Applying Market Mechanisms to Central Medical Stores

Experiences from Burkina Faso, Cameroon, and Senegal

Ramesh Govindaraj and Christopher H. Herbst

July 2010
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Health, Nutrition and Population (HNP) Discussion Paper

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Experiences from Burkina Faso, Cameroon, and Senegal

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\textbf{Abstract}: This study summarizes the findings of three assessments of Central Medical Store (CMS) reform and performance in Francophone Africa. The study aims to document and characterize the organizational reform of the CMSs and the impact of the reform on CMS management and performance in Cameroon, Burkina and Senegal. It seeks further to assess the extent to which increased autonomy brought about by such "marketizing" reforms has had an impact on intermediate CMS results—service quality, product quality, and access to medicines. The findings indicate that organizational reform did contribute towards improving operational performance which, in turn, influenced service quality, product quality, and access to CMS-supplied medicine in these countries. However, improvements in these areas were premised not simply on increased autonomy, but on a whole variety of drivers, both internal and external to a CMS. These include a strong regulatory framework—the conventions, laws, regulations, and administrative acts that increase the flexibility of some decision making rights, whilst constraining others, with an emphasis on social obligations, accountability, and transparency—as well as external factors, such as technical assistance, government subsidies, and relevant external policies, institutions and regulations. The paper ends by proposing a framework that could be used both for the design as well as for the analysis of marketizing reforms in CMSs and other public sector commodity supply entities in developing countries. The framework is sufficiently general that, with some modifications, it could also be applied usefully to the design and analysis of such reform in other public sector institutions delivering social services.

\textbf{Keywords}: Central Medical Stores, Supply Chain, Pharmaceuticals, Marketization, Autonomization

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\textbf{Correspondence Details}: name, institution address (street, city, country), telephone number, fax number, Email, website
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<tr>
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<td>ARV</td>
<td>Antiretrovirals</td>
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<tr>
<td>CAMEG</td>
<td>La Centrale d’Achat des Médicaments Essentiels Génériques et des Consommables Médicaux (Central Agency for Essential Generic Medicines and Medical Supplies)</td>
</tr>
<tr>
<td>CAPP</td>
<td>Centre d’Approvisionnement Pharmaceutique Provincial (Provincial Pharmaceutical Supply Center)</td>
</tr>
<tr>
<td>CENAME</td>
<td>Centre National d’Approvisionnement des Médicaments Essentiels (National Essential Drugs Procurement Cooperative)</td>
</tr>
<tr>
<td>CMS</td>
<td>Central medical store</td>
</tr>
<tr>
<td>FCFA</td>
<td>Franc Coopération Financière en Afrique (Central and West African Franc)</td>
</tr>
<tr>
<td>GMP</td>
<td>Good manufacturing practice</td>
</tr>
<tr>
<td>HR</td>
<td>Human resources</td>
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<tr>
<td>IDA</td>
<td>International Development Association</td>
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<tr>
<td>MDG</td>
<td>Millennium Development Goals</td>
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<td>Ministry of Finance</td>
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<tr>
<td>MoH</td>
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<tr>
<td>MoPH</td>
<td>Ministry of Public Health (Senegal)</td>
</tr>
<tr>
<td>ONAPHARM</td>
<td>Organisation Nationale d’Approvisionnement Pharmaceutique (Semi-autonomous CMS in Burkina Faso, established in 1985)</td>
</tr>
<tr>
<td>PCA</td>
<td>Pharmacie Centrale d’Approvisionnement (Central Pharmaceuticals Procurement unit: Non-autonomous CMS in Cameroon operating until 1985)</td>
</tr>
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<td>PNA</td>
<td>Pharmacie Nationale d’Approvisionnement (Senegal National Pharmacy)</td>
</tr>
<tr>
<td>PRA</td>
<td>Pharmacies Régionales d’Approvisionnement (Senegal Regional Pharmacy)</td>
</tr>
<tr>
<td>SONAPHARM</td>
<td>Société Nationale d’Approvisionnement Pharmaceutique (National Pharmaceutical Society)</td>
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PART I – INTRODUCTION

BACKGROUND AND RATIONALE

Public sector health programs require a continuous, reliable flow of essential medicines and health commodities. Well-functioning public sector pharmaceutical supply systems are, therefore, critical to the effective delivery of health services, the realization of primary health care goals, and achieving the health-related Millennium Development Goals (MDG).

In most sub-Saharan African countries, the historical approach to public sector medicines supply has been the use of the Central Medical Store (CMS). The CMS was charged with the procurement and distribution of medicines and commodities to public sector health facilities. It was typically owned by the government, organized as part of the civil service—often as a division of the Ministry of Health (MoH)—and financed from the government budget. The CMS normally distributed medicines free of charge to health facilities.

As has been observed in many state-run services around the world, CMSs were characterized by inefficiency and poor performance. There is indisputable evidence that centralized CMSs in Africa have experienced serious problems with procurement, financial and logistics management, security, and storage. As with other public institutions, CMSs in Africa have failed to adapt to the increasing complexity of the global pharmaceutical market. Shortages of trained staff have been exacerbated by bureaucratic rigidity and poor incentives. In addition, there is evidence of corruption, lack of transparency, leakage, and rent-seeking in the system, which is frequently politically influenced.

