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HEALTH SECTOR COST RECOVERY IN CHAD
WITH SPECIAL REFERENCE TO THE PROVINCE OF MOYEN CHARI:
A REVIEW AND EVALUATION OF PAST EXPERIENCE,
AND AN ANALYSIS OF FUTURE POTENTIAL

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Executive Summary

This report reviews and evaluates current and past experiences with health sector cost recovery in Chad -- much of it occurring in the private, not-for-profit sector -- and assesses the future potential for public sector cost recovery in the province of Moyen Chari.

Section II of the report examines the overall financial position of the Chadian health sector. Drawing on household expenditure data from Moyen Chari, it estimates the level of private consumption expenditures on health care, and contrasts this with public and foreign health sector outlays. It reveals that public health sector expenditures finance a relatively small percentage of the total costs of curative care consumption, and therefore, that the recent reductions in public health sector subsidization are unlikely to have had a serious effect on the welfare of most Chadian households. Rather, it is more likely that the recent decline in per capita incomes has had a much more deleterious impact on the welfare of the Chadian population.

Section III of the report reviews health sector cost recovery experiences outside the USAID-supported Chad Child Survival Project areas. It reveals that there is considerable variation in cost recovery approaches used in Chad. Most projects, however, identify minor operating costs, drug re supply costs, and some part of total labor costs for cost recovery financing. Not surprisingly, differences between the project areas and between their dispensaries in the costs of service delivery, in pricing, and in utilization result in considerable variation in cost recovery performance. It is concluded, therefore, that is not safe to generalize from one dispensary's experience, or even from a "typical" dispensary's experience, when setting cost recovery policies.

Section IV of the report presents an analysis of the supply and use of dispensary-based curative health services in Moyen Chari. Using household level utilization and expenditure data obtained from the CCSP baseline survey, the analysis reveals that rural households are not only significantly less able to pay for health care than urban households, but (perhaps as a consequence of this) also use dispensary-based curative care much less often than wealthier urban households when they are sick. Somewhat paradoxically, however, the use of dispensary-based curative care within rural and urban communities is not significantly correlated with ability to pay. Section IV also projects that the number of rural sick who will be willing to pay the newly instituted cost recovery prices in Moyen Chari will be inadequate to enable rural public dispensaries to break-even financially. As a result, it is recommended that Moyen Chari move systematically towards the adoption of a flexible pricing arrangement that will allow dispensaries to set their prices to reflect local supply and demand realities.

Section V of the report reviews the history of cost recovery policy development in Moyen Chari to date, and provides further evidence that the recently legislated uniform prices for all private and public dispensaries will jeopardize the financial sustainability of many of these dispensaries, and particularly the rural public dispensaries. The section also calculates the total drug requirements for effectively launching public health sector cost recovery activities in Moyen Chari, and demonstrates that currently budgeted funds are inadequate to procure the quantity of drugs needed.

Finally, the report ends in Section VI with a summary of the activities deemed necessary for effectively launching public sector cost recovery activities in Moyen Chari on a broader scale.

Acknowledgments

This report is the product of a group effort carried out under the Chad Child Survival Project. It has benefited greatly from the assistance and insights provided by a large number of people in Chad and, in particular, in the prefecture of Moyen Chari. The content and scope of the report owes much to Dr. Daugla, the Medecin-Chef of Moyen Chari, and Dr. Konate, the CCSP Health Planner, who provided the consultant with invaluable guidance, analytic insight, and technical and administrative assistance during his assignment. Because of their direct and active involvement, this work has truly been a collaborative effort -- the first, I hope, of many more as part of the CCSP project. Special thanks must also be extended to Dr. Albert Burki of ITS who gave an extraordinary amount of his time in order to ensure that the CCSP could benefit from his considerable experience in the area of health care finance in Moyen Chari.

Finally, I would also like to extend particular thanks to Dr. Anita Mackie of USAID and Dr. Bernard Francois of the BSPE for their direction and support in carrying out this work. Without all the background documentation and commentary they provided, the consultant could not have gained as detailed a picture of current and past cost recovery efforts in Chad.

I. Introduction

This is the first technical report on cost recovery to be produced under the USAID-sponsored Chad Child Survival Project (CCSP). Because it is the first report, it is necessarily much more comprehensive than future reports will need to be. The report attempts to put the nascent cost recovery efforts in the province of Moyen Chari into the broader context of similar, but more developed, efforts elsewhere in Chad. By reviewing these other cost recovery experiences, the report hopes to provide public health officials in Moyen Chari (and later in the other two CCSP provinces of Logon Oriental and Salamat), with a sound information base upon which to base their own cost recovery policy decisions. It is also our hope that this synthesis will be of use to the other health projects in Chad who are at similar stages of developing cost recovery initiatives.

The technical content of the report begins in section II which provides a brief review of the overall financial position of Chad's health sector when public, private and foreign resources are accounted for. Section III examines the cost recovery approaches and experiences of a number of health projects located outside the CCSP project areas in Chad. Particular attention is paid here to: (1) identifying and assessing the magnitude of the input costs that are typically financed through cost recovery; (2) evaluating the alternative pricing policies employed; and (3) assessing the cost recovery performance of these projects. In addition, data from the projects are used to describe how to conduct break-even financial analysis. This is followed in Section IV by an analysis of the supply and use of health services in three CCSP-assisted districts of Moyen Chari. The analysis draws extensively on household level health utilization and expenditure data generated in the CCSP's baseline survey. It examines both the ability to pay for care and makes

projections of the number of patients who will be willing to pay Moyen Chari's newly established cost recovery prices for publicly provided dispensary-based curative care. Section V of the report then reviews public sector cost recovery activities that have already been undertaken in Moyen Chari. The review focuses particular attention on issues of pricing and drug supply. Finally, the report ends in Section VI with a detailed summary of activities deemed necessary to effectively launch cost recovery in all public health facilities in Moyen Chari.

II. The Overall Financial Position of the Chadian Health Sector

Given that data on the Chadian health sector finances are not available after fiscal year (FY) 1991, it is not possible to determine the current financial position of the sector. Anecdotal evidence from Chad, however, suggests that the public sector financing position has deteriorated significantly since 1992, and that the government's ability to subsidize the provision of health services has been seriously eroded. While this deterioration has no doubt had a negative impact on the welfare of some Chadian households, 1992 household-level data from Moyen Chari suggest that the impact may have been relatively small for households in the southern region of the country since public health sector subsidies cover a relatively small percentage of the total cost of supplying care to these households. The Chadian population's ability to obtain health care when needed has probably been much more negatively affected by the decline in per capita incomes that is believed to have occurred in recent years since private outlays cover the majority of the cost of supplying care. For populations residing in areas where externally funded health projects are being implemented, access to foreign subsidies has no doubt mitigated to some extent the adverse welfare effects of the worsening economy.

Prior to 1992 Chadian public finance data suggest that the government exerted a progressively increasing effort to finance health sector activities, and to make public health sector expenditures more efficient. Data from the FY 1988 through FY 1991 period presented in Table II.1 reveal that actual government health sector expenditures increased both in nominal (not adjusted for inflation) terms, and as a share of total government expenditures. Moreover, the data indicate that the government improved the efficiency of its health sector expenditures by substantially increasing the share of total health sector outlays allocated to the supply of non-personnel inputs. From FY 1985 to FY 1992, the share allocated to non-personnel inputs increased from 7.7% to 28.6%.

Table II.1: Evolution in Government Health Sector Expenditures in Chad (FY 1985 - FY 1991)
(In thousands of FCFA)

Year	Total Nominal Budgeted Expenditures	Total Nominal Actual Expenditures	Nominal Budgeted Health Sector Expenditures			Nominal Actual Health Sector Expenditures			[H] as a % of [B]	[F] as a % of [H]	[G] as a % of [H]
			Personnel	Non-Personnel	Total	Personnel	Non-Personnel	Total			
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]
1985	39,836,503	25,167,000	952,916	593,600	1,546,516	952,916	80,000	1,032,916	4.1%	92.3%	7.7%
1986	42,550,420	27,711,000	967,592	304,600	1,272,192	967,592	85,000	1,052,592	3.8%	91.9%	8.1%
1987	25,400,607	24,768,000	671,370	122,248	739,618	617,370	90,435	707,805	2.9%	87.2%	12.8%
1988	27,113,772	30,972,000	701,264	181,836	883,100	701,264	90,935	792,199	2.6%	88.5%	11.5%
1989	39,153,626	42,235,000	1,289,671	334,765	1,624,436	1,128,182	152,117	1,280,299	3.0%	88.1%	11.9%
1990	40,107,000	39,709,000	1,195,093	524,621	1,719,714	1,139,280	396,481	1,534,761	3.9%	74.2%	25.8%
1991	40,925,878	39,807,000	1,456,974	622,751	2,079,625	1,557,460	622,751	2,180,211	5.5%	71.4%	28.6%

Source: BSPE, 1991, Annuaire de Statistiques Socio-Sanitaires du Tchad.

The government's increased financial commitment to the health sector prior to FY 1992 can also be seen clearly in Table II.2 where average annual growth rates for health sector expenditures are reported.¹ Looking at column [E] in rows [1], [4] and [7], it can be seen that actual public health sector outlays grew at a fast rate even when adjusted for inflation and population growth. Note too that government health expenditures grew at a much faster rate than both external aid (see rows [2], [5] and [8]), and estimated private expenditures (see rows [3], [6] and [9]). As a result, the government share of total health sector expenditures (public plus private plus foreign aid) increased from approximately 3% in FY 1988 to approximately 6% or 7% in FY 1991 (see rows [10] through [12]).

Despite the growth in the public share of total health sector expenditures over the FY 1988 through FY 1991 period, it is also clear from Table II.2 that consumers continued to pay for the majority of total health care costs in Chad. In FY 1991, for instance, estimated total nominal health care expenditures per capita were divided between the government, private consumers, and foreign aid in the following way:

	Hypothesis I (Rural)	Hypothesis II (Urban)
Public Subsidy	376	376
External Aid	1,127	1,127
Private Cost²	3,545	5,192
	5,048	6,695

¹ Growth rates have been computed by method of least squares. The least squares growth rate, r , is estimated by fitting a least squares linear trend line to the logarithm of the annual values of the variable (in this case Statutory Allocation revenues) in the relevant period. More specifically, the regression equation takes the form $\log X_t = a + bt + e_t$, where this is equivalent to the logarithmic transformation of the compound growth equation, $X_t = X_0(1+r)^t$, where X is the variable, t is time ($t = 0$ in the first period, $t = 1$ in the second period, etc.), $a = \log X_0$, $b = \log(1+r)$, and e_t is the error term. If \hat{b} is the

least squares estimate of b , then the annual average growth rate, r , is obtained as $\left[\text{antilog}(\hat{b}) \right] - 1$.

² For an Explanation of how the private costs of health care were estimated, see the notes section of Table II.2

Table II.2: Total Chadian Health Sector Expenditures (1988 - 1991)

	[A]	[B]	[C]	[D]	[E]
	1988	1989	1990	1991	Average Annual Growth Rate
[1] Actual Nominal Public (Billions of CFA)	0.792	1.230	1.534	2.180	0.39
[2] Actual Nominal External Aid (Billions of CFA)	5.411	5.995	5.541	6.518	0.049
[3] Estimated Nominal Private (Billions of CFA)					
Hypothesis I (Rural)	11.00	11.10	11.40	12.40	0.039
Hypothesis II (Urban)	15.90	16.00	16.40	18.10	0.042
[4] Actual Real Public (Billions of 1977 CFA)	0.501	0.755	0.935	1.31	0.36
[5] Actual Real External Aid (Billions of 1977 CFA)	3.425	3.678	3.379	3.927	0.033
[6] Estimated Real Private (Billions of 1977 CFA)					
Hypothesis I (Rural)	6.96	6.81	6.99	7.56	0.028
Hypothesis II (Urban)	10.06	9.82	10.06	11.03	0.030
[7] Actual Real Per Capita Public (In 1977 CFA)	93	137	164	226	0.33
[8] Actual Real Per Capita External Aid (In 1977 CFA)	634	669	593	677	0.007
[9] Estimated Real Per Capita Private (In 1977 CFA)					
Hypothesis I (Rural)	2,040	2,010	2,000	2,130	0.013
Hypothesis II (Urban)	2,950	2,900	2,880	3,120	0.016
[10] Actual Real Public Health Care Expenditures as a % of Total Real Public + Aid + Private Health Care Expenditures					
Hypothesis I (Rural)	3.3%	5.0%	5.9%	7.4%	
Hypothesis II (Urban)	2.5%	3.8%	4.5%	5.6%	
[11] Actual Real Health Care Aid Expenditures as a % of Total Real Public + Aid + Private Health Care Expenditures					
Hypothesis I (Rural)	22.9%	23.7%	21.5%	22.3%	
Hypothesis II (Urban)	17.3%	17.9%	16.3%	16.8%	
[12] Estimated Real Private Health Care Expenditures as a % of Total Real Public + Aid + Private Health Care Expenditures					
Hypothesis I (Rural)	73.8%	71.3%	72.6%	70.3%	
Hypothesis II (Urban)	80.2%	78.3%	79.2%	77.6%	

Notes: The estimate private expenditures are derived from the CCSP baseline survey results (See Devres, 1992). Hypothesis I is based on the rural strata health budget share estimate of 5.6% of total household expenditures, and an expenditure elasticity of 1.2. Hypothesis II is based on the urban strata health budget share estimate of 8.1% of total household expenditures and an expenditure elasticity of 1.53. Readers are referred to Annex 1 for further details on the estimation of health budget share and health expenditure elasticities.

Two important points from the standpoint of public sector cost recovery emerge from these expenditure estimates. The first is that even before the recent economic downturn, the public subsidy allocated to health care accounted for no more than 10% of total expenditures on health care in Chad. The second is that Chadians are accustomed to paying a considerable amount privately out of their own pockets to consume modern and traditional health care services. These points provide a preliminary indication that: (1) reductions in public subsidization (either through reduced expenditures or through increases in the price charged for publicly supplied care) may not have a major impact on many health care consumers; and (2) increases in public curative care pricing may not induce a large percentage of consumers to substitute non-public forms of health care for publicly supplied care since these non-public forms of care are also costly.

In order to get a more precise indication of the impact of increases in public health sector pricing on utilization of these services, we will need to examine the household level data from Moyen Chari. Before doing so, however, we set the context for our analysis of Moyen Chari by reviewing the health sector cost recovery experience that has occurred elsewhere in Chad.

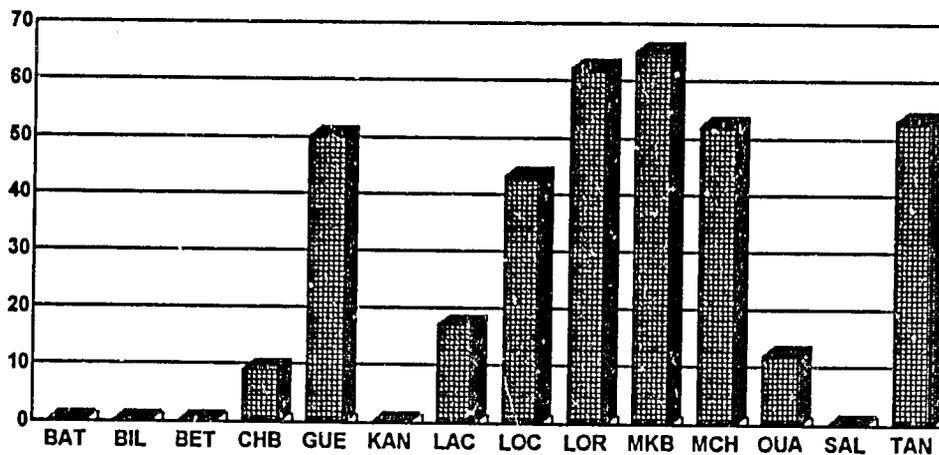
III. A Review of Health Sector Cost Recovery in Chad

Legal authorization for the introduction of cost recovery (CR) as a means of partially financing the recurrent costs of Chad's public health care system was granted in October, 1990 through the interministerial decree N. 102/MSP/SE/DG/1990 (see Annex 2 for a copy of the decree). The decree authorizes both primary and secondary level health care facilities to charge outpatients a fee which covers the treatment they receive for a single illness episode.³ The decree authorizes health facilities to retain all revenues generated from the outpatient fees, and to manage the use of these funds under the direction of a Health Management Committee (HMC). Article 7 of the decree enjoins the HMCs to use the cost recovery funds to finance the resupply of drugs and then, subject to the availability of funds, to cover part of the remaining non-salary operating costs. Finally, the decree requires all HMCs to report their revenues and expenditures to the Ministry of Finance and the MOH on a trimestrial basis.

According to the MOH's Bureau de Statistiques, Plannification et Etudes (BSPE), nine of the fourteen provinces in Chad had introduced some form of cost recovery as of 1991. Though accurate data on the proportion of public facilities that have introduced cost recovery in nominal accordance with decree N. 102 are not available, Graph III.1 reports the percentage of public plus private, not-for-profit, dispensaries that are currently charging patients for care.

