupation or household expenditures (see Diop 2005: Table 5.2b). Finally, members use a variety of sources to pay for their contributions, including salaries and savings, harvest products, and the exceptional sale of goods and transfers. Hence, the relatively low levels of regular payment of contributions may be explained by gaps in sensitization of members and/or weaknesses in the administration of contribution collection processes.

**Table 7.2. Regression results: Regularity of contributions among nuclear family units that are MHO members in the Thies Region**

(Heads of nuclear family units)

$Y_i = 1$ , if the head of the nuclear family report regular contributions to the MHO $= 0$ , otherwise. $\ln[\text{Prob}(Y_i = 1) / \text{Prob}(Y_i = 0)] = \alpha + \beta X_i$				
		B	exp(b)	Sig.
Household size		-0.0022	0.9978	0.9328
Female-headed household		0.5642	1.7581	0.0315
Ethnic group of head of household (base: others)	Wolof	0.9133	2.4925	0.0074
	Serer	0.5614	1.7531	0.1066
	Poular	1.2563	3.5125	0.0053
Religious group of HH (base: others)	Mouride	0.7345	2.0845	0.0573
	Tidjane	0.6503	1.9161	0.0705
	Christian	2.0273	7.5932	0.0000
Level of education of HH (base: No schooling)	Primary	0.0351	1.0357	0.8949
	Secondary	0.1992	1.2204	0.5082
Occupation of HH (base: Not occupied)	Agriculture	0.0330	1.0335	0.9191
	Trade\Commerce	0.3546	1.4257	0.2457
	Administration	0.4740	1.6064	0.2278
Type of residence (base: rural)	Urban	-0.3194	0.7266	0.1924
Availability of health facility in the village or urban neighborhood (base: No)	Yes	-0.2558	0.7743	0.3170
Economic status of household (base: Poorest 20%)	Middle-poor 20%	0.2922	1.3394	0.3897
	Middle 20%	-0.2389	0.7875	0.5015
	Middle-rich 20%	-0.1090	0.8967	0.7777
	Richest 20%	0.6493	1.9142	0.1233
Constant		-1.0837	0.3383	0.0504

Source: Diop (2005): Table 5.2b

### 7.3 Health Care Utilization

Section 7.1 concluded that adverse selection may be operating in the MHO enrollment in the Thies region. For such selection processes to be reflected in the levels and stability of expenditures of MHOs,

however, they have to be mediated through the patterns of utilization of health care services among beneficiaries of MHOs. In addition, even in the absence of adverse selection, as financial barriers to access to health care are reduced by MHO coverage, levels and stability of expenditures of MHOs may be influenced by over-utilization of health care by beneficiaries, or unanticipated patterns of provider choice, and/or over-prescription by providers. This section summarizes the results of the comparative analyses of the patterns of utilization of health care between beneficiaries and non-beneficiaries of MHOs presented in greater details in Diop (2005).

First, the household survey data suggest that there are no significant differences between MHO beneficiaries and non-beneficiaries in the overall use of modern health care providers for curative purposes. Significant differences in the patterns of provider choice, however, are observed between the two groups: beneficiaries have a significantly higher tendency to use hospitals to remedy their illness compared to non-beneficiaries, who rely mainly on health posts. Indeed, access to hospital care was the founding motive of the first generation of MHOs in the Thies region, as discussed in Section 2; such original conditions are still reflected in the patterns of utilization of curative care by MHO beneficiaries. These patterns are consistent with the current belief among promoters and managers of MHOs in the Thies region, that members of MHOs bypass health posts and health centers to go to the hospitals when in need of health care. Now that MHOs are extending their benefit packages to include coverage of consultations and drugs, the continued prevalence of such patterns of utilization of care may reflect adversely on the stability of MHO expenditures.