In the 1980s and 1990s, many governments began experimenting with various forms of “marketizing”1 in the health sector (Preker and Harding 2003). By far the most popular type of CMS reform was the granting of increased financial and managerial autonomy. Guided by “new public management” principles similar to those motivating greater autonomy for public hospitals, governments introduced private sector management features into their public sector medicines supply chains. In developing countries, these changes were often part of wider public sector reforms involving decentralization, privatization, and cost recovery, driven by pressure for fiscal consolidation.

Several countries in Francophone Africa introduced some form of autonomy in their CMSs in the 1980s and 1990s, well before other developing countries. This longer history, and the opportunity to compare the CMS reform experience across countries with a similar approach to public sector drug supply, makes Francophone Africa a good candidate for study. Although there is a consensus that CMS reform is necessary, there is

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1 Marketizing is the process that enables a state-owned enterprise to act like a market-oriented firm. This is achieved through reduction of state subsidies, deregulation, organizational restructuring, decentralization, and privatization.
a paucity of evidence on whether governments, in instituting marketizing reforms, can indeed improve the public sector supply of medicines. This study is intended to fill this knowledge gap.

ANALYZING THE MARKETIZATION OF PUBLIC SECTOR ORGANIZATIONS

Organizational marketizing has been discussed extensively in the literature on public hospitals. Very little has been published to date, however, on the application of such reforms to CMSs. Nevertheless, the conceptual framework applicable to hospital reform can be applied to CMS reform. The common theme underpinning these reforms is “that: (i) ownership of service delivery is kept in the public sector; but (ii) (service providers) are moved out of the core public service, transformed into a more independent entity, and made responsible for their performance. This means applying structures and incentives characteristic of the private sector and competitive markets to publicly owned service delivery organizations. This is based on the expectation that market pressures will reward good performance while increasing the cost of poor performance, and thereby contribute to greater efficiency and quality” (Jakab and others 2002).

This type of organizational reform—involving the application of private sector structures and practices—shifts the CMS along a continuum between two extremes. At one end is a CMS that is simply a division of the MoH, operating under the same rules as all government budget agencies. At the other end is a private sector-owned, competitive, for-profit medicines wholesaler or distributor. In between these two extremes is a range of possible organizational forms: semi-autonomous units within the MoH; legally autonomous agencies owned by government with nonprofit, social objectives; marketized government-owned enterprises with commercial objectives; and partially privatized enterprises, in which the government owns either a majority or minority of shares.

Autonomy is not an absolute state (Collins and others 1999) with many variations in the type and level of decision-making authority transferred to the CMS as part of marketizing reform. There are also many variants in the governance structures put in place to oversee the autonomous entity (Govindaraj and Chawla 1996). Because of this diversity, in studying marketizing reforms, it can be helpful to characterize the reforms using a standardized analytical framework that identifies changes in the incentives facing the organization and in the key institutional characteristics that affect how the reformed organization responds to changed incentives.

Public sector organizational reform typically changes two features that have a strong influence on how the service delivery organization performs—governance and funding arrangements.

- Governance in this context refers to the relationship between the owner(s)—usually the government—and the CMS. Autonomous CMSs usually have a governance structure consisting of a board of directors appointed by the owners that supervises the management of the CMS and approves strategic decisions. Other stakeholders are sometimes included on the board (such as representatives of the community and the funders—including donors and customers). Autonomization and marketizing reforms...
attempt to strengthen governance by establishing an agency that has clear, focused objectives; independent, professional supervision; and better alignment of external and internal incentives with the objectives of the organization.

- Funding arrangements for the CMS have a powerful influence on their incentives for quality and efficiency. Marketizing reforms typically change the funding arrangements from provision of a line-item budget to cover the costs of various inputs to payment on the basis of outputs or services provided to paying customers. CMS reform is often accompanied by a shift from providing public health facilities with free supplies of medicines to giving health facilities responsibility for buying medicines from within their own budgets.

The impact that these two influences have on the performance of the CMS depends on what kind of institutional rules it operates under. It is useful to distinguish several critical features of the design of organizational reform that are major determinants of how the organization responds to external incentives (Preker and Harding 2003):

- Decision rights: The extent to which management decision rights are moved from the MoH hierarchy to the CMS board or management for service development, marketing, financial management, human resource management, procurement, logistics, and capital investment.

- Residual claim on surpluses: In traditional CMSs organized as budgetary units of the ministry, the Treasury has a claim over any unspent funds. A fully autonomous CMS is able to retain surpluses it earns through cost control, efficiency gains, and revenue growth—and has a “hard budget constraint.” (It will not be bailed out if it runs deficits.) As a result, external financial incentives are transmitted into stronger internal incentives for performance.

- Exposure to markets: This subjects the CMS to greater competition in the markets within which it operates. This includes both the markets the CMS buys from—medicines manufacturers and distributors—and the markets the CMS sells to—health facilities and pharmacies. Some CMSs have a monopoly right to supply public health facilities; in other cases facilities are free to buy from competing distributors and wholesalers.