³ Though we will focus in this report on cost recovery at the primary care level, it is important to stress that decree N. 102 specifically authorizes the introduction of cost recovery for outpatient referral cases treated at the hospital level. Given that the MOH is also promulgating a policy of integrated health care under which hospitals are only to treat patients who have been referred to them from primary care facilities (with the exception of emergency cases), the decree in effect authorizes cost recovery for all non-emergency hospital outpatient cases.

Graph III.1: Percentage of Chadian Public and Private Dispensaries that Were Charging for Care in 1991



Legend: BAT = Batha; BIL = Biltine; BET = B.E.T.; CHB = Chari Baguirmi; GUE = Guera; KAN = Kanem; LAC = Lac; LOC = Logon Occidental; LOR = Logon Oriental; MKB = Mayo Kebbi; MCH = Moyen Chari; OUA = Ouaddai; SAL = Salamat; TAN = Tandjile.

While Graph III.1 is undoubtedly a poor indicator of the degree to which health facilities are conforming with decree N. 102, it does demonstrate that a large percentage of people living in health zones (known in French as Zone de Responsabilite and, therefore, referred to throughout the remainder of the text as ZR) where there are functioning dispensaries must pay for the care they receive at these facilities.⁴ Still, it is also clear that Chad has a long way to go to fully implement decree N. 102.

Despite the fact that full implementation of decree N. 102 remains a long run objective for the Chadian health sector, there is no doubt that the country has already had sufficient experience with cost recovery to demonstrate that this method of finance can cover a considerable proportion of the recurrent costs of primary care provision when the funds are properly managed. Assuming for the moment that the management aspects of

⁴ The major exception is the northern prefectures and the prefecture of Salamat which is one of the three CCSP prefectures. Interestingly, the two other CCSP prefectures (Moyen Chari and Logon Oriental) are among those with the highest percentage of dispensaries currently charging for care.

cost recovery can be successfully handled in the public sector, we know that public sector CR performance depends upon the costs of supplying a given quantity and quality of care, as well as the quantity of care demanded at given prices. It is helpful, therefore, to examine these supply and demand-side issues within the context of several Chadian health projects where cost recovery has been emphasized. We start with an outline of the kinds of costs typically included in these cost recovery efforts, then review the pricing policies adopted, and finally evaluate the extent to which cost recovery has been achieved.

Table III.1 summarizes the types of costs that five Chadian health care projects reportedly finance through cost recovery.⁵ As can be seen from the table, all of the projects report the desire to cover 100% of minor dispensary operating costs through CR financing. These costs include payments for electricity and water supply, and the purchase of cleaning materials and stationaries. In addition, all the projects also report that they intend to use CR funds to finance the resupply of essential drugs (including dressings). Four out of the five project reviewed report that they anticipate that CR funds will be sufficient to finance 100% of the drug resupply costs, while the other project intends only to cover 30% of these resupply costs reportedly so that fees can be kept in line with ability to pay, and so that some of the funds can be used to finance incentive payments for dispensary personnel.

The desire to use cost recovery funds to finance incentive or salary payments for dispensary personnel is nearly universal among the projects reviewed. This is understandable, even in the case of public sector projects, given the chronic non-payment of government salaries and the consequent demotivating impact this has had on dispensary staff. Four of the five projects also report that they intend to use CR funds to defray basic dispensary maintenance costs. Two of the five intend to use some of the funds to cover the costs of printing drug and financial management forms, while only one reports that it

⁵ Projects were included in this review on the basis of the availability of information.

Table III.1: Input Costs Reportedly Financed by Cost Recovery in Five Chadian Health Projects

	BELACD (Pala)	FED (Ouadda/ Abeche)	SECADEV (Chari B/Guera)	OMS (Lac)	PADS (N'Djamena)
Inputs to be financed through cost recovery and/or community contributions and (% of costs to be recovered)	<p>Recurrent Costs:</p> <p><u>Fixed costs:</u></p> <ul style="list-style-type: none"> • Salaries of "non-qualified" staff (100%) <p><u>Variable costs:</u></p> <ul style="list-style-type: none"> • Essential drugs (100%) • Diverse minor operating inputs (100%) • Maintenance (100%) • Transport (other than for emergency evacuations) (33%) <p>Investment Costs:</p> <ul style="list-style-type: none"> • Small equipment (100%) • Small infrastructure development 	<ul style="list-style-type: none"> • Essential drugs (30% after one year of operation) • Diverse minor operating inputs (100%) • Incentive payment to all personnel after 6 months of operation (100%) • Printing costs of user tickets, health cards, and drug and financial management forms 	<ul style="list-style-type: none"> • Essential drugs • Diverse minor operating inputs <ul style="list-style-type: none"> Water Petrol soap bics • Maintenance of premises • Salaries of "non-qualified" staff 	<ul style="list-style-type: none"> • Essential drugs • Diverse minor operating inputs • Maintenance of building 	<ul style="list-style-type: none"> • Essential drugs (100%) • Management forms (100%) • Cleaning & maintenance products (100%) • Electricity • Incentive for personnel

uses the funds to finance a portion of dispensary transportation costs (for drug distribution, supervision, and emergency evacuations), as well as small investments in equipment and infrastructure development.

Given the variation between the five projects in the types of input costs identified for cost recovery, it is not surprising that there is also variation in the pricing policies adopted. Table III.2 provides a summary of the prevailing prices charged by dispensaries operating under the five projects. There are a number of interesting aspects of these pricing policies to note. The first is that the Catholic funded projects (BELACD and SECADEV), unlike the three multilateral funded projects (the FED, OMS, and PADS), have adopted a flexible pricing strategy that allows fee rates to vary between health facilities. Under flexible pricing systems the potential exists for fee rates to be set in accordance with local supply and demand conditions. As will be seen below, this kind of pricing flexibility is essential from a standpoint of long run financial sustainability. Thus, the establishment of a uniform set of prices by the three multilaterally funded projects should be viewed as a short run measure designed to facilitate the introduction of cost recovery by reducing its administrative complexity. The uniform pricing strategy can be sustained so long as the projects are prepared to finance the budget deficits that are likely to result.

The second aspect of the pricing policies that is interesting to note is that all five projects have chosen to have adult consumers subsidize the provision of curative care to children under the age of five. They do this by charging children a price per illness episode that is half the adult price. One of the advantages with this type of age-based differential pricing is that it is equity improving from a needs-based perspective since under five year old children are a particularly vulnerable group from a public health standpoint. The policy is also efficiency enhancing to the extent that the marginal cost of treating child illnesses is less than that of treating adult illnesses. The disadvantages are that it increases the complexity and cost of administering the fees, and, to the extent that

Table III.2: A Comparison of Cost Recovery Pricing in Five Chadian Health Projects

	BELACD (Pala)		FED (Ouaddai/ Abeche)	SECADEV (Chari B/Guera)		OMS (Lac)	PADS (N'Djamena)																																									
Pricing system and prevailing rates	Curative (c):		Curative:	Curative:		Curative: (b)	Curative: (a)																																									
		<table border="1"> <thead> <tr> <th></th> <th>Children</th> <th>Adults</th> </tr> </thead> <tbody> <tr> <td>• DOMO</td> <td>300F</td> <td>600F</td> </tr> <tr> <td>• TAGAL</td> <td>250F</td> <td>650F</td> </tr> <tr> <td>• GOUNOU-GAN</td> <td>300F</td> <td>650F</td> </tr> <tr> <td>• SERE</td> <td>450F (Chadian) 700F (Cameroonian)</td> <td>850F (Chadian) 1500F (Camer)</td> </tr> <tr> <td>• KOUPOR</td> <td>300F</td> <td>600F</td> </tr> <tr> <td>• BISSI MAFOU</td> <td>500F (from zone) 800F (outside zone)</td> <td>600F (from zone) 1000F (outside zone)</td> </tr> </tbody> </table>		Children	Adults	• DOMO	300F	600F	• TAGAL	250F	650F	• GOUNOU-GAN	300F	650F	• SERE	450F (Chadian) 700F (Cameroonian)	850F (Chadian) 1500F (Camer)	• KOUPOR	300F	600F	• BISSI MAFOU	500F (from zone) 800F (outside zone)	600F (from zone) 1000F (outside zone)	Dispensary: Children = 125F Adults = 250F Indigents = 0F (g) Abeche hospital: Health personnel and their families = 250F Referrals = 250F Direct users (non-referred): Children = 1000F Adults = 2000F Preventive: Delivery = 500F	<ul style="list-style-type: none"> • GUERA (d) (Baro & Dadouar) <table border="1"> <thead> <tr> <th>Children</th> <th>Adults</th> </tr> </thead> <tbody> <tr> <td>I: 100F - 200F</td> <td>I: 100F - 200F</td> </tr> <tr> <td>II: 150F - 250F</td> <td>II: 150F - 250F</td> </tr> <tr> <td>III: 250F - 350F</td> <td>III: 250F - 350F</td> </tr> </tbody> </table> • CHARI-BAGUIRMI (e) (Sidje & Wallia) <table border="1"> <thead> <tr> <th>Cotisant:</th> <th>Non-Cotisant:</th> </tr> </thead> <tbody> <tr> <td>I: 50F - 100F</td> <td>I: 75F - 200F</td> </tr> <tr> <td>II: 100F - 150F</td> <td>II: 150F - 300F</td> </tr> <tr> <td>III: 150F - 200F</td> <td>III: ??</td> </tr> <tr> <td></td> <td>III: 500F - 800F (f)</td> </tr> </tbody> </table> • OULLED-BELI <table border="1"> <thead> <tr> <th>I & II:</th> <th>III:</th> </tr> </thead> <tbody> <tr> <td>125F</td> <td>250F</td> </tr> </tbody> </table> 	Children	Adults	I: 100F - 200F	I: 100F - 200F	II: 150F - 250F	II: 150F - 250F	III: 250F - 350F	III: 250F - 350F	Cotisant:	Non-Cotisant:	I: 50F - 100F	I: 75F - 200F	II: 100F - 150F	II: 150F - 300F	III: 150F - 200F	III: ??		III: 500F - 800F (f)	I & II:	III:	125F	250F	<ul style="list-style-type: none"> • Children = 200F • Adults = 400F Preventive: Prenatal & delivery = 400F
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• KOUPOR	300F	600F																																														
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II: 150F - 250F	II: 150F - 250F																																															
III: 250F - 350F	III: 250F - 350F																																															
Cotisant:	Non-Cotisant:																																															
I: 50F - 100F	I: 75F - 200F																																															
II: 100F - 150F	II: 150F - 300F																																															
III: 150F - 200F	III: ??																																															
	III: 500F - 800F (f)																																															
I & II:	III:																																															
125F	250F																																															

Notes: (a) The PADS project distinguishes between two types of curative care: (1) Type I for cases where no drugs other than Aspirin, Chloroquine or Mebendazole are prescribed; (2) Type II where at least one drug other than those identified in (1) is prescribed. Payment entitles the patient to receive the consultation, treatment and referral at no added cost. Children are classified as 0 through 4 years of age. Adults are classified as 5 years and above. (c) Prices are for 1991. (Source: Breido, 1992)

(d) Prices are for 1990. Treatment (I) is for cases that last for less than 5 days and do not require an injection or the use of Ampicilline. Treatment (II) is for cases that last for 5 or more days and do not require an injection or the use of Ampicilline. Treatment (III) is for cases requiring an injection or the use of Ampicilline. The range in prices covers the cost of dressings. The lower price is applied if no dressings are required. 50F is added if "minor" dressings are required. 100F is added if "major" dressings are required.

(e) Individuals belonging to households that have prepaid a fixed amount (referred to as *cotisant*; see main text for description of alternative prepayment arrangements that have been experimented with) pay a lower rate, and all others (*non-cotisant*) pay a higher rate. (f) Patients who are *cotisant* are charged an additional 100F per injection. Patients who are *non-cotisant* are charged an additional 150F - 200F per injection. (g) A census of indigents was conducted by the project in conjunction with the sub-chiefs. Based on this census 5% of the eligible user population has been classified as indigent.

adult fees are not increased adequately, it reduces the revenue yield and level of cost recovery.

The third noteworthy aspect of the pricing policies is that some of the BELACD dispensaries have chosen to charge patients living outside the ZR more than patients residing within the zone. Geographically-based differential pricing can be efficiency improving to the extent that it reduces congestion at the health center and induces patients from outside the dispensary zone to use the available services located in the zone where they live.⁶ To the extent that patients from outside the dispensary zone are willing to pay the higher fee, and prices for patients from within the zone are not adjusted downwards, differential pricing can also increase a dispensary's revenue yield, and thus the level of cost recovery. Its principal disadvantages are : (1) that it can have adverse equity effects (both from needs-based and ability to pay perspectives) if populations living in adjacent zones do not have access to another dispensary; (2) that it increases the complexity and cost of administering the fees.

The fourth noteworthy aspect of the various pricing policies is the decision in the SECADEV and PADS dispensaries to set different pricing levels for different types of medical care provided. In the PADS case patients who are administered at least one drug other than aspirin, chloroquine and/or mebendazole are charged twice as much as patients who are only prescribed these three drugs. In the SECADEV case patients who require more than 5 days of treatment and/or who require an injection or the use of ampicillin are charged more than patients who either require less than five days treatment or who do not require an injection or the use of ampicillin. The advantage with this pricing strategy is that it is efficiency enhancing to the extent that prices are more firmly based on differences in the cost of treatment. To the extent that patients understand the pricing policy (i.e.,

⁶ Where prepayment arrangements have been instituted, the introduction of Geographically-based differential pricing is one way of reducing the extent to which non-contributors benefit from the consumption of care that they have not paid for.

know in advance that if they are suffering from a minor ailment that they will pay less for care) it can be equity improving from an ability to pay perspective since it reduces the cost of care for minor ailments and thus improves access. It has the disadvantage that it may be less equitable from a needs-based perspective since those in the greatest need of care (those with the more severe illness conditions that require longer treatment or more drugs) are required to pay more than patients who are less needy from a health standpoint. It has the added disadvantage that it increases the administrative complexity and cost of the system. Finally, it may also reduce revenue yields to the extent that prices for longer and more complex illness cases have not been adequately adjusted upwards to compensate for the revenue loss caused by the reduced charge for minor cases.⁷

The last point of particular interest to note about the pricing policies adopted by these projects is that most of them charge for preventive care consumption. While this is a fairly common practice in Francophone Africa, it is generally discouraged by the public health and health economics professions since coverage rates for these services tend to be very low (indicating weak demand and/or inadequate information on the part of potential beneficiaries) and because they not only benefit the consumer, but also benefit society at large. It is often argued, therefore, that charging for these services is inefficient from a social perspective, and inequitable from a needs-based perspective. A fundamental question that deserves further analysis in the Chadian case is whether preventive care pricing is a cost-effective strategy in the short run, or whether the presumed benefits from a recurrent cost financing standpoint are outweighed by the reduction in coverage rates.

Having reviewed the cost and pricing aspects of these projects, we turn now to an examination of the extent to which cost recovery has been achieved in the two projects for

⁷ Of course, the opposite revenue effect may occur if the demand for treatment by individuals suffering from minor illnesses is sufficiently price responsive. If it is, the number of patients seeking treatment who otherwise would have sought treatment elsewhere may increase enough to cause total revenues to increase despite the reduction in prices.

which data are available -- the BELACD and SECADEV projects⁸. In doing so, we will first look at the magnitude and nature of the costs that have been included for cost recovery financing under these projects. This will enable us to identify the major cost centers (i.e., those inputs that absorb a large share of the total recurrent costs), and whether these cost centers are positively correlated with the number of new illness episodes treated at the dispensaries. The latter will enable us to be more precise in defining costs as fixed (i.e., those that *do not* increase with the number of patients treated), and variable (i.e., those that *do* increase with the number of patients treated). The analysis is based on the data presented in Tables III.3, III.4, and III.5 which follow starting on the next page. We begin by examining those inputs that were most often identified for cost recovery financing in Table III.1.

All of the projects considered in this review identify operating costs as candidates for cost recovery financing. A review of Tables III.3 through III.5 reveals that when combined with minor maintenance costs, they make up on average 15% of the total recurrent costs of these health facilities. In addition, simple correlation analysis reveals that operating costs are fixed costs since they are not linearly correlated with the number of new illness episodes treated at the dispensaries.⁹ Finally, the analysis also reveals there is a great deal of variability in these fixed costs between dispensaries, making them poor candidates for uniform pricing.¹⁰

⁸ In order to improve the reliability of the ensuing analysis, we have included data from the Goundi Health Project located in Moyon Chari.

⁹ Although a Pearson Correlation Coefficient of -0.2962 was derived (suggesting a negative relationship between operating costs and the number of new illness episodes treated), it was not possible to reject the null hypothesis that there is no linear relationship between these two variables at a 5% level of a two-tailed t test.

¹⁰ A coefficient of variation of 1.18 was calculated between dispensaries which indicates that operating costs are the most variable of the three major cost groups considered.