Second, reproductive health care services recently have been introduced in the benefit packages of MHOs in the Thies region; however, such practices are still not as common as the inclusion of hospitalization, curative consultation, or essential drugs. Consequently, there is no noticeable difference in the use of family planning and prenatal care between MHO beneficiaries and non-beneficiaries. However, beneficiaries have a much higher propensity to use prenatal care services at hospitals compared to non-beneficiaries. In addition, the data suggest that coverage by MHOs has increased the proportion of deliveries which take place at modern health care providers; indeed, while 33 percent of deliveries continue to take place at home among non-beneficiaries, it had dropped to 14 percent among beneficiaries. Finally, the proportion of women who have had a postnatal visit is relatively low; it is higher, however, among non-beneficiaries compared to beneficiaries of MHOs.

Third, the levels of hospitalization are two times higher among MHO beneficiaries than among non-beneficiaries. Hospitalization rates are higher among women of childbearing ages, peaking at between 30 and 44 years of age, and they are much higher among women who are beneficiaries. Among men, hospitalizations rates are relatively low between 15 and 29 years of age. They increase steadily afterwards to peak after 45 years of age; at these older ages, male beneficiaries are four times more likely to be hospitalized compared to male non-beneficiaries. Nearly 50 percent of beneficiaries benefit from coverage for hospitalization-related expenditures, while non-beneficiaries do not benefit from any form of explicit solidarity mechanism. Consequently, out-of-pocket payments related to hospitalization reached FCFA 123,000 (US\$ 247) among non-beneficiaries, FCFA 128,000 (US\$ 256) among beneficiaries of MHOs who were not covered for hospitalization, down to FCFA 32,000 (US\$ 64) among beneficiaries of MHOs who were covered for hospitalization.

Finally, based on the data of utilization of curative care during the two weeks preceding the household survey, beneficiaries of MHOs which are good financial performers have an annualized number of health care visits of 0.848 per capita, compared to 0.660 visits per capita among beneficiaries of MHOs which are mixed performers, and 0.524 visits per capita among beneficiaries of MHOs which are poor performers. In contrast, based on the hospitalization data collected in the household survey, the proportion of individuals who are hospitalized is as low as 3.1 per 1000 among beneficiaries of MHOs

which are good performers, compared to 10.7 per 1000 among beneficiaries of MHOs which are mixed performers, and 4.5 per 1000 among beneficiaries of MHOs which are poor performers.

---

## 7.4 Loans and Debt Repayment

One final mechanism through which household behavior may affect the financial stability of MHOs may be through other, non-insurance financial relations between MHOs and their members. In the Thies region, these relations may include loans by the MHO to its members to cover co-payments related to health care, to finance the purchase of mosquito nets, to finance income-generation activities, and/or other reasons. Analyses of the household survey data, however, suggest that the proportion of members indebted to their MHO is relatively low: only 6.4 percent of members reported having any debt towards their respective MHO at the time of the survey. In addition, providing loans to members seems to be a local phenomenon: only 12 of the 27 MHOs in the sample have proportions of members who are indebted to the MHO which are higher than 10 percent; three of the 27 have proportions of members who are indebted to the MHO which are higher than 17 percent.

The main source of indebtedness of members towards their MHO is related to health care, specifically loans to cover co-payment charges. However, it is only in the Thies and Tivaouane departments that MHOs make loans to members for coverage of health care-related costs. As MHOs restructure their benefit packages towards more primary and preventive services, and large co-payments are to be paid by beneficiaries at the time of need, indebtedness of members could come to threaten MHO financial stability. This is particularly so as MHOs in Thies typically pay for services and then seek to recover co-payments from the member.

## 8. Conclusions on Financial Stability of MHOs

This study of the determinants of financial stability in MHOs in the Thies region of Senegal was limited by two main factors. First, while Thies is unusual in terms of its concentration of MHOs – there are few other regions of the world where such a high concentration of MHOs exists – there were still only 27 MHOs included in the study. This small number of MHOs inhibits the ability to draw strong conclusions. Furthermore, the quality of routine data at many of the MHOs was poor. MHOs frequently had incomplete records, for example, on the number of beneficiaries covered, the number of services reimbursed, and their patterns of expenditure. These concerns about data quality also make it difficult to be certain that the study has captured all the key factors affecting financial stability. That said, the study leads to a number of fairly strong conclusions.