- Accountability: Autonomization or marketizing reform usually transforms accountability from vertical administrative accountability to a government ministry in compliance with the public sector rules, toward accountability for performance to a board of directors (and ultimately to stakeholders or shareholders), and contractual accountability to customers.

- Social obligations to provide services for public sector clients: Even if these services are unprofitable, traditional CMSs have a set of “implicit” duties and universal obligations. Following autonomy, these social obligations need to be enforced (with
some combination of mandates and incentives) to counterbalance the CMS’s new incentives to expand profitable services and eliminate unprofitable ones.

The conceptual case for giving autonomy to CMSs, as with other public service providers, is that it “lets managers manage” and enables them to respond to incentives for efficiency and more customer-responsive service. In addition, there are practical arguments that autonomy makes it possible to bring private sector management skills to bear in the board of directors, who would have the freedom to hire qualified, professional pharmaceutical supply managers and institute private sector practices in the CMS. Set against these potential benefits, however, are some well-documented risks.

Successful design and implementation of marketizing reforms requires complex, coordinated changes to be made to governance, funding arrangements and institutional rules related to decision rights, residual claims, accountability, and social obligations. Inconsistent or partial reform can have negative consequences. For example, substantial financial autonomy and stronger financial incentives for the CMS can have an adverse impact on equity of access unless explicit mechanisms are put in place to ensure that the CMS meets defined social objectives. Similarly, increases in management flexibility without commensurate strengthening of accountability can lead to governance failures. Finally, these modes of reform demand strong capacity for governance, management, and effective change. Without such measures, even well-designed reform can fail during implementation.

OBJECTIVE, METHODOLOGY, AND ORGANIZATION OF REPORT

This paper collates and summarizes the findings of three quick individual CMS assessments commissioned by the World Bank in 2006, carried out by local consultants in Senegal, Burkina Faso, and Cameroon and overseen by John Snow International. Each country assessment collected data and information specific to the setup, reform, and performance of each Central Medical Store. Assessments, carried out with a very limited budget, were not meant to be rigorous studies, but vehicles to obtain initial qualitative information on the reform process and its impact, and with an aim to inform and encourage more rigorous studies in the future.

The paper is based on the three assessments. It aims to document and characterize the organizational reform of the CMSs, and its impact on CMS management and performance in Cameroon, Burkina and Senegal. It compares the operational performance of the three “reformed” CMSs in carrying out procurement and logistics functions with their performance prior to reform and then makes cross-country comparisons. It seeks to assess the extent to which increased autonomy has had an impact on intermediate CMS results—service quality, product quality, and access to medicines. One aim is to produce key recommendations and identify key drivers of efficiency and social performance in CMS organizational reform.
The study is largely qualitative, with some quantitative elements. The qualitative assessment on which this report largely draws is based on published studies and reports, a review of the “gray literature,” other documentary evidence, structured interviews, and observations in the field. Quantitative elements, where evident, are based on limited data gathered through a standardized questionnaire administered in each country. A limited budget and political sensitivities prevented more comprehensive quantitative data from being collected.

Although pre-reform CMS and supply chain data are limited for all three countries, based on qualitative evidence, it is possible to postulate a causal chain of mechanisms that connect the organizational reforms of the 1990s to governance and management changes in the CMS. The report will show that reform contributed towards improving operational performance and in turn influenced service quality, product quality, and access to CMS-supplied medicines.
PART II– CMS AUTONOMY REFORMS

Burkina, Cameroon, and Senegal began experimenting with the incorporation of private sector elements into their CMSs in the 1980s, but it was not until the 1990s that more systematic and comprehensive reforms were instituted and coupled with a focus on social objectives. Reforms in the 1990s were part of a primary care strategy based on the principles of the Bamako Initiative that emphasized decentralization and cost recovery. These health system reforms changed the way CMSs supplied the public sector—from distributing budget-financed free supplies to the cost-recovered sale of drugs to depots and health facilities. The reforms narrowed the focus of the CMSs to serving the public and nonprofit health sectors and removed the conflicting commercial objectives. Organizational reform focusing on social objectives helped to form the basis for improving service and product quality, geographical access, affordability, availability, and acceptability of essential medicines. Annex 1 summarizes the type of autonomy given to the CMSs at each stage of the reforms.²

FIRST PHASE (PRE-1990s) OF MARKETIZING CMS

In all three countries, prior to the first phase of reforms, the CMS was a unit embedded in the Ministry of Health, which procured medicines and commodities under public procurement law with funds from the state budget. These supplies were distributed free of charge to public health facilities. A multitude of factors contributed to poor performance by these traditional CMSs, including low budgets, rigid centralized organization, few internal controls on storage and distribution (so that drugs were frequently diverted and sold illegally by health personnel)³, and lack of managerial, planning, financial, and other human resource capacities. All three experienced persistent and gross shortages of drugs within the public health system by the late 1970s and early 1980s.