Table III.3: Cost Recovery Experience of the BELACD de Pala Dispensaries in Chad, 1991

Dispensary	Cost Recovery Revenues (CR Rev)				Total Costs								Balance	
	Fees + Health Cards		BELACD Subsidy		Essential Drugs & Dressings		Salaries & Incentive Payments		Maintenance & Other Minor Operating Costs		Total Costs			
	Total [A]	Total /NC [B]	Total [C]	Total /NC [D]	Total [E]	Total /NC [F]	Total [G]	Total /NC [H]	Total [I]	Total /NC [J]	Total [K]	Total /NC [L]	Total [M]	Total /NC [N]
BISSI-MAFOU FCFA As % of CR Rev	7,209,805 100%	1019	1,433,831 20%	202	5,222,962 72%	738	3,043,638 42%	430	299,033 4%	42	8,565,633 118%	1210	78,003 1%	11
DOMO FCFA As % of CR Rev	4,116,260 100%	625	1,692,173 41%	258	2,984,316 73%	453	2,631,122 64%	400	595,411 14%	91	6,210,849 151%	944	-402,416 10%	-51
GOUNOU-GAN FCFA As % of CR Rev	3,533,230 100%	576	1,456,940 41%	238	2,099,728 59%	342	1,817,892 51%	296	393,258 11%	66	4,315,878 121%	704	674,292 19%	110
KOUPOR FCFA As % of CR Rev	2,300,820 100%	617	1,814,098 79%	486	1,320,469 57%	354	1,879,881 82%	504	1,291,507 56%	346	4,491,857 195%	1204	-376,939 16%	-101
SERE FCFA As % of CR Rev	5,684,284 100%	1055	1,815,035 32%	337	1,641,670 29%	305	3,007,907 53%	558	1,530,302 27%	284	6,179,879 109%	1147	1,319,440 23%	245
TAGAL (a) FCFA As % of CR Rev	4,348,785 100%	551	1,417,348 33%	180	2,143,089 49%	272	2,752,345 63%	349	1,719,500 40%	218	6,614,934 152%	839	-848,801 20%	-108
AVERAGE FCFA As % of CR Rev	4,532,197 100%	741	1,604,904 35%	284	2,568,705 57%	411	2,522,130 56%	423	972,335 21%	175	6,063,672 134%	1008	73,929 2%	18

Table III.4: Cost Recovery Experience of the SECADEV Dispensaries in Chad, 1989

Dispensary	Cost Recovery Revenues (CR Rev)				Total Costs								Balance	
	Fees + Health Cards		Community Pre-Payment		Essential Drugs & Dressings		Salaries & Incentive Payments		Maintenance & Other Minor Operating Costs		Total Costs		Total	Total /NC
	Total	Total /NC	Total	Total /NC	Total	Total /NC	Total	Total /NC	Total	Total /NC	Total	Total /NC		
[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]	[N]	
BARO														
FCFA	479,808	102	0	0	547,202	116	1,794,510	381	85,923	18	2,427,635	516	-1947227	-414
As % of CR Rev	100%		0%		114%		374%		18%		506%		405%	
DADOUAR														
FCFA	487,560	85	0	0	572,391	100	1,038,519	181	166,238	29	1,874,328	327	-1386768	-241
As % of CR Rev	100%		0%		117%		213%		34%		384%		284%	
KARAL														
FCFA	728,112	154	0	0	312,600	66	1,612,760	341	63,021	13	1,987,881	420	-1205769	-237
As % of CR Rev	100%		0%		43%		221%		9%		273%		165%	
SIDJE														
FCFA	384,312	239	33,768	21	224,120	139	487,198	303	13,975	9	725,293	451	-307213	-191
As % of CR Rev	92%		8%		54%		117%		3%		173%		73%	
GUITTE														
FCFA	331,884	439	38,556	51	183,331	242	499,618	661	13,685	18	696,614	921	-326174	-431
As % of CR Rev	90%		10%		49%		135%		4%		188%		73%	
WALLIA (a)														
FCFA	612,260	126	243,000	50										
As % of CR Rev	72%		28%											
AVERAGE														
FCFA	503,989	135	52,589	14	367,928	99	1,086,521	291	68,568	18	1,542,350	413	-985772	-264
As % of CR Rev	90%		10%		66%		195%		12%		277%		177%	

Notes:
(a) Data for Wallia are from 1990.

Table III.5: Cost Recovery Experience of the Goundi Health Project (Moyen Chari) Dispensaries in Chad, 1991

Dispensary	Revenues				Total Costs								Balance	
	Fees		Other		Essential Drugs & Dressings		Salaries & Incentive Payments		Maintenance & Operating Costs		Total Costs [K]=[E]+[G]+[I]		[M]=([A]+[C])-[K]	
	Total [A]	Total /NC [B]	Total [C]	Total /NC [D]	Total [E]	Total /NC [F]	Total [G]	Total /NC [H]	Total [I]	Total /NC [J]	Total [K]	Total /NC [L]	Total [M]	Total /NC [N]
NGANGARA FCFA As % of CR Rev	1,494,450 100%	571	67,960 5%	26	515,995 35%	197	940,155 63%	360	350,493 23%	134	1,806,643 121%	691	-244,233 16%	-93
MAHIMTOKI FCFA As % of CR Rev	1,651,050 100%	594	33,250 2%	12	529,959 32%	191	878,291 53%	316	352,134 21%	127	1,760,384 107%	634	-76,084 5%	-27
GOUNDI EST FCFA As % of CR Rev	1,984,750 100%	527	166,175 8%	44	794,098 40%	211	841,057 42%	224	195,729 10%	52	1,830,884 92%	487	320,041 16%	85
GOUNDI W FCFA As % of CR Rev	1,689,050 100%	528	114,160 7%	36	568,732 34%	178	822,632 49%	257	259,163 15%	81	1,650,527 98%	516	152,683 9%	48
GUIDITI FCFA As % of CR Rev	527,400 100%	558	74,065 14%	78	125,024 24%	132	439,322 83%	463	180,134 34%	190	744,480 141%	784	-143,015 27%	-151
KOUMAY FCFA As % of CR Rev	447,050 100%	488	125,650 28%	137	153,246 34%	167	400,956 90%	437	136,922 31%	149	691,124 155%	754	-118,424 26%	-129
AVERAGE FCFA As % of CR Rev	1,298,958 100%	548	96,877 7%	41	447,842 34%	189	720,402 55%	304	245,763 19%	104	1,414,007 109%	597	-18,172 1%	-8

Source: Rapport Financier, Projet de Sante de Goundi, 1991

Notes:

[C] Includes revenues from delivery of patient-related preventive care and from ox-drawn ambulance used to transport referral cases to the Goundi Hospital. Excludes subsidy paid by the project. [G] includes partial payment for supervisor's time. [I] includes: fuel for supervision, maintenance and amortization of bicycles, and costs of tending to the oxen used to draw the ambulance cart.

Drug costs are the next most frequently identified item for cost recovery financing. Our analysis indicates that they make up on average 38% of the total recurrent costs of these health care facilities. As expected, simple correlation analysis indicates that drug costs are variable costs that are positively (though not strongly) correlated with the number of new illness episodes treated at the dispensaries.¹¹ Given the fact that drug costs are not strongly correlated with dispensary utilization, it is not surprising that there remains a considerable amount of variability in drug costs between dispensaries after differences in the number of new illness episodes treated are controlled for.¹² Eventhough drug costs are less variable between dispensaries than operating costs, because the former represent a larger share of total recurrent costs, they exert a greater influence on dispensary budgets, and thus are not good candidates for uniform pricing.

The last major cost category to be nearly universally identified for at least partial cost recovery funding is salaries and incentive payments. As expected, salary costs are the least variable between dispensaries, and they are not correlated with the number of illness cases treated. Given that the dispensaries being evaluated are all private, not-for-profit, facilities which must hire their own staff, it is not surprising that salary costs constitute 47% of their total recurrent costs. In public sector facilities it is unlikely that salary or incentive payments will account for as large a percentage of the recurrent costs designated for CR financing. As a result, drug resupply and minor operating costs will probably represent a much larger share of the public sector costs to be recovered, thus increasing the need to adopt flexible pricing arrangements.

¹¹ A Pearson Correlation Coefficient of 0.541 was derived between drug costs and the number of new illness episodes treated, and a two-tailed t test of the null hypothesis that there is no linear relationship between these two variables was rejected at a 5% level. The fact that drug costs are not perfectly correlated with dispensary utilization probably reflects the fact that prescription practices vary from one dispensary to another as well as the fact that health needs differ at any moment in time.

¹² A coefficient of variation of 0.86 was calculated after controlling for difference between dispensaries in of the number of new cases treated. This makes drug costs the second most volatile cost group among the three considered in this analysis.

Tables III.3 through III.5 can also be used to obtain an indication of prices and levels of utilization that are necessary to fully recover the costs identified under these projects. This is equivalent to determining the prices and utilization levels that ensure that dispensary budgets are balanced, or what is the same, that dispensaries "break-even" financially. We begin with the calculation of break-even pricing in cases where the level of utilization is fixed. We then introduce the approach used to calculate the break-even level of utilization when prices remain fixed.

As indicated above, a break-even price is one which ensures that revenues cover 100% of the recurrent costs identified for CR financing. This is equivalent to saying that a break-even price is a price that ensures that total revenues equal total costs. If TR is total revenues, and TC is total costs, then the break-even price is one that ensures that:

$$[1] \quad TR = TC.$$

Since total revenues, TR , are equal to the number of new illness cases treated (NC) multiplied by the price charged per new illness case (P), and since total costs (TC) are the sum of total fixed costs (TFC) plus variable costs (VC) multiplied by the number of new illness cases, equation [1] can be re-expressed as follows:

$$[2] \quad P \times NC = TC = TFC + (VC \times NC).$$

By solving equation [2] for P we can calculate the break-even price given the number of new illness cases treated at a particular dispensary. The solution is:

$$[4] \quad P = \frac{TC}{NC} = \frac{TFC}{NC} + VC,$$

which is simply the average total cost per new illness case treated -- the value reported in column [L] of Tables III.3 through III.5.¹³

Using the data from column [L] of Tables III.3 through III.5, we have calculated that the average break-even price for the dispensaries under review is FCFA 738 per new illness case, although they range from a minimum of FCFA 327 in the case of the Dadouar dispensary to a maximum of FCFA 1,210 in the case the Bissi-Mafou dispensary.

Interestingly, only two of the 17 dispensaries under review charged their patients a price greater than or equal to the break-even price. As a result, the majority of the dispensaries ran annual budget deficits that ranged from as little as FCFA 18,172 to as much as FCFA 2,266,149. The average cost recovery ratio (fee revenues divided by total costs) for the 17 dispensaries was thus 0.72, ranging from a low of 0.20 to a high of 1.72. Only three dispensaries actually covered 100% or more of the total costs that had been identified for CR financing.

Keeping with the notation introduced above, calculating the break-even utilization level requires solving equation [2] for the number of new illness cases. The solution is

$$[3] \quad NC = \frac{TFC}{P - VC}.$$

In the Gounou-Gan case, adults are charged FCFA 650 per illness episode, and children are charged FCFA 300. Assuming, as is the case nationally, that children under five years of age make up 30% of all illness episodes treated, then average price per illness episode,

¹³ For the break-even pricing formula to guarantee that total revenues will equal total costs, it is necessary to assume that the demand for health care is totally insensitive to price changes. In other words, it must be assumed that even if the price is increased, demand will remain constant. If, as is more likely, demand falls when prices are increased, total revenues will not fully cover total costs at the break-even price. Empirical evidence on the demand for health care in a number of African countries has revealed that the average consumer is fairly insensitive to price changes, although the poor are somewhat more price sensitive than the rich. Thus, the break-even pricing formula is likely to perform quite well under Chadian conditions.

P , is FCFA 546.¹⁴ From the cost analysis above, we know that drug costs are variable costs, while salaries and maintenance and other operating costs are fixed costs. Referring to Table III.3 the Gounou-Gan dispensary costs are as follows:

$$TFC = FCFA 1,817,892 + FCFA 398,258 = FCFA 2,216,150$$

$$VC = FCFA 342 \text{ per new illness case.}$$

The break-even level of utilization is thus:

$$NC = \frac{2,216,150}{(546-342)} = 10,863 \text{ NC per year, or } 905 \text{ NC per month.}^{15}$$

- This kind of break-even analysis is often depicted graphically by plotting the total revenue and total cost curves used in equation [2]. As can be seen in Figure III.1, break-

¹⁴ If the adult price and child price are known, then the average price per illness episode is calculated in the following way. First calculate the relationship between the child price, P_c , and the adult price, P_a . In this case, $P_c = (300 \text{ FCFA} / 650 \text{ FCFA}) P_a = 0.46 \times P_a$. Second, calculate the child (under 5) and adult (5+) shares of the total number of new illness cases, NC , treated. In this case we use national data which indicate that the child share is 0.3, and the adult share is $(1 - 0.3 = 0.7)$. Third, note that under age-based differential pricing, total revenues, TR , are calculated as follows:
 $TR = (P_a \times 0.7 \times NC) + (P_c \times 0.3 \times NC)$. Fourth, note that when adults and children are charged the same price, total revenues are calculated as follows: $TR = P \times NC$, where P is the average price per new illness case that we are trying to derive. Finally, by setting the two TR s equal to one another, we can solve for P in terms of P_a as follows:

$$P \times NC = [P_a \times 0.7 \times NC] + [P_c \times 0.3 \times NC]$$

$$\Rightarrow P = [P_a \times 0.7] + [P_c \times 0.3]$$

$$\Rightarrow P = [P_a \times 0.7] + [0.46 \times P_a \times 0.3]$$

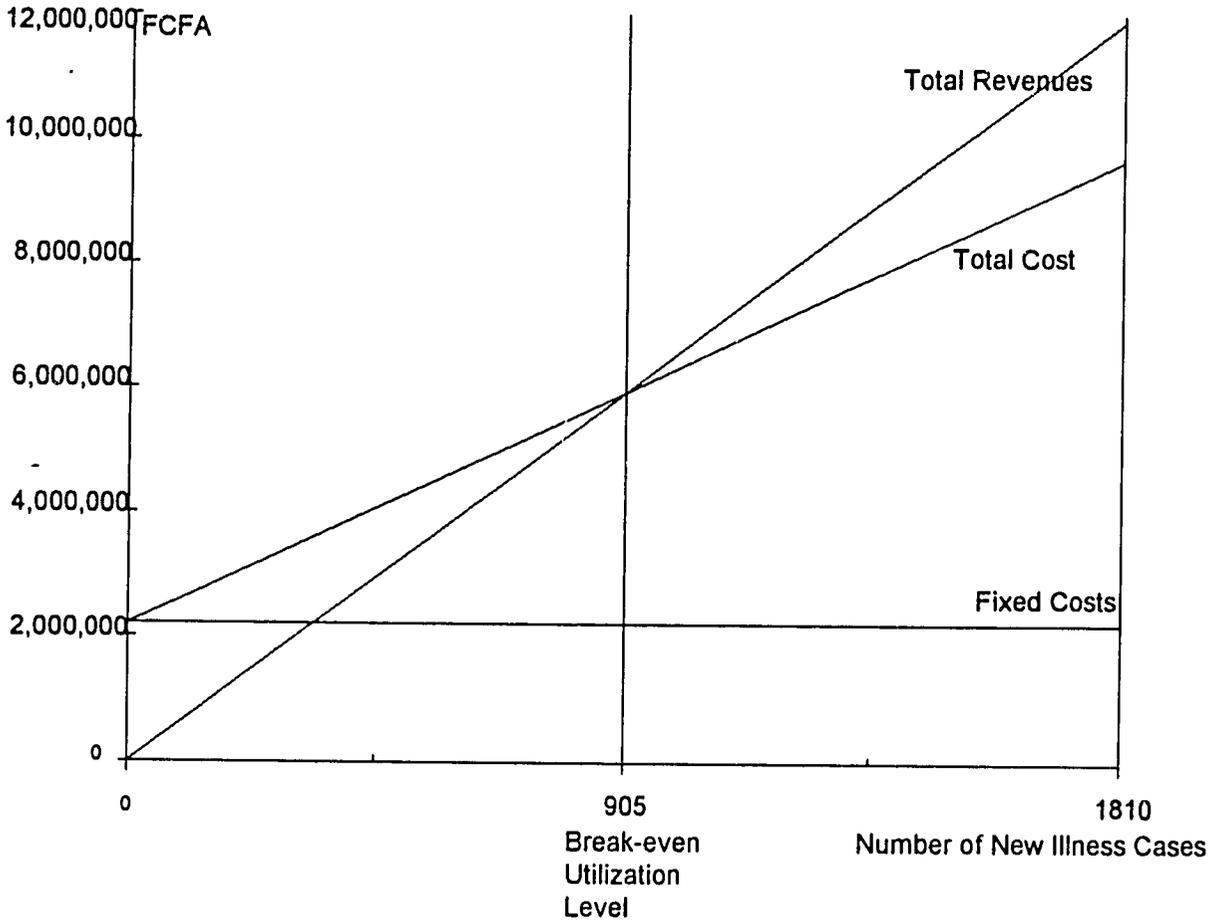
$$\Rightarrow P = P_a \times 0.84$$

Thus, in this case, $P = FCFA 650 \times 0.84 = FCFA 546$. Note that this average price presumably is less than the average revenue per new illness case reported by the Gounou-Gan dispensary (FCFA 576) because the actual share of adult users exceeded the national average used in the formula above.