Overall, the financial situation of many of the MHOs in the Thies region appears insecure. While a small number of MHOs appear to have a consistently good financial performance and be relatively well run, there is an equally large group which have a consistently negative financial balance and appear to be facing multiple management problems. Many more MHOs have a very mixed financial record. The financial data suggest that several schemes included in this analysis will not be able to continue unless they take rapid remedial measures to resolve their financial problems.

The conceptual framework underlying the study identified four main types of factors affecting financial stability, namely: the design features of MHOs, the management of MHOs, member characteristics and household behavior, and provider environment. Clearly some elements of these different factors are linked; adverse selection, for example, may be exacerbated by poor management of schemes, which fail to consistently apply risk protection mechanisms (such as ensuring that all household members register). What appear to be the main factors affecting financial performance of MHOs in Thies?

---

### 8.1 Adverse Selection

Several of the analyses suggest that adverse selection constitutes a severe problem for some MHOs. Adverse selection refers to the tendency for individuals with greater needs for health services to join a health insurance scheme, as the benefits for such individuals in joining are greater than for those with more limited health service needs. If this occurs, it is possible that premiums become insufficient to cover the higher-than-anticipated demand and negative financial balances occur.

---

#### 8.1.1 In Thies we see that:

- ▲ Households which likely have greater needs for health services (e.g., those which have more women of childbearing age) are more likely to join MHOs.

- ▲ Within member households, individuals with greater health care needs are more likely to be enrolled in the scheme as beneficiaries than are those with fewer needs.
- ▲ The problem of only enrolling particular household members (i.e., those with greater needs) is concentrated among poorer performing MHOs.
- ▲ These enrollment patterns do translate into differing utilization patterns across schemes, with schemes that are poor financial performers having greater utilization of hospitalization services than good performers, and lower utilization of primary care services than good performers.
- ▲ These patterns may be reinforced by health staff, who appear more likely to encourage sick and vulnerable individuals to join schemes.

In aggregate, these findings are highly suggestive that adverse selection is one reason behind poor financial performance of MHOs in the Thies region, and the findings indicate that the schemes need to aggressively address this problem.

---

## 8.2 Weak Financial Management of Schemes

Weak financial management appears to be the major reason for poor financial performance of schemes. This was evident in a number of respects.

---

### 8.2.1 Low Dues Recovery Rates

- ▲ There is overall an extremely low rate of dues recovery: schemes on average collect only 63 percent of the dues owed to them by the end of the year, and similarly only 60 percent of member households reported paying dues on a regular basis.
- ▲ Poor dues recovery does not appear to be due to inability of households to afford the premiums. Premium levels are relatively low compared to other household expenditures, and the regularity with which payments were made was highest in the poorest department. Regular payment of contributions is instead correlated with gender, religious affiliation, and ethnicity.
- ▲ Dues recovery appear significantly higher (73 percent) among MHOs with consistently good financial balances, compared to 53 percent among MHOs with poor financial balances, suggesting that it is indeed an important factor in determining financial outcomes.

---

### 8.2.2 Loans for Hospital Services and other types of Loans

The St Jean de Dieu mission hospital, which is the primary source of hospital care for all MHOs in the study, insists that the MHOs pay in full for the services provided to their members, and that the MHOs then take responsibility for recovering any co-payment. This in effect amounts to a loan for hospital services to members. A smaller number of MHOs also offered loans for (i) mosquito nets and (ii) income-generation activities.