Senegal was the first to re-organize its traditional CMS into a semi-autonomous unit—Pharmacie Nationale d’Approvisionnement (Senegal National Pharmacy) or PNA—in 1979. The reform was an attempt to better support primary health care policies, to

² Annex 1 to this report analyzes in more detail the changes in the CMS organization and incentive environment with each wave of reform policy in Burkina, Cameroon, and Senegal, using the conceptual framework introduced in Section 1 of the paper. It tabulates changes to governance structures, funding arrangements, management decision rights, residual claimant status, accountability mechanisms, exposure to competition, and mechanisms for securing social obligations. A noteworthy finding of the analysis is that the Burkina and Cameroon CMSs actually had greater managerial autonomy, greater exposure to competition, and stronger incentives for profit maximization through serving private clients in first phase of reform. But these freedoms and incentives were not accompanied by stronger accountability, and social obligations were an unfunded and unenforced mandate. The second phase of reform circumscribed managerial autonomy and exposure to competition, and constrained the ability of CMSs to profit from serving private sector clients in Burkina Faso and Cameroon. Accountability was strengthened and broadened to include accountability to the community and to donors. In the second phase, there was also growth in public and donor funding for meeting social obligations—both directly by subsidizing the supply of medicines to the CMSs and indirectly by increasing financing at facility level and financial protection for poor consumers.
ultimately move toward decentralization, and to strengthen local service delivery. PNA was constituted with its own headquarters and store separate from the Ministry of Public Health (MoPH), a board of directors and its own director. These posts, however, were filled with government officials appointed by the president. Bureaucratic control over procurement and the distribution of budget-financed supplies to all MoPH health facilities did not change substantially. The PNA was, however, permitted to sell drugs at a profit to community and subdistrict health committees at purportedly affordable prices.

In Cameroon, the traditional CMS was reconstituted into ONAPHARM by presidential decree in 1985 with its own headquarters, board, and a slightly more market-oriented constitution. ONAPHARM’s operational and drug procurement budget was almost entirely dependent on dwindling state funds until 1989, with drugs supplied to customers free of charge until then. As in the case of Senegal, bureaucratic control over ONAPHARM’s use of budget funds did not change much after this reform.

Following a steady decline in budget funding, government support in both countries ceased completely—in 1989 in Cameroon and in 1994 in Senegal. PNA and ONAPHARM were forced to switch to a profit-oriented model whereby considerable markups were applied to their products. This strategic and financial change occurred around the same time that wider health policy changes opened the doors for cost recovery at the facility level. In both countries, the CMSs focused predominantly on supplying customers who could pay, and hopes that they would use profits to cross-subsidize supply to poorer clients in the public sector were not realized. By 1992, ONAPHARM ceased to function as Cameroon’s CMS, and it was formally abolished in 1994.

Burkina Faso reformed its CMS in 1985 by establishing SONAPHARM, a state enterprise with a board of governors, a mixed ownership structure (51 percent state-owned), and the freedom to supply drugs to both the public and the private sectors. It operated dual financing and accounting systems. SONAPHARM had considerable financial autonomy to use shareholders funds and to set profit margins for sales to private pharmacies and depots. At the same time, it remained under government budgetary control and was publicly accountable for the government-allocated budget used to supply products to public sector facilities free of charge. The authorities hoped that the private shareholding and management practices would benefit not only the private sector business, but also the public sector procurement and distribution circuit. As a consequence of problems with the public sector part of the CMS, SONAPHARM was fully privatized in 1994 and no longer served as the national CMS (Afogbe 1996).

**RESULTS OF FIRST WAVE OF CMS REFORMS**

In spite of reforms, all three countries continued to experience a glaring paucity of essential drugs at the facility level. In Cameroon, by 1989, severe drug shortages at public

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4 SONAPHARM is a semi-autonomous CMS that operated in Cameroon from 1985 to 1994.
facilities compelled approximately 80 percent of the populace to buy drugs from private facilities. After 1990, when ONAPHARM began to sell drugs to facilities—which recovered costs from patients—drugs largely became unaffordable to the poor. In Burkina and Senegal, where most public sector facilities continued to receive some drugs free of charge from SONAPHARM and PNA, the lack of availability of essential drugs led many to turn to the costly private sector.\(^6\)

In each instance, these problems were attributed largely to management and operational inefficiencies at the CMS. Other factors were undoubtedly at work, however, including cuts in public funding and sharp increases in imported medicines prices following a devaluation in 1994. In Senegal, decentralization to local communities of responsibility for health services and health budget formulation took place in 1996 and was followed by a period of difficulty in mobilizing medicines budgets for districts and hospitals. In Cameroon, studies of ONAPHARM in 1992 and 1995 found that it continued to function in a similar way to the centralized CMS it replaced and to exhibit similar performance weaknesses (World Bank 1992; European Union 1995).\(^7\) A 1993 study of a sample of drugs supplied by ONAPHARM found it was supplying brand-name drugs that were approximately six times more expensive than their generic equivalents. (World Bank 1993)

A European Union report (1995) attributed the poor performance in Cameroon to a lack of autonomy and management controls as well as public sector constraints. More specifically, it blamed “the general conditions of operations internal to the public sector; the lack of any real management autonomy, combined with the lack of quality management, inadequate management procedures and constraints imposed by the public sector environment in which the CMS functioned.” In Senegal, several international assessments in the 1980s pointed to an inadequate supply of drugs at peripheral levels of care, inadequate management practices, poor financial management, delays in procurement and payment of suppliers, mismatches between items requisitioned and those supplied, procurement not always being from the least expensive source, and poor inventory control leading to frequent stock-outs and corruption (World Bank 1982; Osmanski and others 1991; Watt 1993).