¹⁵ Since actual monthly utilization at the Gounou-Gan dispensary was only 511, this indicates that the dispensary required FCFA 215,124 (equal to $(905 - 511) \text{ NC} \times FCFA 546$) in additional revenues to balance its budget.

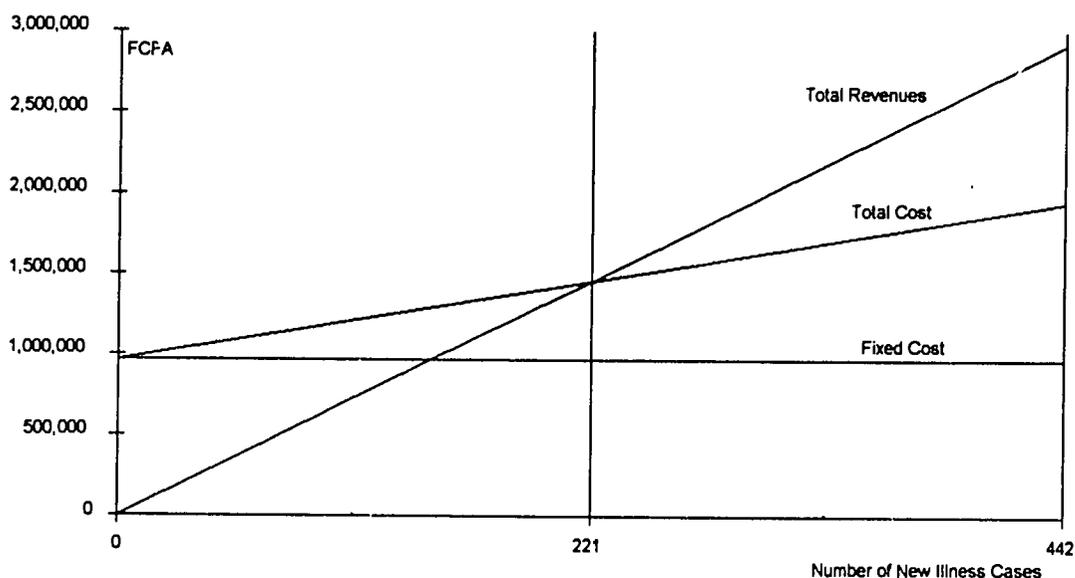
even utilization occurs where total revenues equal total costs (i.e., where the total revenue and total cost curves intersect one another).

Figure III.1: Break-Even Analysis -- Gounou-Gan Dispensary



Similar analysis for the "average" Goundi case reveals that the break-even level of utilization for dispensaries in the Goundi project area is 221 new illness cases per month when a price of FCFA 548 is charged per new illness case treated.

Figure III.2: Break-Even Analysis -- "Average" Goundi Dispensary



The preceding break-even analysis has revealed that user fee financing has been successfully used to recover a large proportion of the total recurrent costs of dispensary-level curative care when flexible pricing arrangements are adopted (i.e., ones that allow fee levels to vary from one dispensary to another). The level of cost recovery, however, is clearly a function both of the level of costs identified for CR funding, and the level of demand given prices set. Moreover, the analysis clearly reveals that the experience from one dispensary to another is so variable that it is not possible to generalize from one dispensary, or even from a so-called "typical" dispensary, when setting cost recovery prices.

Having reviewed some of the cost recovery experiences outside the CCSP project area, we turn now to an evaluation of cost recovery in the three districts of the province of Moyen Chari where the CCSP is focusing its initial efforts. We begin with a description of the supply and utilization of health services in these three districts, and then turn to an review of the efforts that have already been taken by the province to launch public sector cost recovery.

IV. An Analysis of the Supply and Use of Health Services in the three CCSP-Assisted Districts of Moyen Chari

The CCSP has identified the districts of Sarh, Danamadji and Koumra in the province of Moyen Chari to be the site of initial project efforts in the area of cost recovery. The three districts are divided for the purposes of health care delivery into 39 zones de responsabilites (ZR), each of which is intended to have a functioning dispensary that serves a population of approximately 10,000 inhabitants. As of April, 1993 27 of the 39 ZR had functioning dispensaries, and 12 of these 27 had initiated some form of cost recovery. A listing of the dispensaries in the three CCSP districts, their affiliations (i.e., whether public, or private not-for profit), and whether they have initiated cost recovery yet is presented in Table IV.1.

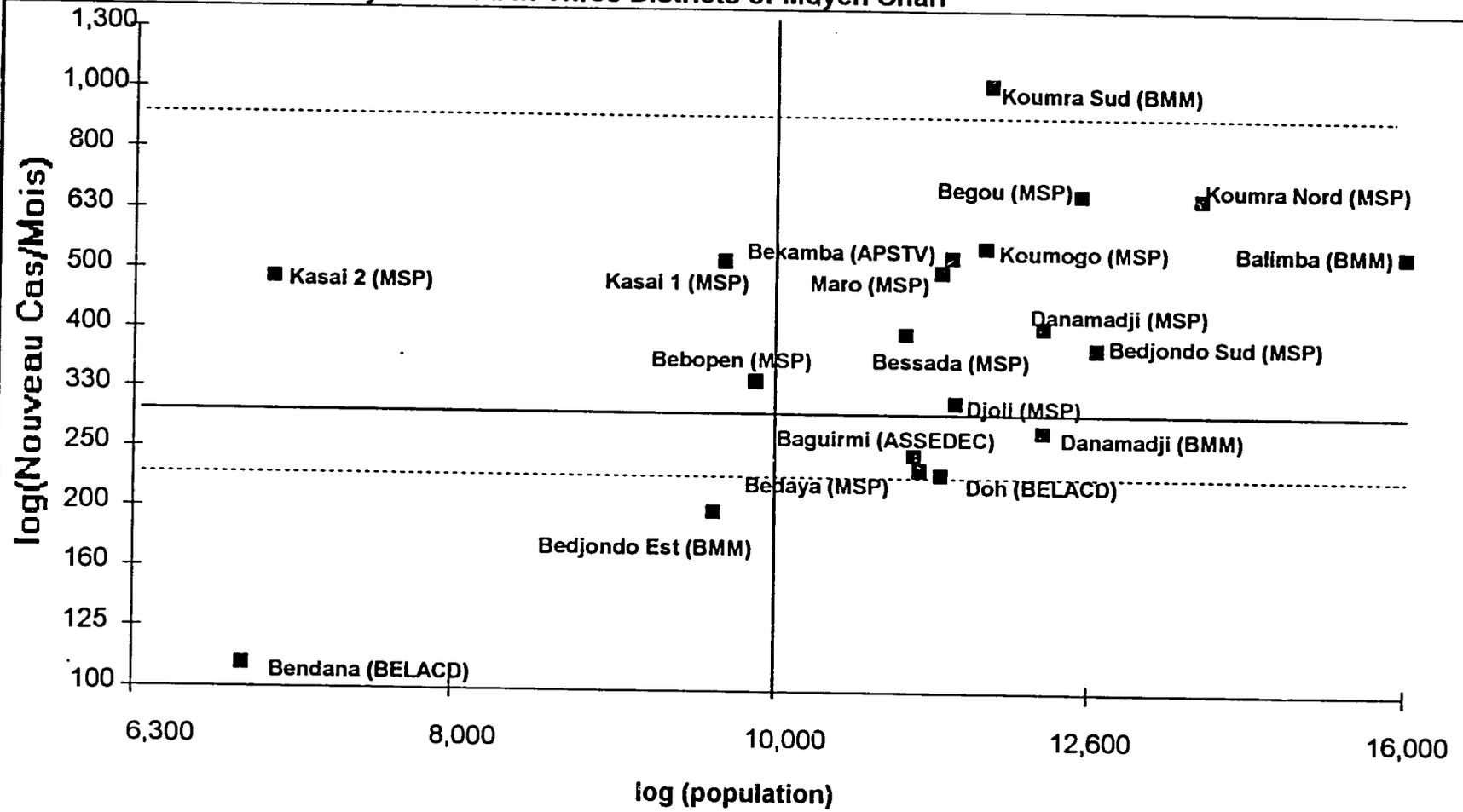
As can be seen from the table, only 2 of the 17 public health facilities have actually begun to implement cost recovery activities, although, as will be described below, considerable work has been undertaken to prepare them to do so. Though it is difficult to predict with any certainty whether cost recovery financing will succeed in these public dispensaries to the same extent as it has in the private, not-for-profit, sector in Chad, it is possible to examine certain indicators of potential success. One indicator is whether public dispensaries have a sufficiently large population and user base upon which to found cost recovery financing. This is done in Figure IV.1 where the dispensaries listed in Table IV.1 are plotted according to the total population of the ZR that they serve, and the average number of new illness cases they treated in 1992.

Table IV.1: Cost Recovery and Dispensary Affiliation in the Three CCSP Districts of Moyen Chari

Health District	Dispensaries With Cost Recovery		Dispensaries Without Cost Recov.		Number of ZR Remaining to be Created
	Dispensary Name	Affiliation	Dispensary Name	Affiliation	
Danamadji	Bendana	BELACD	Danamadji Pub.	MSPAS	Goro 1
	Danamadji Priv.	MMB	Maro	MSPAS	Maimana
			Koumogo	MSPAS	Moyo
			Moussafoyo	BELACD	Sako Gongo
Koumra	Koumra Nord	MSPAS	Bedaya	MSPAS	Koko
	Koumra Ouest	MSPAS	Bessada	MSPAS	Nderduigui
	Koumra Sud	MMB	Bebopen	MSPAS	Bangoul Yomi
	Bedjondo Est	MMB	Bedjondo Sud	MSPAS	
	Mouroumgoulaye	MMB	Matekaga	MSPAS	
	Doh	BELACD			
	Bekamba	APSVT			
Peni	APSVT				
Sarh	Balimba	MMB	Begou	MSPAS	Banda Quartier
	Baguirmi	ASSEDEC	Kasai I	MSPAS	15 ans
			Kasai II	MSPAS	Maingara
			Djoli	MSPAS	Banda Canton
			Kokaga	MSPAS	Niellim
			Korbol	MSPAS	
Total Number	12		15		12

Legend: BELACD = Catholic mission; MMB = Baptist mission; APSVT = Private NGO; ASSEDEC = Bahai mission; MSPAS = Ministry of Health.

Figure IV.1: Cost Recovery Potential in Three Districts of Moyen Chari



Legend: MSP = Province Ministry of Health; BMM = Baptist Mission; BELACD = Catholic Church; ASSEDEC = Bahai Church NGO; APSTV = NGO.
Notes: Both axes are presented in logarithmic scale, but the numbers on the axes are the actual values.

The graph contains two solid mid-point lines which divide the area into four quadrants. The solid vertical line is set at a population of 10,000 since this is the population level used as one of the criteria for the establishment of ZR. Chadian health planners have determined that this is approximately the population base necessary to ensure that a dispensary can attract sufficient users who will be willing to pay for publicly provided care. The solid horizontal line is set at 300 new illness cases per month since this is the utilization level considered to be sufficient to enable dispensaries in Moyen Chari to recover the level of recurrent costs estimated for a typical public health facility when an average price of FCFA 520 is charged. The two dotted horizontal lines represent the break-even utilization levels for the Gounou-Gan dispensary case and the "average" Goundi case presented earlier in the text.

Figure IV.1 reveals that all but one of the public dispensaries listed in Table IV.1 had monthly utilization levels in 1992 that exceeded the level deemed necessary to cover the recurrent costs for a typical dispensary. Three of these, however, have population bases that are below 10,000, suggesting that they might have difficulties in sustaining observed utilization levels over time. Only one dispensary had a monthly utilization level high enough to have been able to recover the costs of the Gounou-Gan dispensary. In principle, even if costs are as high as the Gounou-Gan case, it should be possible for dispensaries to adjust their prices to ensure that they can break-even financially. In cases where costs are high and/or demand is low, however, "break-even" pricing may exceed people's ability to pay, and may thus undermine a dispensary's financial position, and substantially reduce its effectiveness from a public health standpoint. In these cases, it will be necessary either to find ways of reducing the costs that are identified for CR funding, or to raise supplementary revenues in other ways.

A better indication of the potential success of public health sector cost recovery in Moyen Chari can be obtained by examining household health care utilization, expenditure and income data obtained from the CCSP baseline survey undertaken in April and May of

1992.¹⁶ From this data it is possible to establish who uses modern dispensary-based curative care, how much is paid for this care, and whether households will be able and willing to pay the cost recovery prices being introduced in Moyen Chari.¹⁷

In order to distinguish between consumers on the basis of their ability to pay for care, we begin by presenting income estimates for households in Moyen Chari.¹⁸ This is done in Table IV.2 for rural and urban households separately.

Two points are particularly worth noting in Table IV.2 from a cost recovery financing standpoint. First, there is a large and significant difference between rural and urban income levels.¹⁹ Annual urban household incomes are on average FCFA 333,538 larger than annual rural household incomes. As a result, rural households that are characterized as being in the ninth income decile (i.e., among the wealthiest 20% of rural households) would fall in the third and fourth deciles of the urban income distribution (i.e., be among the poorest 40% of urban households). Second, within the rural and urban population groups, income inequality is relatively small compared with that observed in other developing countries with comparable incomes.²⁰

¹⁶ Readers are referred to "Chad Child Survival Baseline Survey" (Chaine and Saidel, 1992) for a description of the data set, the sampling methodology and sampling frame.

¹⁷ Households are characterized in this analysis as "willing to pay" the cost recovery prices being introduced in Moyen Chari if they already pay an equivalent amount to be treated at dispensaries or hospitals. This concept should be distinguished from the concept of "willingness to pay" which refers to the maximum amount that an individual will willingly pay to consume care. It is beyond the scope of this analysis to determine household willingness to pay for health care which may exceed the amount that they reported actually paying to obtain care.

¹⁸ Household income is the sum of total household expenditures plus total household savings. Because our income measure is based on expenditures plus savings, it reflects the permanent set of resources available to the household from which to purchase health care -- where permanent means that transitory gains or losses in earnings are netted out. It is important to understand, therefore, that households can be characterized as being able to pay for care eventhough, at any given moment (such as at the beginning of the planting season), they may not be able to afford to pay for health care because their current disposable incomes are too low. At these times, households either have to draw down on their savings or borrow money from their extended family, friends or acquaintances. Since household welfare ultimately depends upon the permanent set of resources at its disposal, the ability to pay concept rather than an affordability concept is the appropriate criterion upon which to evaluate the distributive equity implications of cost recovery pricing policies (Schwabe, 1993).

¹⁹ This was confirmed by a Z test of the difference between the two sample means at a 1% level.

²⁰ A similar analysis of urban households in Juba, Sudan, for example, revealed that households in the wealthiest income decile earned 51% of all income generated in Juba (Schwabe, 1993). As can be seen in

Table IV.2: The Distribution of Total Annual Household Income in Moyén Chari, 1992

Decile of Income Distribution	Number of House holds [A]	Mean Total Annual Expenditure [B]	Mean Total Annual Savings [C]	Mean Total Annual Income [D]	Range of Annual Income [E]	Percent of Total Annual Income [F]
URBAN						
Poorest	27	54,648	4,633	59,281	19,700 - 78,400	2.2%
2	27	81,453	12,781	94,235	78,500 - 109,200	3.6%
3	28	109,549	10,492	120,042	109,300 - 133,800	4.8%
4	27	132,959	16,577	149,537	133,900 - 170,900	5.7%
5	27	169,190	14,903	184,094	171,000 - 203,200	7.0%
6	28	213,080	21,357	234,437	203,300 - 259,500	9.3%
7	27	250,773	24,137	274,910	250,600 - 298,200	10.5%
8	28	290,427	45,792	336,220	298,300 - 378,300	13.3%
9	27	378,840	56,711	435,551	378,400 - 508,800	16.6%
Wealthiest	28	528,000	149,385	677,386	508,900 - 1,134,700	27.0%
RURAL						
Poorest	82	19,660	764	20,425	9,100 - 27,600	2.5%
2	82	28,640	3,991	32,631	27,700 - 36,600	3.9%
3	83	32,998	8,013	41,011	36,700 - 45,500	5.0%
4	82	38,726	11,056	49,782	45,600 - 54,200	6.0%
5	83	42,098	17,269	59,367	54,300 - 64,000	7.2%
6	83	48,947	19,729	68,677	64,100 - 74,200	8.3%
7	82	58,956	21,634	80,590	74,300 - 89,400	9.7%
8	83	73,389	26,686	100,075	89,500 - 113,400	12.2%
9	82	98,520	40,912	139,433	113,500 - 168,300	16.7%
Wealthiest	84	155,436	76,626	232,063	168,400 - 641,100	28.5%

Source: CCSP Household Survey, 1992.