- ▲ Overall, the rate of loan recovery for all of these types of loans is relatively low: around 50 percent for hospital service loans, 53 percent for income-generation loans, and 67 percent for mosquito net loans.
- ▲ While there appear to be few differences between loan recovery rates between different types of MHOs, the poorer performing ones are considerably more likely to offer loans for hospital services and income-generation activities than the better performing MHOs.
- ▲ While for many MHOs, bad debts associated with unpaid loans account for a relatively small proportion of their annual expenses, for a small number of MHOs these debts are significant.
- ▲ Only two of the MHOs studied had fixed repayment schedules for loans.

---

### 8.2.3 Changes to Benefit Packages

Since about 1998 there had been 60 changes to benefit packages. These changes were almost universally expansions of the benefit package, with more and more MHOs covering various primary care services. In contrast, since 2000 there had been only 12 changes to premium levels. If benefit packages are expanded, then it is imperative that new dues levels are also calculated and applied.

---

## 8.3 Financial Management tools and training

The study found that MHO managers had received relatively limited training in the basic skills needed to manage and operate MHOs. While 70 percent of managers had received training in administrative and financial management, less than 50 percent had received training in accounting, and less than 40 percent in community sensitization. There was suggestive, though not particularly strong evidence that use of financial tools – such as a cash book or record of service utilization – contributed to better financial performance. Many schemes lacked basic data necessary for effective management of the scheme. Schemes where formal feasibility studies had been conducted appeared to have stronger financial performance. While it is possible that the feasibility studies helped ensure appropriate scheme design, it is perhaps equally likely that the extensive interaction with scheme promoters during the period of the feasibility study helped further develop the skills of scheme managers.

Many of the factors having a negative impact on the financial stability of schemes relate to weak scheme management. For example, failure to collect dues was not found to be correlated with ability to pay but is instead more likely associated with a lack of sensitization by scheme managers.

---

## 8.4 Factors which did not affect financial performance

The literature suggests a number of additional factors which might negatively affect the financial stability of MHOs. In this study, several of these factors were found not to be significant, these factors include:

***Unstable or increasing provider tariffs*** – throughout the period of the study, the prices charged by providers in the Thies region had remained remarkably stable;

***Fraud and abuse*** was found to be only a relatively minor problem. While a number of instances of abuse of the scheme were reported, these occurred largely among scheme members (rather than scheme managers) and accounted for quite small financial losses;

***Small risk pools*** – the risk pools found among schemes in Thies were larger than is often thought to be the case in Senegal. Moreover, while many of the very poorly performing schemes had small risk pools, this was also true of many of the better performing schemes. Adverse selection (suggested in scheme data by a low ratio of beneficiaries to members) appeared more problematic than the size of risk pools per se. It should be noted, however, that for low-risk, high-cost events (particularly hospitalization and surgery) many schemes charge quite significant co-payments. These high levels of co-payment reduce the risks to the scheme, but also may give rise to financial difficulties for members.

## 9. Recommendations

Reinsurance is an appropriate mechanism to protect the financial stability of schemes in the face of random risks. In the Thies region, the primary problems regarding financial stability, at this point in time, stem not from random risks, but rather non-random ones such as weak financial management and adverse selection. Schemes need to address these systematic, non-random sources of risk before it makes sense to develop reinsurance mechanisms. Once these non-random sources of risk are addressed, there may be some arguments for developing a reinsurance function, particularly if co-payment levels for hospital inpatient care are reduced.

MHO schemes are continuously evolving, responding to the preferences of their members and changing external circumstances. MHO managers need to have stronger training in the basic elements of MHO management to enable them to steer the scheme effectively over time. Many of the recommendations made below identify specific elements of scheme management of which MHO managers need to be made more aware.

Schemes use financial management tools to varying degrees. Their basic data, such as information on the number of beneficiaries, financial data, and service utilization data often seem incomplete. There is a need for the standardization and application of a minimum set of required financial management tools.

As benefit packages increase, attention must be paid to (i) raising premiums appropriately to reflect the cost of new services offered and (ii) adjusting the amount of reserves needed to a new safe level commensurate with the higher monthly operational expenses that will be incurred. A reserve fund that was sufficient for nine months expenses will no longer be so if the benefit package is extended.