All three CMSs also neglected their commitment to fulfill their social obligations to supply the public sector once budget funding was eliminated or cut to insufficient levels to cover the rising costs of public supply. After government funding for drugs ceased in 1989, ONAPHARM began to act like a for-profit business. It abandoned the procurement of essential generic drugs, competitive tendering, and quality assurance in favor of purchasing expensive brand-name drugs (often near their expiration date) through direct negotiations with suppliers, sold at marked-up prices to the few public health facilities who could afford them (Cornell and Fields. 1991). In Burkina, SONAPHARM’s management increasingly neglected subsidized public sector distribution in favor of
distribution to private, for-profit retail pharmacies. A review argued that the heavy influence of the local private pharmacy lobby had “hijacked” the CMS (World Bank 1995). Financially autonomous CMSs—with an unclear mix of commercial and social objectives and with underfunded and unenforced social obligations—focused on profit margins and revenue growth. In Senegal too, social obligations were neglected, with an overwhelming tendency to procure brand-name drugs at high prices and high markups.

SECOND WAVE (1990s) OF CMS REFORMS

By the early 1990s, all three countries were undertaking broader public sector reforms designed to cut public spending and increase public sector efficiency in order to achieve macroeconomic stabilization. These developments, together with continuing dissatisfaction with CMS performance, were the catalyst for the next phase of pharmaceutical policy and CMS reform. Pharmaceutical reforms in each country were part of a primary care strategy based on the principles of the Bamako Initiative that emphasized decentralization and cost-recovery. In Senegal, the proposal for CMS autonomy was also embedded in a major hospital autonomization strategy.

Essential drug depots established in Burkina Health, and health facilities in Cameroon and Senegal, operated revolving drug funds to recover an increasing share of the costs of essential medicines. These health system reforms changed the way CMS supplied the public sector from the distribution of budget-financed free supplies to the cost-recovered sale of drugs to depots and health facilities. Other studies have evaluated the effects of the Bamako Initiative’s introduction of user charges and development of revolving drug funds (Ridde 2004; Nougbara and others 2008; Sauerborn and others 1995; von Massow and others 1998) and found adverse effects on access, utilization, and rational use of drugs, which had to be corrected in later phases of reform by increased public financing and schemes for financial protection of the poor. Evaluation of user-charging policies and drug revolving funds is not the focus of this study, which examines the parallel reforms to the organization and financing of the CMSs. The findings of this study on CMS reform are potentially relevant in other health system contexts which do not rely on user charges, but which decentralize public financing for health services, including medicines.

CMS reform in Cameroon and Burkina had significant technical and financial support from the international donor community for design and implementation of this later phase of CMS reform. In both countries, many donors had set up parallel drug supply chains because of poor CMS performance. Conventions were agreed between donors and government on the creation of autonomous and socially committed CMSs, with the objective of ensuring availability of quality essential drugs and medical supplies to the

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9 The Bamako Initiative was a formal statement adopted by African health ministers in 1987 in Bamako, Mali, to implement strategies designed to increase the availability of essential drugs and other healthcare services for sub-Saharan Africans.
population. There was no comparable coordinated donor-government agreement in Senegal on the governance and objectives of the CMS.

Independent nonprofit CMSs were established: CENAME\textsuperscript{10} in Cameroon between 1995 and 1998 and CAMEG\textsuperscript{11} in Burkina between 1992 and 1998. CAMEG is a distinct legal entity that is attached to the MoH and has the status of “a public corporation with an industrial and commercial character that has financial and managerial autonomy.” CENAME has not yet been conferred formal legal status. Both CMSs have independent boards in which the MoH and other government representatives are a minority and in which donors (as funders of essential drugs provision) and community members are represented (table 2-1).

<table>
<thead>
<tr>
<th>Country</th>
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<td>0</td>
</tr>
<tr>
<td></td>
<td>Post-reform</td>
<td>45.46</td>
<td>36.36</td>
<td>18.18</td>
<td>0</td>
</tr>
<tr>
<td>Cameroon</td>
<td>Pre-reform</td>
<td>22.22</td>
<td>77.78</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Post-reform</td>
<td>50 (CAPPs\textsuperscript{12})</td>
<td>20</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Senegal</td>
<td>Pre-reform</td>
<td>No board</td>
<td>100%</td>
<td>No board</td>
<td>No board</td>
</tr>
<tr>
<td></td>
<td>Post-reform</td>
<td>22.22</td>
<td>66.67</td>
<td>0</td>
<td>11.11</td>
</tr>
</tbody>
</table>

Donors and external technical advisers assisted in drawing up statutes for CENAME and CAMEG that described in a detailed, coherent and consistent way the CMS’s objectives, organizational structure, and rules. The statutes require the CMS to follow national drugs policies and good procurement practice and adhere to government regulations on selling prices. For example, they require competitive tendering and the procurement of generic essential drugs only and include articles aimed at achieving competition in the generics market. The statutes detail the organizational nature of the CMS, spelling out the membership and selection of the board and the roles of the board, the director, and the departments in the management of the CMS. In both countries, donors also provided substantial funds for investment in upgrading the CMSs in the establishment phase, for infrastructure improvements, initial drug stocks, staff training, and technical assistance.