Notes: Total income is the sum of total expenditures and savings. Expenditure and savings data were collected from mothers of child bearing age (45 years and under) who were full time residents of the project area. The total expenditure variable was created by summing over reported expenditures on food, cooking fuel and soap in the week prior to the interview (each of which were multiplied by 52), plus reported expenditures during the last year on clothing, health care, schooling, ceremonies and "other" items. The savings variable was created by summing over annual reported contributions to *tontine* savings groups plus any other reported savings. The survey was conducted in April and May, 1992, a period that coincides with the end of the dry season when disposable incomes are likely to be at their lowest (particularly for rural households). In addition, since the survey did not explicitly ask for information on outlays on durable goods, the income estimates presented above should be considered lower bounds to the true income of these households.

column [F] of Table IV.2, the wealthiest 10% of the urban population in Moyén Chari earn only 27% of all income generated in urban areas of the prefecture.

The implications of these findings for the cost recovery efforts being launched in Moyen Chari is that it appears as though charging urban curative care users a higher fee per illness episode than rural users would be equity improving from an ability-to-pay perspective. At the same time, the argument for means testing *within* the urban and rural areas appears to be much less compelling. To the extent that the value of rural/urban price differentiation is accepted, a question that remains to be answered is whether the uniform fee rates that are currently being introduced in Moyen Chari (FCFA 400 per child and FCFA 700 per adult) are too high for rural patients or too low for urban patients. Answering this question requires an examination of utilization and payment levels by rural and urban consumers.

Maternal and child utilization levels for rural and urban residents stratified by incomes are presented in Table IV.3. The first point to note from the table is that the majority of individuals in Moyen Chari do *not* seek treatment at modern public and/or private dispensaries when they are sick. In fact, only 32% of all sick individuals surveyed report having used modern dispensary-based care during their last illness episode. The majority, approximately 59%, report that they treated themselves at home using modern methods. In rural areas, moreover, a higher percentage of the sick reportedly use traditional home-based treatments than use modern dispensary-based care.

From a cost recovery perspective, the fact that dispensary-based care does not meet the curative health needs of the majority of Moyen Chari's population is important because it indicates that dispensary-based curative care competes with modern and traditional home-based alternatives, and therefore must offer patients more value for their money in order for them to demand it. If cost recovery pricing raises the

Table IV.3: Maternal and Child Utilization of Alternative Curative Health Care Providers in Moyen Chari, 1992 by Deciles of Household Income

Deciles of Total Household Income	Rural				Urban			
	Total (n)	Traditional Home-Based (%)	Modern Home-Based (%)	Modern Dispensary (%)	Total (n)	Traditional Home-Based (%)	Modern Home-Based (%)	Modern Dispensary (%)
Children								
Poorest	60	21.7	45.0	26.7	11	27.3	36.4	18.2
2	31	22.6	41.9	12.9	17	17.6	23.5	52.9
3	37	24.3	40.5	16.2	22	18.2	40.9	31.8
4	42	26.2	47.6	14.3	14	14.3	42.9	42.9
5	45	22.2	60.0	13.3	9	11.1	44.4	33.3
6	43	27.9	44.2	18.6	13	23.1	61.5	15.4
7	37	40.5	24.3	21.6	16	25.0	12.5	62.5
8	45	31.1	42.2	15.6	8	37.5	25.0	37.5
9	44	29.5	54.5	11.4	13	23.1	61.5	15.4
Richest	44	25.0	43.2	11.4	14	14.3	57.1	28.6
Total	428	26.9	44.9	16.6	137	20.4	40.1	35.0
Mothers								
Poorest	55	27.3	25.5	10.9	12	25.0	8.3	16.7
2	39	17.9	35.9	12.8	13	0.0	6.2	23.1
3	47	27.7	29.8	17.0	17	11.8	29.4	23.5
4	42	11.9	28.6	14.3	14	0.0	57.1	14.3
5	42	21.4	33.3	19.0	17	17.6	42.9	35.7
6	44	31.8	27.3	9.1	13	0.0	15.4	30.8
7	38	21.1	21.1	26.3	11	18.2	27.3	27.3
8	41	9.8	39.0	24.4	7	0.0	71.4	14.3
9	34	11.8	35.5	23.5	18	5.5	27.8	50.0
Richest	43	14.0	34.9	18.6	10	0.0	30.0	60.0
Total	425	20.0	30.8	17.2	132	8.3	34.8	29.5

Source: CCSP Household Survey, 1992

cost of dispensary-based curative care to consumers (though, as will be seen later, it is not at all clear that it will), then the quality of care must also be increased or an even smaller percentage of the sick will choose it for treatment. If this occurs, then raising the price per illness episode may actually reduce total cost recovery revenues.

The second point to note from Table IV.3 is that urban mothers and children are significantly more likely to use modern dispensary-based care than rural mothers and children. While approximately 35% of urban children use modern dispensary-based care when sick, only 17% of rural children do so. Similarly, while approximately 30% of urban women use modern dispensary-based care when sick, only around 17% of rural mothers do.²¹ Though it is impossible in the absence of empirical demand analyses to ascertain whether these differences in utilization rates are caused by the rural/urban income differentials, the observed utilization differential is certainly consistent with the assertion that ability-to-pay is a determining factor in the utilization of curative care.

Interestingly, the validity of this assertion is brought into question by the fact that dispensary utilization rates among sick individuals from the wealthiest 20% of households are not systematically higher than those for sick individuals from the poorest 20% of households. The only case considered in this analysis where a significantly larger percentage of wealthier patients use dispensary-based care is the case of urban women. By contrast, the opposite holds when we examine the sub-sample of sick children from rural households. In this case, approximately 22% of the children from the poorest households use dispensary-based care whereas only around 11% of the children from the wealthiest households do so.²² Though this finding appears to contradict the assertion

²¹ These differences are significant at the 1% level of one-tailed Z tests of the difference between sample proportions. A Z statistic of 4.59 was derived for children, while a Z statistic of 3.08 was calculated for mothers. Keep in mind, however, that the standard deviations used to derive these, and other, Z statistics have not been corrected for the cluster sampling design effect, and thus may overstate the level of significance.

²² A Z statistic of 1.90 suggest that this difference may be significant at a 5% level of a one-tailed test.

that ability-to-pay is a determining factor in the use of dispensary-based care, the two could be consistent with one another if children from poorer households are significantly less healthy than children from wealthier rural households and thus use dispensary-based care more often because they need to.²³

The preceding utilization analysis lends further support to our earlier statement that there are fairly strong indications that cost recovery pricing policies should be differentiated on a rural versus urban basis. Moreover, the analysis also tends to confirm our earlier contention that attempts to introduce additional forms of means testing *within* the rural and urban geographic areas are not warranted.²⁴

Having examined utilization levels across rural and urban households and across households stratified by income, we now attempt to discern how much consumers are willing to pay for dispensary-based curative care, and whether utilization of public dispensaries can be expected to drop when cost recovery pricing is introduced. As indicated in footnote 16, a rough indicator of whether households will be willing to pay the cost recovery prices being introduced in public dispensaries in Moyen Chari (FCFA 400 per child illness episode and FCFA 700 per adult illness episode) is whether they already pay an equivalent amount to be treated at dispensaries or hospitals. This can be determined by examining Tables IV.4 and IV.5 which present the mean payments made by CCSP survey households for treatment they received from different health care providers.

²³ We do not want to overemphasize this result since it is possible that the observed difference in utilization between the poorer and wealthier rural households is not significant when the Z statistic has been corrected for the sample design effect.

²⁴ Deriving this conclusion does not deny the fact that the poor are strictly speaking less able to pay for curative care than are individuals with higher incomes. In fact, the Engel curve estimates presented in Annex 1 reveal that for every 1% increase in incomes, households in Moyen Chari increase their health care consumption expenditures by more than 1%. In other words, if the poor had more money, they would probably spend more on health care, including possibly substituting dispensary-based care for less expensive home-based treatment approaches. Given, however, that there is no discernable difference in the utilization rates between the rural poor and the wealthy and the urban poor and wealthy in Moyen Chari, it is not clear that the poor are being systematically prevented from consuming dispensary-based curative care because they are entirely unable to pay for it. As a result, it is our contention that the evidence is not compelling enough to try to establish income-based price differentiation -- even if doing so were administratively and socially feasible.

Table IV.4: Mean Payment per Child Illness Episode by Deciles of Household Incomes in Moyen Chari, 1992

Deciles of Total	Rural				Urban			
	Mean for all Providers	Traditional Home-Based	Modern Home-Based	Modern Dispensary (a)	Mean for all Providers	Traditional Home-Based	Modern Home-Based	Modern Dispensary (a)
Poorest	325 (441)	292 (564)	239 (389)	557 (396)	379 (505)	500 (866)	418 (409)	500 (na)
2	256 (353)	38 (45)	334 (446)	606 (202)	833 (1,061)	233 (251)	175 (150)	1,419 (1,184)
3	279 (346)	158 (261)	180 (230)	797 (208)	493 (527)	650 (na)	216 (248)	900 (625)
4	385 (408)	359 (370)	386 (472)	683 (194)	827 (1,021)	0 (na)	400 (236)	1,530 (1,243)
5	404 (560)	460 (907)	346 (385)	675 (555)	2,227 (3,819)	200 (na)	987 (585)	5,300 (6,005)
6	694 (1,884)	409 (713)	277 (296)	2,385 (3,969)	455 (566)	150 (259)	326 (331)	1,425 (na)
7	549 (825)	175 (210)	458 (783)	1,540 (1,047)	1,551 (1,768)	275 (206)	1,871 (na)	1,997 (2,014)
8	646 (1,550)	694 (894)	245 (258)	2,085 (3,528)	925 (1,085)	100 (173)	550 (na)	2,000 (1,000)
9	606 (825)	904 (1,312)	514 (553)	580 (389)	1,268 (1,515)	1,433 (1,464)	525 (509)	3,250 (na)
Wealthiest	218 (301)	122 (173)	292 (321)	550 (435)	789 (763)	400 (na)	437 (433)	1,687 (759)
Total	438 (923)	383 (709)	325 (419)	1,076 (1,829)	918 (1,445)	426 (645)	467 (516)	1,817 (2,028)

Source: CCSP Baseline Survey, 1992.
Notes: (a) Includes hospitals too.
Standard deviations appear in parentheses below the means.
(na) => only one observation so standard deviation not defined.

Table IV.4 indicates that parents who take their children for treatment at modern (public and private) dispensaries in Moyen Chari are accustomed to paying an amount that on average exceeds the uniform FCFA 400 fee per episode that is being introduced by the province's cost recovery program.²⁵ Further analysis of the households who took their children to a dispensary for treatment reveals that in approximately 70% of rural and 80%

²⁵ The reader is warned, however, that because the average payments have large standard deviations, there is a fairly strong probability that the true average payment for the population as a whole differ considerably from those reported in Tables IV.4 and IV.5.

of the urban cases, payments were greater than or equal to the FCFA 400 fee. When combined with the utilization data in Table IV.3, this indicates that the CCSP can expect that roughly 12% (70% of 16.6%) of rural parents and 28% (80% of 35%) of urban parents will be willing to pay the FCFA 400 fee when their child becomes ill.²⁶

Table IV.5: Mean Payment per Maternal Illness Episode by Deciles of Household Incomes in Moyen Chari, 1992

Deciles of Total	Rural				Urban			
	Mean for all Providers	Traditional Home-Based	Modern Home-Based	Modern Dispensary (a)	Mean for all Providers	Traditional Home-Based	Modern Home-Based	Modern Dispensary (a)
Poorest	241 (479)	202 (506)	457 (696)	491 (146)	1,366 (4,296)	200 (100)	300 (na)	7,750 (10,253)
2	176 (206)	64 (94)	226 (177)	410 (245)	414 (571)		287 (210)	1,028 (1,002)
3	416 (1,229)	300 (535)	182 (172)	1,610 (2,710)	1,205 (2,006)	0 (0)	637 (344)	4,183 (1,969)
4	258 (388)	280 (265)	248 (342)	850 (272)	676 (1,002)		531 (483)	2,270 (1,951)
5	528 (1,313)	100 (111)	623 (1,293)	1,562 (2,254)	607 (899)	50 (86)	273 (233)	1,981 (728)
6	231 (374)	378 (552)	147 (108)	500 (374)	1,204 (1,870)		300 (282)	2,763 (2,161)
7	1,099 (2,668)	2,062 (4,243)	228 (317)	2,345 (3,216)	1,003 (1,337)	1,150 (1,202)	545 (827)	2,366 (1,703)
8	1,082 (3,952)	225 (386)	382 (737)	3,737 (7,617)	2,142 (2,690)		900 (565)	8,000 (na)
9	865 (1,907)	250 (500)	362 (539)	2,782 (3,264)	3,174 (5,016)		3,350 (4,233)	2,006 (1,338)
Wealthiest	273 (533)	33 (60)	180 (190)	1,114 (893)	1,204 (1,141)		633 (416)	1,690 (1,227)
Total	496 (1,712)	395 (1,398)	310 (593)	1,770 (3,472)	1,306 (2,659)	305 (607)	809 (1,619)	2,706 (2,754)

Source: CCSP Baseline Survey, 1992.
Notes: (a) Includes hospitals too.
Standard deviations appear in parentheses below the means.
(na) => only one observation so standard deviation not defined.

Similarly, Table IV.5 indicates that mothers who seek treatment at modern (public and private) dispensaries in Moyen Chari are accustomed to paying an amount that on

²⁶ This assumes, of course, that there are no changes in the quality of care provided.

average exceeds the uniform FCFA 700 fee per episode that is being introduced by the province's cost recovery program. Further analysis of these households reveals that in approximately 45% of rural and 80% of the urban cases, payments were greater than or equal to the FCFA 700 fee. When combined with the utilization data in Table IV.3, this indicates that the CCSP can expect that roughly 8% of rural women and 24% of urban women will be willing to pay the FCFA 700 fee when they become ill.

Applying these admittedly rough estimates of the percentage of illness cases that will be willing to pay the recently established fees to population data by CCSP ZR provides an indication of the expected level of utilization at public facilities after CR pricing is introduced. When this information is later included in a break-even analysis based on the estimated cost of supplying these services, it will enable us to generate a better indicator of the potential success of public sector cost recovery in Moyen Chari. Table IV.6 presents the estimated number of new illness cases per year by public dispensary in Moyen Chari that will be willing to pay the recently established fees.

Table IV.6 suggests that the introduction of the new cost recovery pricing in Moyen Chari may substantially decrease the level of utilization at public dispensaries unless the quality of care they provide can be increased, or the price charged per episode can be lowered. While these estimates should only be interpreted as rough approximations which are sensitive to the underlying assumptions employed, even under a more liberal set of assumptions about the number of illnesses children and adults suffer per year, utilization is expected to decrease.²⁷

²⁷ Sensitivity analysis reveals that for every 1% increase in the number of illness events assumed per year per person, the estimated monthly number of individuals who will be willing to pay the new cost recovery prices in Moyen Chari increases by 1.2%. Thus, if we assume that children suffer from an average of three illness episodes per year, and adults from two, the estimated number of individuals who will be willing to pay the Moyen Chari prices will increase by 30%. In the Maro case, for example, these adjustments increase the estimated number of individuals who will be willing to pay from 141 per month to 182 per month.

Table IV.6 : Estimate of Number of New Illness Cases Per Year in Moyen Chari That Will be Willing to Pay Recently Established Fees

District [A]	Dispensary [B]	Population [C]	Estimated Number of Child Illness Episodes per Year [D]	Estimated Number of Adult Illness Episodes per Year [E]	Estimated Number per Month Who Will be Willing to Pay the Recently Established Fees [F]	Actual Number per Month Who Used Dispensary in 1992/93 [G]	% Change [F] - [G]
Urban							
Danamadji	Danamadji	?		?	?	406	?
Koumra	Koumra Nord	13,652	5,631	17,099	473	673	- 30%
	Koumra Ouest	11,755	4,848	14,723	407	?	?
Rural							
Danamadji	Maro	11,329	4,673	14,189	141	504	- 72%
	Koumogo	11,682	4,818	14,631	146	553	- 74%
	Moussafoyo	9,545	3,937	11,955	119	?	?
Koumra	Bedaya	11,145	4,597	13,959	139	233	- 40%
	Bessada	11,026	4,548	13,810	138	395	- 65%
	Bebopen	9,897	4,082	12,395	123	328	- 63%
	Bedjondo Sud	12,659	5,221	15,855	158	376	- 60%
	Matekaga	10,385	4,283	13,007	130	108	+ 20%
Sarh	Begou	12,522	5,165	15,683	156	675	- 77%
	Kasai I	9,663	3,985	12,102	121	523	- 77%
	Kasai II	6,979	2,878	8,741	87	483	- 82%
	Djoll	11,451	4,723	14,342	143	302	- 53%
	Kokaga	7,303	3,012	9,147	91	?	
	Korbol	3,495	1,441	4,377	44	?	

Source: CCSP Baseline Survey, and MSP of Moyen Chari.