Dues collection is the primary source of income for all MHO schemes. In order to maintain (or improve) their financial stability, schemes need to increase their dues collection rate. In order to do this, more member sensitization is needed and the schemes may also wish to investigate ways in which to make dues payment as easy as possible for members.

Regulations that require all household members to join a scheme help prevent against adverse selection. Schemes need to move toward enforcing this requirement. If it is not feasible to require and enforce entire household membership, then the schemes should at least require that a certain proportion of household members (or number of people) join. Sensitization and member education will support this goal.

For some schemes, health loans to members to cover the costs of hospital care received has become a major financial problem, as members have not paid back the loan. There is a need to look critically at the justification for the co-payments that are almost universally applied by MHOs. If, as it appears from the study, such payments are destabilizing MHO finances, then such measures may not be effective. Co-payments are charged partly to prevent frivolous consumption (which may be unlikely at the hospital level in any case) but also to keep premiums at relatively low levels. It may make better sense to increase premiums and reduce co-payments. Further actuarial estimates of the implications of making such a shift are needed.



# Annex A: Drug Stock-outs

**Table A1. Average duration of provider stock-outs during last 6 months of 2003 of selected drugs: iron, paracetamol, chloroquine, and amoxicillin**

Drug	Month	Average duration (days)					
		0 days	0–25	25–50	50– 75	75– 100	>100
Iron	July	26	1	1			
	Aug	25	1	1			
	Sept	21	3	3			
	Oct	20	5	4			
	Nov	24	4				1
	Dec	26	2				1
Paracetamol	July	28					1
	Aug	27					2
	Sept	28	1				1
	Oct	26	2				
	Nov	26	2	1			
	Dec	27	1				
Chloroquine	July	28					
	Aug	27	1	1			
	Sept	28				1	
	Oct	28	1				
	Nov	27	1			1	
	Dec	28	1				
Amoxicillin	July	28				1	
	Aug	27		1			
	Sept	28					
	Oct	28					
	Nov	28					
	Dec	28					



# Annex B. Provider Tariffs

**Table B1. Provider tariffs, 2000–03**

Services	Unit	2000		2001		2002		2003	
		Mutualist	Non mutualist						
Consultation (child)		345	675	345	2550	345	2452	302	633
Consultation (adult)		408	733	393	733	393	712	360	689
Hospitalization		2300	4400	2300	4400	2300	4400	2083	3833
Normal Delivery		7500	7958	6813	7464	6519	7167	6083	6906
Cesarean		107500	120000	107500	120000	107500	120000	107500	120000
Drugs									
Iron		93	85	90	86	86	86	81	84
Paracetamol		100	92	95	92	91	92	85	88
Chloroquine		137	132	140	146	132	146	143	154
Amoxycillin		445	426	425	446	423	446	425	441
Labo Analyses		1680	3580	1680	3580	1680	3580	1680	3580
X-ray		3500	8750	3500	8750	3500	8750	3500	8750
Surgery		1250	6500	1250	6500	1250	6500	1250	6500
Ante-natal care		479	724	463	728	463	728	456	705
Post-natal care		455	746	456	829	456	829	441	788
Vaccinations		189	181	181	181	181	181	174	168
Evacuation		6500	6500	6500	6500	4833	4833	4833	4833
17,00 FP:Injectable		590	625	540	615	540	615	538	589
18,00 PF:Pill		307	340	269	321	269	321	255	304
19,00 PF:IUD		708,33	808,33	708,33	808,33	708,33	808,33	714,29	800
20,00 PF:Norplan		1375	1375	1375	1375	1375	1375	1500	1500
21,00 PF:Condom		43,75	35	35	35	35	445,83	445,83	33,33