In Senegal the reform process and design of the CMS was more incremental and there were no conventions or statutes to regulate the structure or operations of a reformed CMS. There was donor financial and personnel support (from the EU, USAID, and WHO among others) for building the PNA’s capacity from 1995 onwards, which led to a step-improvement in the PNA. However, there was less donor support for infrastructure development. Some financial reform also occurred in the mid-1990s. In 1998 a document

\textsuperscript{10} Centre National d’Approvisionnement des Médicaments Essentiels (National Essential Drugs Procurement Cooperative).

\textsuperscript{11} La Centrale d’Achat des Médicaments Essentiels Génériques.

\textsuperscript{12} Centre d’Approvisionnement Pharmaceutique Provincial (Provincial Pharmaceutical Supply Centers): Autonomous provincial pharmaceutical supply centers.
published on the national hospital reform strategy included an annex outlining a general scheme for a more autonomous PNA. This document specified that the PNA would be under MoPH oversight, would have an advisory board, and would have the aims of achieving good procurement prices, distributing quality medicines, and ensuring equal geographic access to medicines. However, the document does not detail organizational design, the roles of the various actors, the PNA’s relationship with the government, or CMS operations. The board structure and management processes remained government-dominated after reform.

The most significant transfer of decision-making authority to an independent board and director occurred in CAMEG in Burkina, but was also substantial for CENAME in Cameroon. The boards were given autonomy in strategic management, and the CMS directors were given autonomy in human resource management, financial management, procurement, and logistics management. In both cases, the director’s autonomy was accompanied by establishing the position’s clear accountability to the independent board. But in Senegal, the transfer of authority to the board was less clear, as was the director’s accountability to the board, because the director continued to be appointed directly by the president. There was no clear increase in autonomy in human resource management or procurement and logistics management after 1998, although the PNA had a reasonable level of financial autonomy even prior to reform.

Financial incentives for efficiency and revenue growth—through surplus retention and exposure to competition—were significantly strengthened in both Cameroon and Burkina. The lack of transparency about the sources of finance of the PNA in Senegal makes it difficult to assess whether it perceives a firm budget constraint. The CMSs now rely predominantly on sales of medicines at a margin to public sector clients for their income. In Cameroon and Burkina, since reform, donors have increasingly used the CMSs to distribute donated products at subsidized prices, reflecting increased confidence in the governance and efficiency of the CMSs. Cameroon has gone furthest in exposing CENAME to competition in supplying public sector clients, while Burkina and Senegal’s CMSs only face competition in some market segments. Social obligations are explicitly mandated, enforced and “incentivized” in Burkina and Cameroon. CENAME and CAMEG now focus only on public sector obligations, so they no longer face conflicting commercial and social objectives. On the other hand, the PNA lacks a clear statute or regulations setting out its social obligations.
PART III – DID REFORM IMPROVE GOVERNANCE AND MANAGEMENT

This section assesses the extent to which reform may have improved governance and management of the CMSs in Burkina Faso, Senegal and Cameroon. Good governance and management is a key requirement if the CMS is to function well and achieve its efficiency and social objectives.

GOVERNANCE CHANGES

Governance here refers to the combination of processes and structures implemented by an independent professional and accountable board in order to inform, direct, manage and monitor the activities of the organization toward the achievement of its objectives. Figure 3-1 outlines the key elements of good governance required for an autonomous CMS.

Overview of Findings

The governance structures and processes of CENAME in Cameroon and CAMEG in Burkina demonstrate the characteristics of good governance to a substantial extent. But this is less true of PNA in Senegal (figure 3-1). In Burkina and Cameroon, the supervisory structure has improved considerably, and today is more independent. Efficiency and social objectives are clearly defined in statutes (something not evident in Senegal) and the CMS is held accountable by the government.

Figure 3-1: Elements of Good Governance for an Autonomous CMS

Note: Adapted from Preker and Harding (2003).

Supervisory Structure

Reform is correlated strongly with increased transparency and merit-based competition in the selection of the CMS board and the director in Burkina and Cameroon. Prior to reform, the board and the director were appointed directly by the government, and the
director was usually a government employee. Following reform, the composition of the board in Cameroon and Burkina is based on the defined professional and personal qualifications of the appointees. Leading members of society are now actively recruited from both the public and private sectors. The director is recruited by the independent board through a transparent and competitive international recruitment process. In Senegal, by contrast, the board still consists of government nominees, and the director continues to be appointed directly by the president of the country rather than by the board. The increased autonomy and flexibility given to the boards in hiring the director in Burkina and Cameroon has enabled them to compete in the relevant labor market to attract and retain well-qualified managers.