Notes: [D] = [C] * (0.165 * 2.5), where 0.165 is the proportion of under 5 year olds in the Chadian population, and 2.5 is the assumed average number of illness episodes per child per year. [E] = [C] * (0.835*1.5), where 0.835 is the proportion of Chad's population that is 5 years or older, and 1.5 is the assumed average number of illness episodes per adult per year. [F] = ([D] * 0.12 + [E] * 0.08)/12 in the rural case (where 0.12 and 0.08 are the proportion of children and adults respectively who are estimated to be willing to pay the recently established fee); [F] = ([D] * 0.28 + [E] * 0.24)/12 in the urban case.

The preceding description of the supply and utilization of health services in the three CCSP-assisted districts of moyen chari, has provided a fairly strong indication that the utilization of public dispensaries by rural consumers may decrease substantially when the new cost recovery prices are introduced unless the quality of care is significantly improved and/or the price charged is reduced. Moreover, if the recurrent costs identified for CR financing in rural public sector dispensaries are of the order of magnitude of the "average" Goundi project dispensary, then our projections of the number of rural sick who will be willing to pay the new fees suggest that rural public dispensaries can at most hope to recover 50% of these costs. Since the government is in no position to finance the deficit, the future financial viability of these rural dispensaries must be questioned if they are not allowed to adjust prices downwards to better reflect what consumers are apparently willing to pay.

- Allowing rural dispensaries to charge lower fees than urban dispensaries is not only likely to be advantageous from a revenue generating perspective, but will also be equity improving from an ability-to-pay perspective. Our analysis has clearly shown that rural households are significantly less able to pay for health care consumption than urban households, and possibly as a result of this, are significantly less likely to use modern dispensary-based curative care than urban residents are. Giving rural dispensaries the authority to set their fees in accordance with what consumers in their zone are able and willing to pay should improve both cost recovery performance and the long run opportunities for financial sustainability.

V. A Review of Public Sector Cost Recovery Activities Undertaken to Date in Moyen Chari

Public health authorities in Moyen Chari have treated cost recovery as a priority since receiving Decree N. 102 which was issued in October of 1990. Primary responsibility for planning the introduction of cost recovery in public dispensaries has been accorded to the Comite de Direction Prefectoral (CDP), a joint government and NGO health policy advisory committee that meets regularly under the chairmanship of the Medecin-Chef of Moyen Chari, Dr. Daugla. In addition, cost recovery is a regular topic of discussion at the Comite de Sante de Moyen Chari (CSMC) meetings where representatives of all health districts and health projects meet to review their experiences and coordinate their activities.

By entrusting the planning for cost recovery to these two government and NGO coordinating committees, the Ministry of Health in Moyen Chari (MSP) has been able to benefit from the considerable private, not-for-profit, sector cost recovery experience, and has been able to ensure that public sector policy decisions are closely coordinated with those being implemented in the private sector. In fact, in large measure because of Dr. Daugla's coordinating skills and commitment to the ideal of establishing an integrated public and private health sector, the cost recovery decisions that have emanated from these committees have, in most cases, been unanimously agreed to by all participants.

One of the best examples of the use of the CDP and the CSMC mechanism to plan cost recovery activities in Moyen Chari was the decision to ask all projects that currently implement cost recovery in the province to report in detail upon their approach and experiences. These presentations began to take place on a regular basis starting in March of 1991 when the Goundi experience was reviewed in detailed. The presentations covered

a discussion of the pros and cons of adopting a fee per episode pricing mechanism, the need for use of standard treatment protocols, the supervisory mechanisms put in place, the approach used to elicit active community support, and a review of the costs identified for CR financing. The Goundi analysis indicated that private dispensaries serving a base population of 10,000 could recover 100% of salary, drug, printed material, operating and a share of supervision costs by charging adults a fee per episode of FCFA 650 and children FCFA 400 with no exemptions. In subsequent meetings similar presentations were made by the Baptists at Balimba, the ASTPV project in Bekamba, and others.

At its September, 1991 meeting the CDP devoted the entire discussion to cost recovery. In addition to reviewing in detail the implications of Decree N. 102 and initiating the drafting of a province level decree, the CDP identified the following steps as essential preconditions for the broader introduction of public sector cost recovery:

- Complete establishment of the health zones;
- Training of dispensary medical staff to improve the quality of care supplied;
- Training of the participating population in financial management;
- Establishing a viable drug supply system;
- Training of MSP staff in the proper management of drugs and finances;
- Identifying investment, and recurrent costs including maintenance needs.

In order to begin planning for the realization of these steps, different CSMC members were asked to consider and report on the following topics:

- Improving the quality of care (Koumra);
- Community mobilization (Goundi);
- Essential drug supply (Moissala);
- CR financing (Sarh);
- Training of personnel (Kyabe).

Finally, the CDP also decided that a province pharmacy (PAP) should be created to directly supply dispensaries with essential drugs.

One of the strongest aspects of the cost recovery planning effort in Moyen Chari is that it is an extremely pro-active process. Though the CDP always tries to base its recommendations on the best available information, it has not hesitated to experiment when uncertain about the "best" approach to pursue. At the same time, the MSP has remained flexible in its approach. When experiments have failed, or more convincing information has become available, they have been willing and able to change course and adapt their policies. This willingness and ability to be flexible is best reflected in the province's cost recovery decree (see Annex 3 for a copy of the final draft that has been submitted to the Prefet for his signature) which provides for modification of any aspect of the decree *if* new evidence reveals a clear need to adopt a different approach.

Cūrative Care Pricing Policies: One of the principal cost recovery policies outlined in the province's cost recovery decree is the decision to adopt a uniform set of prices for all public and private dispensaries in Moyen Chari. As indicated earlier in the text, the decree establishes a FCFA 700 fee per illness episode for adults, a fee of FCFA 400 per child, and a fee of FCFA 1,000 for any patient (adult or child) from outside a given ZR. Since we have argued against the adoption of uniform or fixed pricing arrangements in the previous sections of this report, it is important that we take a closer look at this stage at the province's rationale for adopting a uniform set of prices.

The decision to adopt of a uniform set of prices for all public and private dispensaries is motivated by a number of factors. The first is the feeling that Moyen Chari's public health sector suffers from a human resource constraint that precludes (at least in the short run) the introduction of complex cost recovery pricing system. Uniform rates are thus seen as advantageous because they are relatively simple and transparent to administer. Second, while it is recognized that the quality of care offered by private sector health facilities is generally superior to that offered by public facilities, it is also recognized that

the private, not-for-profit, sector is willing and able to subsidize the consumption of care and thus charge fees that are less than those deemed necessary to ensure the financial viability of public facilities. The adoption of uniform rates is thus seen as a way of enabling the private sector to raise its fee rates without appearing to be profit seeking, and thus reduce the incentive consumers will have to bypass publicly provided care in favor of private care. The third factor is the desire to have public facilities recover more than the costs of drugs. It is felt that this will not be possible if some health facilities continue to subsidize the cost of care and thus charge lower fees. And finally, there is a desire to prevent health committees from trying to over charge patients.

The decision to charge patients from outside a health zone more than patients from within a health zone is based on a desire to rationalize the use of care and reinforce the recently created ZRs. Moreover, since patients from within the ZR benefit from a lower price, they have an incentive to register themselves at the dispensary. This has the added public health advantage that it allows for more effective targeting of vulnerable groups for promotive and preventive health interventions.

The decision to charge children less than adults is based on a feeling that intra-household income disparities prevent some mothers from having enough money to pay for the treatment of their children. Reducing the price of curative care for children was thus seen as an equity improving policy both from a needs-based and an ability-to-pay-based perspective.

The final element of the curative care pricing policy adopted in Moyen Chari is that FCFA 200 out of every fee payment is to be set aside to be used to finance the treatment of patients who are referred for care at secondary level hospitals. This decision is motivated above all by a desire to reinforce the concept of integrated curative care service delivery where dispensaries treat primary health problems, and hospitals treat the more complicated cases referred to them by the dispensaries. Contrary to this analyst's view that decree N. 102 authorizes the introduction of cost recovery pricing at the hospital level

for all non-emergency outpatient curative care (precisely because the integrated service concept should mean that all non-emergency cases are referral cases), the CDP and CSMC in Moyen Chari have interpreted decree N. 102 in its narrowest sense to preclude the introduction of cost recovery pricing for non-emergency cases that present themselves directly to the hospital for care. Since they can not see how hospital outpatient services can charge referred cases (who have already paid at the dispensary level) while not charging cases that present themselves directly, they have chosen to use some of the funds generated at the dispensary level to finance the costs of the hospital care provided to referred patients.²⁸

Finally, the decision to set the prices at FCFA 700 and FCFA 400 is implicitly based on a break-even cost analysis. The starting point of this analysis is the estimation of the costs for a "typical" public dispensary which are presented in Table V.1 below. Using equation [4] on page 21, we know that the average break-even price is calculated as follows:

$$P = \frac{TC}{NC} = \frac{FCFA\ 1,535,000}{3,000} = FCFA\ 511$$

In order to calculate the relevant child and adult prices, it is assumed that child prices will be 4/7ths of the adult price, and that 50% of all users will be children. Using a total revenue estimate of FCFA 1,535,000 (equal to FCFA 511 multiplied by 3,000 new illness cases per year), the child and adult prices are calculated as follows:

²⁸ Another motivation is that dispensaries can then tell their community that the price they pay for dispensary-based care includes the cost of hospital-based care. If they can not say this, it is argued, community members will be skeptical about having to pay more for dispensary care provided by a nurse than they do for hospital care provided by a medical doctor.

$$\begin{aligned}
1,535,000 &= (P_a \times NC_a) + (P_c \times NC_c) \\
\Rightarrow 1,535,000 &= (P_a \times 1,500) + ((4/7) \times P_a \times 1,500) \\
\Rightarrow \frac{1,535,000}{1,500} &= P_a + (4/7) \times P_a \\
\Rightarrow 1,023 &= (11/7) \times P_a \\
\Rightarrow 1,023 \times (7/11) &= P_a = \text{FCFA } 651 \\
\Rightarrow P_c &= (4/7) \times \text{FCFA } 651 = \text{FCFA } 372
\end{aligned}$$

where an "a" subscript means adult, and a "c" subscript means child. When these break-even prices are rounded up, they yield the FCFA 700 adult price and FCFA 400 child price chosen for Moyen Chari.

There is no doubt that the arguments which led to the adoption of a uniform set of prices for all private and public dispensaries in Moyen Chari accurately reflect the circumstances which currently prevail in the province. It is not our intention here to debate the merits of these arguments. We believe, however, that no matter how valid they are, these arguments do not outweigh the basic conclusion derived in the sections II, III and IV above -- namely, that uniform pricing places the public dispensaries at risk of being unable to fully finance the costs that have been identified for CR funding. While this may not have a major short run impact on the quantity or quality of care that certain dispensaries are able to supply, the long run impact is certain to be much more substantial, eventually even jeopardizing the financial sustainability of these dispensaries.

Table V.1: Baseline Total Annual Cost Estimates Used by the Province of Moyen Chari to Determine the Average Price per Illness Episode.

Annual Fixed Costs	Details of calculation	Sub-total (FCFA)
Incentive payment for medical staff	Nurse: 20,000 x 12 months Medical Assistant: 5,000 x 12 months Laborer: 10,000 x 12 (5,000 = salary; 5,000 = incentive payment)	240,000 60,000 120,000
Maintenance and amortization of 2 bikes	10 FCFA/km for maintenance; 5 FCFA/km for amortization (assuming 5 year useful life); assume 2,500 km traveled/year.	75,000
Stationaries, pens		20,000
Cleaning and other small operating materials		40,000
Printing of management forms	Includes: financial, drug and case management forms, and prenatal and vaccination cards.	50,000
Maintenance and replacement of health center furniture		20,000
Maintenance of Dispensary		10,000
Share of supervision costs		
Total Fixed Costs		635,000
Annual Variable Cost	Details of calculation	Sub-total
Essential drugs	250 new cases (NC)/month x 12 x FCFA 300 (high end average cost estimate/NC)	900,000
Annual Total Cost		1,535,000

Notes: Fixed costs are costs that do not vary with the number of new cases (NC). Variable costs are costs that vary with the number of NC.

An high end average variable cost per NC of FCFA 300 is used in order to ensure that cost recovery pricing was based on the worst case scenario vis a vis drug prescription practices. The project has already begun work on the articulation of standard treatment protocols and is planning to conduct in-service training for all medical staff at the dispensary level in order to ensure the rational use of drugs and to bring the average variable cost per NC down to between FCFA 185 and FCFA 200 – the average variable cost achieved under the BELACD-assisted health project in Goundi.

An indication of the impact of uniform pricing on the financial position of public dispensaries in Moyen Chari is obtained by referring back to Table IV.6 where we presented projections of the number of patients who will be willing to pay the FCFA 700 fee for adults and the FCFA 400 fee for children. If the assumptions used in this analysis are valid, we see that none of the rural public dispensaries will break-even financially if their costs are equal to those estimated in Table V.1. Even if a more liberal set of utilization assumptions are applied (see footnote 12), the conclusion still holds. To see this, consider the Begou dispensary which is projected to have the highest number of individuals who will be willing to pay the new CR fees. Using the more liberal utilization estimates, we project that the average monthly number of new illness cases who will be willing to pay the new CR fees will be 203. From equation [4] on page 22, we know that the break-even annual level of utilization is thus:

$$NC_{break-even} = \frac{TFC}{P-VC} = \frac{635,000}{511-300} = 3,000 \text{ per year, or 250 per month.}$$

In other words, for the Begou dispensary to fully recover the estimated costs identified for CR financing, it will need to treat 47 more new illness cases per month, or reduce its annual costs by FCFA 288,000 -- an amount equal to approximately 18% of the total estimated costs. By examining the itemized input costs reported in Table V.1, we can see that having to reduce costs by 18% will mean that the Begou dispensary will have to eliminate expenditures on all non-labor fixed costs as well as reduce the incentive payments made to dispensary staff by 17%.

While the preceding example is merely illustrative of the potential financing problem that the new uniform CR pricing can cause, it is extremely important to recall from section II that most costs identified for CR financing vary considerably from one dispensary to

another. Consequently, we can be fairly sure that the new uniform CR prices will not equal the actual break-even price for any given dispensary in Moyen Chari.

It is our contention, therefore, that Moyen Chari needs to work in a systematic manner towards the adoption of flexible pricing that reflects actual supply and demand conditions at each dispensary. Doing so, we assert, will not be as complicated an undertaking as some might think. It will require, however, that someone at the province level be able to perform the kind of break-even analysis that has been presented in this report.²⁹ Once these skills have been developed, then this person will work with the health committees of each dispensary on an annual basis to evaluate and adjust their pricing to reflect local realities. The results of the break-even analysis will then be presented at public meetings in the ZR in order to inform and convince people about the need for these changes. Allowing for flexible pricing will not only reduce the risk of incurring persistent budget deficits, but will also allow communities to set prices in line with local willingness and ability to pay.

The only aspect of the new pricing proposal that this consultant feels needs to be changed immediately is the plan to withhold FCFA 200 per illness episode to help defray the cost of referral treatments. First, it is not clear that decree N. 102 prevents the introduction of cost recovery pricing for non-emergency hospital outpatients who seek care directly without being referred by dispensary health staff. If the broader interpretation presented in section III of this report is accepted, then Moyen Chari no longer faces the legal constraint it thinks it does vis a vis hospital outpatient cost recovery. Ultimately, however, this is a legal issue that should be resolved through clarification or modification of decree N. 102. Second, even if the narrower interpretation of decree N. 102 holds, it should be clear from the break-even analysis presented at the beginning of this section, that reducing dispensary revenues by FCFA 200 per new illness case will

²⁹ This task will be greatly facilitated by a simple and interactive computer program that the consultant has produced to run under Windows which will automatically calculate break-even prices or utilization levels.

almost certainly undermine the financial viability of many of the rural public dispensaries in the province.

Moreover, evidence from the Goundi project reveals that the FCFA 200 set aside for defraying the treatment costs of referred patients would only be sufficient to finance a fraction of these referred patients' hospital drug costs. Instituting the pricing proposal thus risks the financial viability of the primary health sector in order to partially solve the recurrent hospital financing problem. To see this, note that data from the Goundi project in 1992 indicate that a total of 13,578 new cases were treated at their dispensaries. The total revenues set aside for defraying the costs of referred patients would thus have been FCFA 2,715,600 (equal to 13,578 multiplied by FCFA 200). At the same time, the number of referrals made to the Goundi hospital from these dispensaries in 1992 was 2,442. This implies that the total revenue available per referral case was FCFA 1,112 (equal to FCFA 2,715,000 divided by 2,442). Meanwhile, data from the Goundi hospital reveal that the average drug cost per hospital patient was FCFA 4,075. Thus, the funds set aside for referral patients would only cover approximately 30% of the drug costs alone for their hospital treatment.

To summarize, therefore, it is our recommendation that Moyen Chari abandon the proposal to set aside FCFA 200 per illness episode, and seek to solve hospital financing problems in a more direct legislative manner. In addition, while we accept the arguments presented for the adoption of a uniform set of prices for all private and public facilities in Moyen Chari, we recommend that this strategy be adopted on a short term basis only, and that work begin immediately to develop the capacity to implement a flexible pricing strategy.