## Annex C: References

- Akin J, Birdsall N, and Ferranti D. 1987. *Financing health services in developing countries: an agenda for reform*. Washington, DC: World Bank.
- Atim C. 1998. Contribution of Mutual Health Organizations to Financing, Delivery, and Access to Health Care in West and Central Africa: Synthesis of Research in Nine Countries. Bethesda, MD: Partnerships for Health Reform, Abt Associates Inc.
- Bennett S, Gamble Kelley A, and Silvers B. 2004. 21 Questions of CBHF: An Overview of Community-based Health Financing. Bethesda, MD: Partners for Health Reform*plus*, Abt Associates Inc.
- Bennett S, Creese AL, and Monasch R. 1998. Health Insurance Schemes for People Outside Formal Sector Employment. Geneva: World Health Organization .
- Concertation. Septembre 2000: Base de données sur les mutuelles de santé et leurs structures d'appui, travaux de recherche dans 11 pays d'Afrique : le Sénégal.
- Concertation. Various years : 1997, 2000, 2003. Inventaires Concertation Mutuelles de Santé Afrique.
- Creese A and Kutzin J. 1995. *Lessons from cost recovery in health*. SHS/NHP. Forum on Health Sector Reform (Discussion Paper No 2.). Geneva: World Health Organization.
- Criel B. 1998. District-Based Health Insurance in Sub-Saharan Africa: Part I, From Theory to Practice ITG Press, Antwerp. Available from <http://www.itg.be/itg/GeneralSite/generalpage.asp?wpid=49&miid=43&RND=167251#shsop> downloaded 9 November 2005.
- Diop F. 2005. Determinants of the financial sustainability of mutuelles: Household survey component. Technical Report. Bethesda, MD: Partners For Health Reform*plus*, Abt Associates.
- Dror D and Preker A, eds. 2002. Social Reinsurance: A New Approach to Sustainable Community Health Financing. Geneva: International Labour Office and Washington DC: The World Bank.
- Ekman B. 2004. Community-Based Health Insurance in Low-Income Countries: A Systematic Review of the Evidence. *Health Policy and Planning* 19 5 (2004): 249-70.
- Evans RG, Barer ML, and Stoddart GL. 1993. *User fees for health care: why a bad idea keeps coming back*. Working Paper 26. Toronto: CIAR Program in Population Health.
- Fairbank A. 2003. Sources of Financial Instability of Community-Based Health Insurance Schemes: How Could Social Reinsurance Help? Technical Report Bethesda, MD: Partners for Health Reform*plus*, Abt Associates Inc.

- Franco L Miller, Mbengue C, and Atim C. 2004. Social Participation in the Development of Mutual Health Organizations in Senegal. Technical Report Bethesda, MD: Partners for Health Reformplus, Abt Associates Inc.
- Griffin C and Shaw RP. 1995. *Health Insurance in Africa: Aims, Findings, Policy Implications*. Washington, DC: World Bank.
- Jutting, Johannes P. Sept 2001. The Impact of Health Insurance on Access to Health Care and Financial Protection in Rural Developing Countries: The Example of Senegal. HNP Discussion Paper. Washington, DC: The World Bank.
- Lafond A.K. 1995. *Sustaining Primary Health Care*. London: Earthscan Publications Ltd.
- Ndiaye Pascal. 2004. Presentation to the Concertation. Paris.
- Preker A et al. 2002. Health Care Financing for Rural and Low-Income Populations: The Role of Communities in Resource Mobilization and Risk Sharing. Washington, DC: The World Bank.
- République du Sénégal Ministère de la Santé, CAS/PNDS/Partenariat. Juillet 2004. Plan stratégique de développement des mutuelles de santé au Sénégal.
- Shaw RP and Griffin C. 1995. *Financing health care in sub-Saharan Africa through user fees and insurance*. Washington, DC: World Bank.
- World Health Organization. 2000. Macroeconomics and Health: Investing in Health for Economic Development, Report of the Commission on Macroeconomics and Health. Geneva.
- WHO. 2005. The World Health Report. Geneva.