The CMS statutes in Burkina and Cameroon also prevent direct government interference in CMS board and management decisions. Nevertheless, the government is still represented on the boards and thus can monitor CMS performance. In addition, the international development community, which has been a vocal advocate for equity of access to CMS services, is also represented on the CMS boards. The PNA in Senegal does not have these features: its supervisory structure lacks independence and transparency.

Reform in Burkina and Cameroon has enabled the CMS’s boards to become more effective in holding management accountable to the organization’s efficiency objectives and “enforcing” the statutes. CENAME’s board, for example, contracted an external audit firm to audit its accounts yearly. The audit report is presented to the board and placed in the public domain. Financial accountability has been strengthened by the adoption of commercial accounting systems as part of financial autonomy, which now gives a more accurate picture of operating costs. This form of accounting helps to increase efficiency because it enables the board to hold management accountable for costs that are “hidden” in traditional public sector accounts—notably the costs of holding excessive inventory. The autonomy given to the board to reward or sanction management based on performance has clearly enabled the boards to align the incentives of management and staff with the CMS’s objectives and has contributed to the increased levels of efficiency observed within the organizations.

Another important form of accountability associated with reform in Burkina and Cameroon is that of the CMS to its customers through contracts and regulations that are monitored and enforced. Transparency in operations and financial management are important for customers. CENAME’s status requires it to make its audit reports available to customers. Burkina’s board has five members selected to represent its direct and indirect clients, which constitute a majority representation on the board. In Senegal, in sharp contrast, the PNA does not publish any of its reports, budgets, or other documents, pointing to very limited accountability mechanisms at the CMS.

On another level, the boards of the reformed CMSs in Burkina and Cameroon are held accountable for the social objectives set for them by the government, something that was not in evidence prior to reform. The new conventions and statutes for the reformed CMSs
in Cameroon and Burkina set out the basis for accountability for achieving the policy objectives of reliable, equitable access to essential medicines and for binding the organizations to compliance with broader pharmaceutical subsector regulation. The statutes define the policies with which the CMS should comply to meet its social objectives. This includes selection of essential and largely generic drugs, competitive procurement processes, attention to quality assurance, as well as the use of equitable pricing.

**CMS Objectives/Statutes**

The statutes for CENAME and CAMEG remove the conflicting commercial objectives faced by SONAPHARM and ONAPHARM (after 1989) by focusing the CMS purely on supply to the public and nonprofit sectors. The boards of CENAME and CAMEG have demonstrated commitment to the social objectives and to enforcing the statutes, which effectively limit the scope for inappropriate directors’ of key aspects of their operations. But PNA has no such convention or statute. The Senegalese government has publicly expressed its commitment to ensuring that the use of essential generic drugs and competitive tendering, and a focus on social objectives, are at the heart of PNA’s operations.

It is clear that the decisions made in support of social objectives by the boards in all three countries flow from the “fixing” of these obligations by the government and its partners in CMS reform rather than being a consequence of autonomy per se. Indeed, the experience of the unregulated autonomy of SONAPHARM and of ONAPHARM after 1989 point to the fact that the CMS’s financial and managerial autonomy alone do not lead to a focus on social obligations.

**GENERAL MANAGEMENT CHANGES**

This paper takes general management to refer to information, human resources, and financial management. In addition to the importance of management functions such as these, there are general characteristics of management—such as good documentation of all management procedures, organized administration of management processes, and comprehensive and well-organized administrative records and files—that are influenced by the quality of governance and are important elements of quality assurance in a CMS.

<table>
<thead>
<tr>
<th>Overview of Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where autonomy is greatest today (Burkina and Cameroon), management practices have improved. The statutes, internal regulations, and management practices in Burkina and Cameroon were substantially better after reform than those in Senegal. The study found a lack of available documentation of procedures and of well-organized records in Senegal. This limited the ability to find evidence of changes in Senegal—but more importantly, must limit the organization’s own capacity for quality assurance of its processes. Managers have been given more flexibility to respond to market conditions and to provide staff with incentives for efficiency. In Burkina and Cameroon, the government</td>
</tr>
</tbody>
</table>
has also played a key role by granting certain fiscal advantages to help the CMS carry out its mandate. These include exemption from import duties and a range of taxes, including income tax, value-added tax, rent, and land taxes.

Table 3-1 rates the performance on general management of the CMSs in the three countries before and after reform.

**Table 3-1: Improvement in General Management since Reform**

<table>
<thead>
<tr>
<th>Management Issue</th>
<th>Burkina</th>
<th>Cameroon</th>
<th>Senegal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-reform</td>
<td>Post-reform</td>
<td>Pre-reform</td>
</tr>
<tr>
<td>Information management</td>
<td>-1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Human resource management</td>
<td>-1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Financial management</td>
<td>0</td>
<td>2</td>
<td>-2</td>
</tr>
<tr>
<td><strong>AVERAGE SCORE</strong></td>
<td>-0.7</td>
<td>2</td>
<td>-0.7</td>
</tr>
</tbody>
</table>

**Note:** Key to performance ratings: -2=very poor; -1=poor; 0=adequate; 1=good/moderate improvement; 2=very good/substantial improvement; NIA=no information available.