As important as pricing policy decisions may be for the future viability of Moyen Chari's primary health care system, the system is much more seriously threatened by the chronic non-payment of public employee salaries. Though the problem, and therefore the solutions, extend far beyond the health sector, it is not a problem that will go away if

ignored. Rather, if ignored, it is a problem that is sure to completely undermine the public provision of health care.

Problem of Non-Payment of Public Employee Salaries: The chronic non-payment of public employee salaries is without doubt the number one problem facing the province health sector in general and the cost recovery efforts in particular. If it persists, and nursing staff continue to go completely unpaid, it cannot reasonably be expected that they will come to work regularly or take any interest in managing and implementing the cost recovery systems being envisaged. Because of this, health officials in Moyen Chari have come to the conclusion that at a minimum some form of financial incentive payment for dispensary staff needs to be included in the costs that are identified for CR funding. Their proposal is to pay dispensary nurses FCFA 20,000 per month, dispensary medical assistants 5,000 per month, and to hire a laborer for 10,000 per month.

While the need for paying dispensary staff a financial incentive is, at least to this analyst, indisputable, our estimates of the number of patients who will be willing to pay the new CR fees indicate that many rural public dispensaries may have difficulty paying the amounts proposed. At the same time, anecdotal evidence suggests that, in the absence of their salaries, many dispensary nurses have been charging patients an informal fee of FCFA 150 and pocketing the receipts. Based on the 1992 utilization figures reported in Table IV.6, we estimate that the average nurse has therefore been earning approximately FCFA 63,000 per month by charging these informal fees.³⁰ If these estimates are approximately correct, they suggest that even the proposed incentive payments are likely to be inadequate to the extent that they reduce the effective incomes of the dispensary staff. Though there is no easy solution to this problem, it is important that local health officials and the CCSP keep in mind that so long as government salaries are not being paid,

³⁰ The estimated informal fee revenues range from a minimum of FCFA 16,500 if the Bedana dispensary utilization level is used, to a maximum of FCFA 101,250 if the Bégou dispensary utilization level is used.

dispensary staff will probably have little incentive to work for the establishment of a cost recovery system. In fact, they may well have an incentive to undermine efforts to establish a formal cost recovery system.

Before presenting a summary of activities that need to be addressed to effectively launch cost recovery in all public dispensaries in Moyen Chari, we consider one last major issue addressed during this first consultancy assignment, the issue of drug supply.

Essential Drug Supply: As indicated at the beginning of this section, the CDP and CSMC recognize that one of the preconditions for the establishment of public sector cost recovery is the institution of an efficient essential drug supply system. Its own analysis suggests that the province needs to establish a central pharmacy (PAP) that will handle drug procurement, storage, and distribution directly to the dispensaries. In line with this assessment, the province has obtained ITS funding to renovate of a warehouse located on the MSP compound in Sarh.

Though much discussion and thought has also been directed at how the drug supply system should operate, what its manpower needs will be, what management systems and tools should be put in place, and what quantity of drugs will be needed to efficiently operate the system, little of this has been recorded, analyzed and acted upon. Accomplishing these tasks should be a principal component of the CCSP workplan. As such, a number of specific tasks relating to the establishment of an efficient drug supply system have been identified in the summary of activities needed to effectively launch cost recovery in all public dispensaries in Moyen Chari which is presented in section VII of this report.

One immediate drug supply concern, however, that should not wait to be resolved is the fact that current funding for drug procurement under the CCSP and ITS is insufficient to purchase the quantity of drugs necessary to effectively launch public sector cost recovery activities in the Moyen Chari. This conclusion is based upon a calculation of

drug requirements made by members of the CDP and CSMC in conjunction with the consultant. This calculation indicates that a minimum of a 21 month supply of drugs is needed in order to effectively launch cost recovery activities and to ensure that stock-outs or liquidity shortages do not occur (i.e., to ensure that the system is sustainable from a financial standpoint).

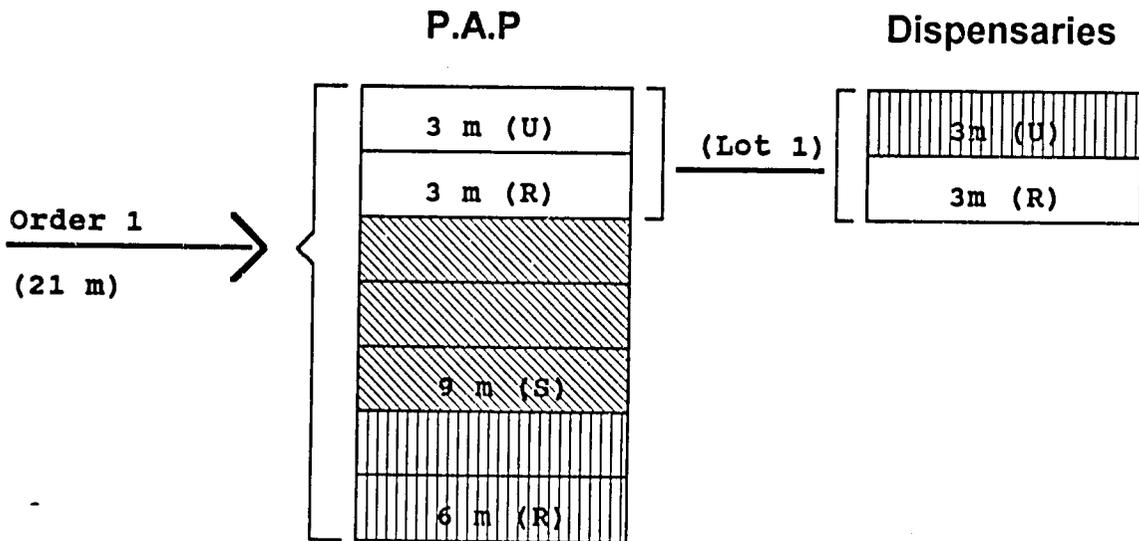
The assumptions underlying the drug requirement calculation are the following: (i) that a 6 month reserve stock of drugs needs to be established at the province level; (ii) that a 3 month reserve of drugs needs to be established at the dispensary level; (iii) that the first three month supply of drugs to dispensaries (after establishing the reserve stock) is to be used to establish a reserve cash fund for the financing of unanticipated expenditure needs; (iv) that the province will place an order of drugs every 6 months; (v) that the drugs will be shipped by air to N'Djamena; and, (vi) that the drugs will be distributed to the dispensaries on a quarterly basis on a cash-and-carry basis only. A diagram which depicts the flow of drugs and cost recovery funds in the system is presented in Figure V.1.

If the CCSP drug budget (\$200,000) is apportioned between the three provinces in proportion to population, then Moyen Chari should be allocated \$100,000 (equal to FCFA 26,000,000). In addition, ITS has a budget of FCFA 6,000,000 for non-Kyabe facilities, which yields a total funding base of FCFA 32,000,000. The estimated total cost of drugs for 17 dispensaries,³¹ for 21 months, based on an average case load per dispensary of 450 new patients per month (the average for Moyen Chari in 1992), and the standard FED treatment protocol per new patient, amounts to FCFA 64,683,531 (or approximately US \$ 248,800).

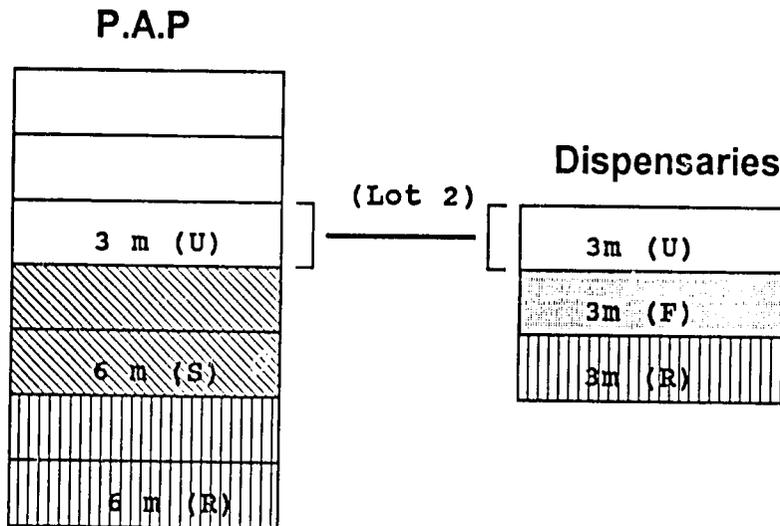
³¹ It should be noted that the Prefecture would like to be able to purchase drugs for 5 Baptist-assisted dispensaries on a reimbursable basis as well. The costs of this have not been included in the current analysis.

Figure V.1: Drug Supply and Distribution for Cost Recovery Start-Up in Moyen Chari

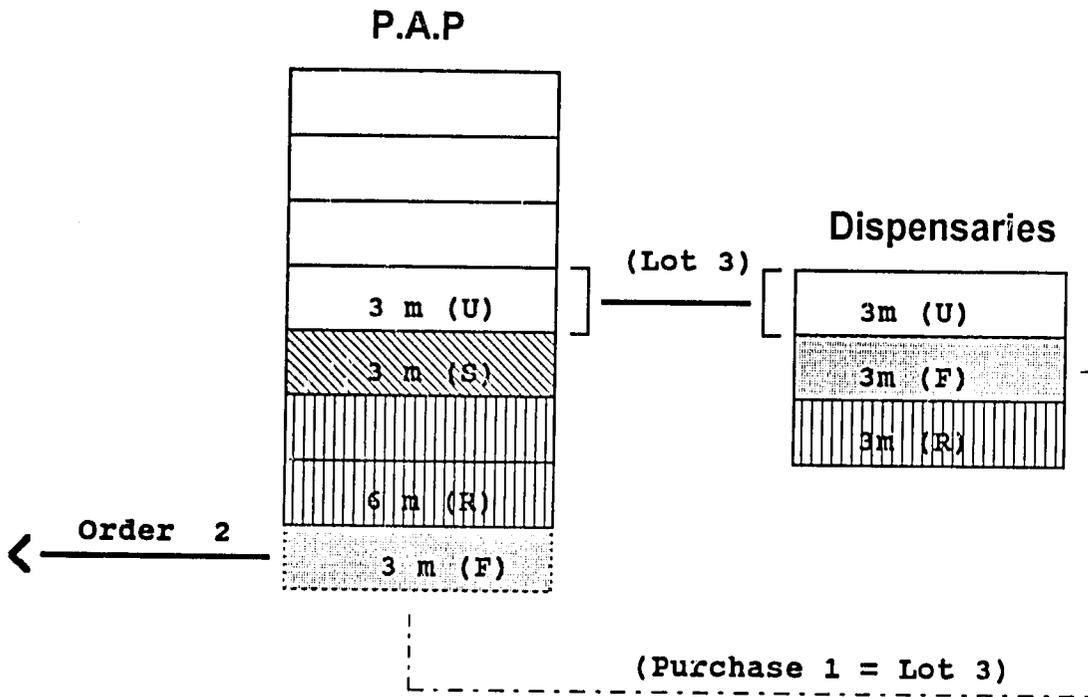
Month 0 - 3:



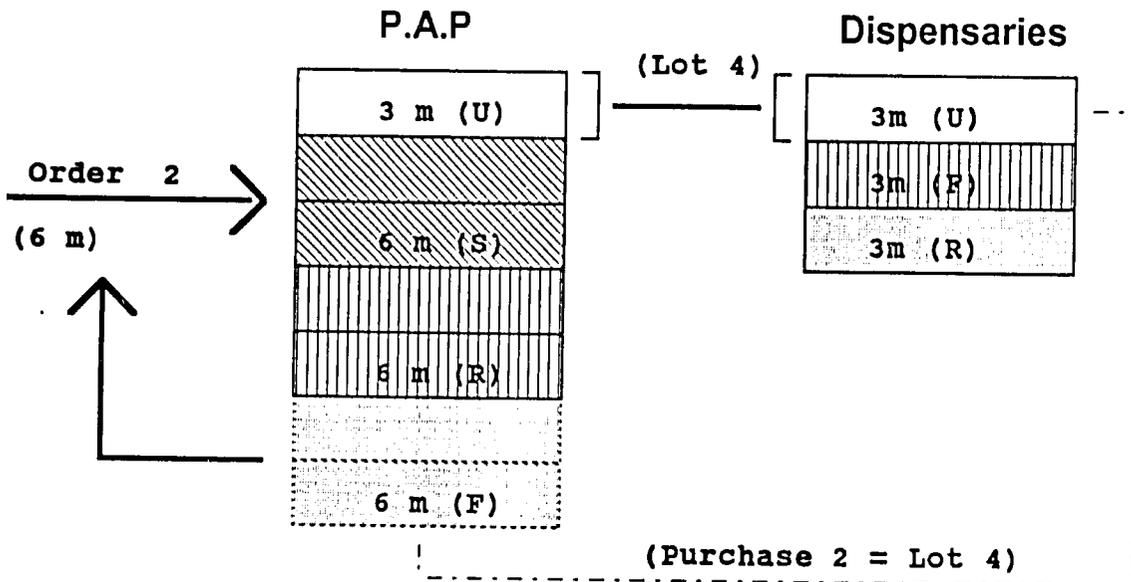
Month 4 - 6:



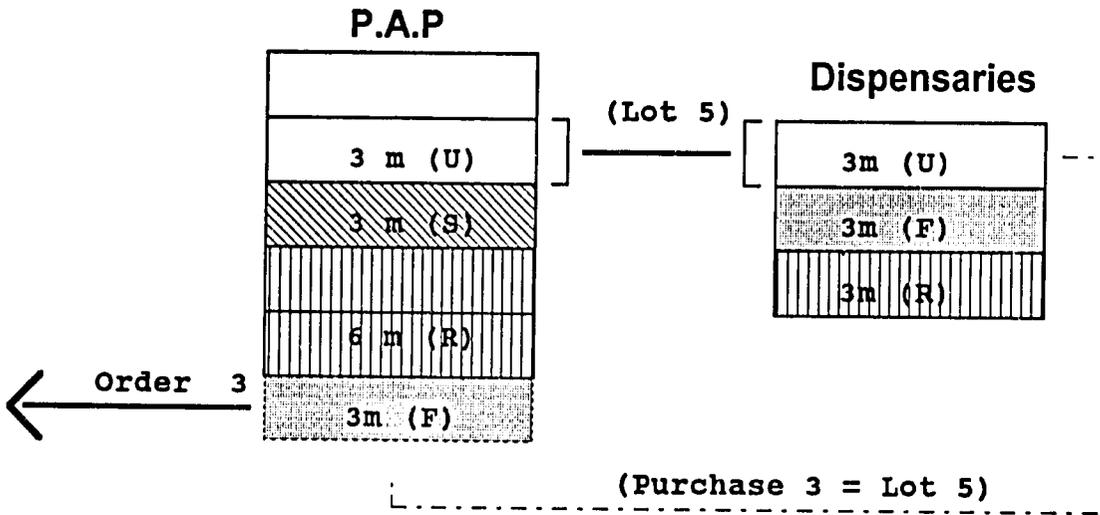
Month 7 - 9:



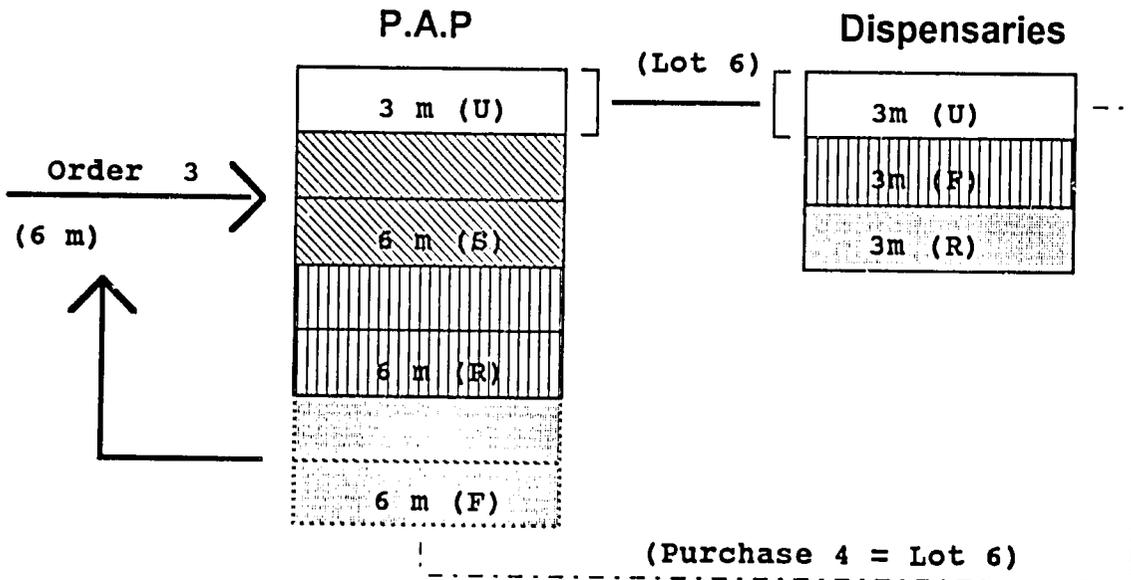
Month 10 - 12:



Month 13 - 15:



Month 16 - 18:



VII: Summary of Activities Needed to Effectively Launch Cost Recovery in all Public Health Facilities in Moyen Chari

Activity Code	Description of Activity	Level of Priority	Extent to which activity has already been undertaken				Commentary
			Fully, no need for further work	Fully, need for further work (see commentary)	Partially (see commentary)	Not at all	
A	PPA and distribution of drugs						
1	Complete the construction of the PPA	1				1	To be completed by end May, 1993. Financing not available for connecting generators nor fencing
2	Determine the drug supply circuit, procedures for ordering and distributing, and frequency of distribution	1					
3	Preparation of management tools for the PAP (Ordering, storage, and distribution)	1					
4	Evaluation of PAP personnel needs	1					
5	Recruitment of personnel	1					
6	Elaboration of job descriptions for PAP personnel	1					
7	Identification of training needs for PAP personnel	2					
8	Training of PAP personnel	2					Possibly at the BELACD pharmacy in Sarh
9	Analysis of recurrent costs of PAP and alternative modes of distributing essential drugs to dispensaries	1					Schwabe
10	Develop a (computerized) pricing model for determining the sale price of drugs and dressings which accounts for the recurrent costs of procurement, storage and distribution	3					Schwabe
11	Train PAP personnel in the use of this drug pricing model	4					

Notes: Levels of priority: 1 = Essential that it is successfully implemented prior to wide-scale implementation of CR; 2 = Advantageous if implemented; 3 = Helpful if implemented (or at least detailed plans articulated for); 4 = Needs to be implemented as soon after launching as possible; 5 = Can wait to be implemented until CR activities are underway.

Summary of Activities Needed to Effectively Launch Cost Recovery in all Public Health Facilities in Moyen Chari

Activity Code	Description of Activity	Level of Priority	Extent to which activity has already been undertaken				Commentary
			Fully, no need for further work	Fully, need for further work (see commentary)	Partially (see commentary)	Not at all	
A	PPA and distribution of drugs						
12	Determine drug and dressing needs for effectively launching cost recovery in public dispensaries	1				1	Reexamine given drug supply through vertical programs and USAID
13	Evaluate funding available for procurement of drugs	1					
14	Order drugs	1					

Summary of Activities Needed to Effectively Launch Cost Recovery in all Public Health Facilities in Moyen Chari

Activity Code	Description of Activity	Level of Priority	Extent to which activity has already been undertaken				Commentary
			Fully, no need for further work	Fully, need for further work (see commentary)	Partially (see commentary)	Not at all	
B	Appropriate use of drugs						
	1 Finish work on the development of standard diagnostic and treatment protocols based on use of essential drugs	2				1	
	2 Train dispensary nurses and medical assistants in the use of these standard protocols	2					
	3 Estimate the costs of supervision and determine a way of financing these costs	1					Schwabe
	4 Establish regular supervision (taking into account recurrent cost implications)	1					Already begun for 2 dispensaries (Koumra Ouest Baguirmi)
	5 Develop indicators for monitoring the use of essential drugs	3					Consumption profiles already established
	6 Evaluate the use of the standard diagnostic and treatment protocols and organize (if necessary) further training to rectify observed problems	5					
7 Design and produce prescription forms	1					Already begun for 2 dispensaries (Koumra Ouest Baguirmi)	

Summary of Activities Needed to Effectively Launch Cost Recovery in all Public Health Facilities in Moyen Chari

Activity Code	Description of Activity	Level of Priority	Extent to which activity has already been undertaken				Commentary
			Fully, no need for further work	Fully, need for further work (see commentary)	Partially (see commentary)	Not at all	
C	Drug Management in Dispensaries						
1	Determine if all dispensaries have drug storage areas with shelving and cupboards	1				1	Work already undertaken in certain dispensaries
2	Assist in establishing adequate drug storage space	1					
3	Determine drug management forms (ordering, storage, distribution to dispensary nurse)	1					
4	Field test drug management forms & change if necessary	1					See drug order forms already developed
5	Determine who will be given responsibility for drug procurement, storage and distribution at the dispensary level	1					
6	Write a job description for personnel responsible for drug management	2					
7	Develop a training program in drug management	3					Drug management partially done. Procurement remains to be done.
8	Train personnel responsible for drug management	3					
9	Establish regular supervision (accounting for recurrent cost implications)	1					Supervision schedule already in place but need to establish recurrent cost implications & financing
10	Develop indicators for monitoring the management of drug supply at the dispensary level	4					
11	Evaluate drug management and organize (if necessary) follow-up in-service training to rectify problems identified in the evaluation	5					

Summary of Activities Needed to Effectively Launch Cost Recovery in all Public Health Facilities in Moyen Chari

Activity Code	Description of Activity	Level of Priority	Extent to which activity has already been undertaken				Commentary
			Fully, no need for further work	Fully, need for further work (see commentary)	Partially (see commentary)	Not at all	
D	Financial Management (Province)						
1	Identify all financial activities at the provincial level relating to cost recovery	2				1	
2	Evaluate personnel needs	2					
3	Draw of scopes of work for cost recovery personnel	2					
4	Recruit personnel	3					
5	Choose financial management forms to be used	4					
6	Establish bank accounts with control systems	6					
7	Identify personnel training needs in the area of cost recovery	4					
8	Develop a training program for the personnel	4					
9	Train the personnel	6					
10	Determine the recurrent costs of the financial management system and how to finance them	3					Schwabe
11	Develop indicators for monitoring revenues and expenditures (particularly for alerting provincial authorities to financing problems relating to the supply of essential inputs such as drugs.	6					Schwabe
12	Develop internal and external audit systems	6					Initial contact made with audit specialist

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Summary of Activities Needed to Effectively Launch Cost Recovery in all Public Health Facilities in Moyen Chari

Activity Code	Description of Activity	Level of Priority	Extent to which activity has already been undertaken				Commentary
			Fully, no need for further work	Fully, need for further work (see commentary)	Partially (see commentary)	Not at all	
E	Financial management (District)						
1	Identify supervisors at the district level	1				1	
2	Elaborate their job descriptions	3					
3	Develop a training program for district supervisors	3					
4	Train supervisors	3					
5	Evaluate the recurrent costs of supervision and determine how to finance these costs	1					
6	Establish regular supervision (accounting for the recurrent cost implications)	1					
7	Develop monitoring indicators for financial management at the dispensary level and at the Health Committee level	2					

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Summary of Activities Needed to Effectively Launch Cost Recovery in all Public Health Facilities in Moyen Chari

Activity Code	Description of Activity	Level of Priority	Extent to which activity has already been undertaken				Commentary
			Fully, no need for further work	Fully, need for further work (see commentary)	Partially (see commentary)	Not at all	
F	Financial Management (Village Health Committee)						
1	Determine governing statutes for Health Committees and management committees	2				1	
2	Mobilize community to form Village Health Committee and Management Committee	1					
3	Outline illustrative job descriptions for members of these committees	2					
4	Determine financial management tools	1					
5	Develop training for members of these committees in the areas of budgeting, financial management, and supervision of dispensary finances	2					
6	Help Village Health Committees find a safe place to save their CR funds	1					
7	Train committee members	3					
8	Help committees set up financial control mechanisms at dispensary	1					
9	Develop a plan to establish associations at the community level which eventually will take over the village health committee and will assist in health care financing	5					

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Summary of Activities Needed to Effectively Launch Cost Recovery in all Public Health Facilities in Moyen Chari

Activity Code	Description of Activity	Level of Priority	Extent to which activity has already been undertaken				Commentary
			Fully, no need for further work	Fully, need for further work (see commentary)	Partially (see commentary)	Not at all	
G	Financial Management (Dispensary)						
1	Identify all financial management functions and activities at dispensary level related to cost recovery	1				1	
2	Elaborate job descriptions for the dispensary personnel relating to cost recovery	1					
3	Evaluate the impact of the added cost recovery-related activities on the time use of dispensary staff and in particular on the supply of curative and preventive care	2					
4	Evaluate personnel needs	1					
5	Recruit personnel	1					
6	Decide on financial management forms	1					
7	Develop a training for dispensary staff in financial management	2					
8	Train the personnel	3					
9	Evaluate the financial management tools	5					
10	Modify tools if necessary	5					
11	Evaluate recurrent costs of supervision and determine how to finance these	5					
12	Establish regular supervision (accounting for recurrent cost implications)	1					
13	Develop indicators for monitoring revenues expenditures and budgetary balance	4					
14	Evaluate the cost recovery performance in public dispensaries	5					

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Summary of Activities Needed to Effectively Launch Cost Recovery in all Public Health Facilities in Moyen Chari

Activity Code	Description of Activity	Level of Priority	Extent to which activity has already been undertaken				Commentary
			Fully, no need for further work	Fully, need for further work (see commentary)	Partially (see commentary)	Not at all	
H	Pricing System						
1	Develop a drug sale pricing model which accounts for the recurrent costs of procurement, storage and distribution and other policies relating to drug use	4				/	
2	Evaluate preventive care pricing arrangements (a demand analysis and financial sustainability analysis)	6					
3	Elaborate a method for establishing flexible pricing at the dispensary level	1					
4	Train the cost recovery accountant in the use of this method	6					
5	Train nurses and/or the treasurers of the Village management committees in the use of this method	6					

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Annex 1

The following table presents the budget share and expenditure elasticity estimates used to estimate private outlays on health care.

Expenditure Elasticity Estimates: Moyen Chari, 1992								
Commodity Group	Rural				Urban			
	w	β (s.e.)	e	R^2	w	β (s.e.)	e	R^2
Health	0.056	0.01137 (0.0025)	1.20	0.02	0.081	0.04304 (0.0078)	1.53	0.08
Food	0.509	-0.0742 (0.0053)	0.85	0.17	0.524	-0.0928 (0.0107)	0.82	0.18
Schooling	0.013	0.0062 (0.0014)	1.47	0.02	0.016	-0.0019 (0.0026)	0.88	0.001
Ceremonies	0.034	0.0373 (0.0032)	2.08	0.13	0.051	0.05587 (0.0063)	2.11	0.19
Clothing	0.091	-0.0275 (0.0017)	0.70	0.20	0.069	-0.0246 (0.0031)	0.64	0.16
Cooking fuel	0.069	-0.0069 (0.0022)	0.90	0.01	0.099	-0.1673 (0.0044)	0.83	0.04
Soap	0.157	-0.5094 (0.0022)	0.67	0.36	0.094	-0.0360 (0.0036)	0.62	0.22

Source: CCSP Baseline Survey, 1992.

Notes: w = the average expenditure share on the consumption of the goods identified. β is the Ordinary Least Squares coefficient estimate obtained from the following linear regression: $w = \alpha + \beta \ln EXP + \varepsilon$, where $\ln EXP$ is the natural logarithm of total household expenditures, and ε is a normally distributed stochastic error term with finite mean and variance. (s.e.) is the standard error of β . $e = (\beta/w) + 1$ is the estimated expenditure elasticity which represents the percentage change in expenditures on a particular good given a 1% increase in total expenditures. R^2 is a measure of the proportion of total variation in w that is explained by $\alpha + \beta \ln EXP$. An R^2 of 0.5 means that 50% of the variation in w can be explained by $\alpha + \beta \ln EXP$.

The results of this analysis indicate that the average household in Moyen Chari spends approximately 6% of its total annual expenditures on health care consumption. Moreover, since $e > 1.0$ for both rural and urban households, actual health care expenditures increase as total expenditures (or incomes) increase. In other words, the wealthier a household the more it spends on health care. Since expenditure elasticity estimates for all other goods (except expenditures on ceremonies) are less than 1.0, this suggests that as incomes increase, households spend a larger share of their total expenditures on health care, and reduce the share allocated to food, clothing, cooking fuel and soap.

Spécial

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(/ISAS + S.C.C. *1/83*
I.G.C.E. *1/83*

(T-) ARRETE N° 152 /MSP/SE/LG/90
INSTITUANT LE SYSTEME DE RECOUVREMENT
DES COÛTS DE LA SANTE

LE MINISTRE DE LA SANTE PUBLIQUE

LE MINISTRE DES FINANCES
ET DE L'INFORMATIQUE,

- (/u la Constitution ;
- (/u les Décrets n°s 044 et 812/PR/CAB/89 des 03/03 et 04/10/89,
portant remaniements Ministériels
- (/u l'Arrêté n° 0074/MSP/SE/DG du 25 Février 1989 portant création
du Comité de conception d'un système de recouvrement des Coûts
de la Santé au Tchad.
- (/u les nécessités de service.

ARRETEMENT

Article 1/ - Il est institué un système de recouvrement des coûts
de la santé au Tchad.

Ce système conçu dans le cadre de la mise en oeuvre
du Programme National des Soins de Santé Primaires,
concerne les zones où s'exécutent les projets qui
s'insèrent dans le programme national des soins de
santé primaires notamment :

1. Programme de Renforcement du Système de Santé
(VIè FED)
2. Appui au Système de Santé (MSP)

.... / ...

3. Programme Prioritaire en Zone de concertation (VIè FED)
4. Survie de l'Enfant au Tchad (USAID)
5. Programme d'Action pour le Développement Social (PADS) :
6. Santé Maternelle et Infantile/Bien Etre Familial
7. Programme de Santé au Tchad (Institut Tropical Suisse)
8. Programme de Soins de Santé Primaire (OMS-UNICEF).

Article 2/ - Le système de recouvrement des coûts consiste à faire payer par le bénéficiaire de soins un tarif forfaitaire par épisode de maladie/risque au niveau des structures de premier échelon ainsi qu'au niveau des consultations externes des références.

*

Article 3/ - Le système de recouvrement des coûts vise les objectifs suivants :

- La réduction des coûts actuels payés par la population pour accéder aux soins médicaux.
- L'augmentation des ressources financières du Ministère de la Santé Publique grâce à une participation financière de la population concernée au niveau des structures sanitaires de base.

Article 4 / - Les Etablissements de Santé de la zone des Projets visés à l'article 1 du présent arrêté sont autorisés à gérer les ressources financières recueillies dans la cadre du recouvrement des coûts.

Article 5/ - Le recouvrement des coûts est assumé par des régisseurs nommés parmi les agents des services de santé, par arrêté conjoint du Ministre des Finances et du Ministre de la Santé Publique, sur proposition de ce dernier.

Article 6/ - La gestion des ressources financières recueillies dans le cadre du système du recouvrement des coûts est placée sous la responsabilité d'un Comité de Gestion de Santé dont la composition sera fixée par le Ministre de la Santé Publique.

Article 7/ - Les recettes provenant du coût de la santé serviront à :

- 1, renouveler les médicaments nécessaires pour reconstituer les stocks des établissements de santé visés à l'article 4 du présent arrêté ;
- 2, couvrir une partie des dépenses du fonctionnement (à l'exclusion des salaires) au fur et à mesure que les recettes le permettent.

Article 8/ - Le Ministère de la Santé Publique doit assurer la conformité des commandes, la réception des produits au niveau national ainsi que la distribution en périphérie. L'approvisionnement des médicaments doit se faire dans le cadre des circuits nationaux officiels.

Article 9/ - Le Comité de Gestion de Santé fera parvenir trimestriellement au Ministère des Finances et de l'Informatique, au Ministère de la Santé Publique ainsi qu'au Comité National de Contrôle prévu à l'article 11 ci-dessous :

1. un état détaillé et certifié des recettes réalisées,
2. un état détaillé et justifié des dépenses engagées et des propositions chiffrées des dépenses à effectuer.

Article 10/ - Le produit des opérations de recouvrement des coûts sera * déposé dans un compte ouvert auprès d'une banque commerciale ou à la Poste (CCP).

Article 11/ - Un Comité National de Contrôle de la Gestion qui sera créé par arrêté interministériel effectuera le contrôle périodique de la gestion du système.

Ce Comité sera composé d'agents du Ministère de la Santé publique, du Ministère des Finances et de l'Informatique et du Ministère Délégué à la Présidence de la République chargé de l'Inspection Générale et Contrôle d'Etat.

Article 12/ - Le Comité de conception du système du recouvrement créé par arrêté susvisé assurera le suivi et l'évaluation du système,

Il proposera des réformes destinées à augmenter l'efficacité dudit système,

Article 13/ - Le système de recouvrement des coûts remplace tout autre système de perception de taxes dans les structures sanitaires concernées.

Article 14/ - Les ressources générées par l'application du présent système viennent en complément du crédit alloué par le budget général.

Article 15/ - Le présent arrêté qui prend effet à compter de la date de signature sera enregistré et publié partout où besoin sera.

N'jaména, le 20 octobre 1990

Le Ministre de la Santé Publique

A GUERINA

Le Ministre des Finances et de l'Informatique

N'GARNAYAL M'BAYLEIDANA

- SGP
- SGQ
- IGCE
- Tous Ministères
- FED
- MSP
- OHS
- PHUD
- UNICEF
- BIRD - PADS.

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