**Information Management**

Effective information management requires reliable, up-to-date, and linked information on all key areas of operations. This includes the selection of products and suppliers, quantification, purchasing, order management, inventory management, and product dispatch. It also requires two-way reporting structures linking the lower levels of staff and management to upper management and the board. Information management is often assisted by effective computer and communication systems (Management Sciences for Health 1997).

In Cameroon and Burkina, information flows within the CMS have paralleled procurement and logistics management improvement, but this cannot be said about Senegal. While little concrete information is available on information management in the pre-reform structures, the management and flow of information at CAMEG in Burkina, as well as CENAM in Cameroon, seem to be adequate today. In Burkina, CAMEG’s board receives trimester activity reports with monthly measures of performance, such as purchase price ratios, technical price ratios, product expiration ratios, and stock-out ratios. Each product has a file monitoring monthly sales, delivery delays, and current stock levels. Estimates are made monthly at regional depots, taking into account monthly sales and storage capacity. At headquarters, a control agent is responsible for keeping a historical record of sales at the different regional depots. As part of its reform process, Cameroon’s CENAM set up a technical coordination committee made up of the director, division heads, and the pharmacist in charge of managing antiretroviral (ARV) drugs.13 The committee meets on a weekly basis to review activities and discuss key

13 Antiretroviral drugs are medications for the treatment of infection by retroviruses, primarily HIV.
issues. Prior to reform, ONAPHARM’s director met division heads monthly, and the 10 provincial branch heads only once a year. Reporting of monitoring information to managers and the board is generally now good, including regular inventory control reports, regular financial reports, and daily cold-chain quality reports. In Senegal, there are limited information flows between the various divisions within the PNA, even on important issues such as the distribution of drugs to the various regional warehouses. PNA evaluations have repeatedly shown that upward information flows and restocking are only sporadic.

With reform in Burkina and Cameroon, both CMSs have developed sophisticated computerized information systems to assist information management, something that cannot be said for Senegal. In Cameroon’s pre-reformed ONAPHARM, computerized management information systems with purpose-designed management information software existed. But after reform, this system was augmented substantially. A single “state of the art” system is used to manage stock/inventory, sales, and distribution and accounting functions. Similarly, in Burkina, CAMEG uses a modern computerized system to manage its inventory as well as its sales data. On a regular basis, CAMEG compares sales figures with warehouse reports as a quality assurance measure on stock status. The management information system, including stock management, is also computerized at regional levels. In Senegal, however, the installation of a computer system at the PNA was not under active consideration at the time of this study.

**Human Resource Management**

Compatibility between the CMSs’ objectives and functions and their human resources management policies and practices is arguably the single most important dimension of management required for good performance. Thus, having organizational charts and qualifications requirements that match functions; remuneration policies that are compatible with the level of qualifications, experience and performance expected of staff; and transparency in recruitment, required qualifications and remuneration are all vital, and can be influenced by appropriate organizational characteristics and good governance.

Indeed, recruitment policy and practices generally improved and become more transparent with reform in Burkina and Cameroon, but less so in Senegal. In Cameroon for example, prior to reform, ONAPHARM’s director was appointed by presidential decree, and the provincial pharmacists were recruited directly from the MoH. Although some employees were recruited from the private sector, job vacancies were not widely advertised. Selection processes allowed the director to recruit non-managerial staff based on personal judgment or recommendations. Since reform in 2005, CENAME’s director’s post and management positions are advertised nationally, while the recruitment of non-managerial staff is the director’s responsibility. At the same time, although most of these staff appears qualified, there are no clear formal procedures for these appointments. In Burkina, prior to reform, SONAPHARM’s Director-General was nominated by a government technical committee. Other managerial positions were approved by the Board of Directors upon the Director-General’s recommendation.
Recruitment practices for other staff were not well documented while little is known about SONAPHARM’s policies on staff incentives or training. With reform, CAMEG has its own personnel statute with chapters outlining requirements for competitive recruitment, personnel management policies, work conditions, payment and benefits, disciplinary measures (including termination of employment) and union rights. In Senegal, Recruitment of management and technical staff is generally competitive and relatively transparent, although this is less true for the hiring of unskilled staff. The appointment of the PNA director is, however, a notable exception—he or she is chosen directly by the president. This exception has major implications for the way the PNA is managed.

The hired workforce in all three CMSs today is primarily from the private sector. In Cameroon, although some employees were recruited from the private sector under ONAPHARM, of 46 staff members currently employed, 93 percent (43 members) are private sector employees and only three are MoH secondees. However, personnel numbers appear inadequate, both in the store and the procurement divisions. In Burkina, CAMEG has a mix of seconded civil servants, fixed-term employees under private labor law, and donor-financed staff. In Senegal, the PNA employed 48 people in 1995, and all staff members were MoH employees with the exception of a donor-financed technical advisor responsible for training and support for international drug procurement. Currently, the PNA has 91 employees, of whom 23 percent are civil servants; the remainder is contracted staff.

With reform, job descriptions in Burkina and Cameroon are well defined. But no evidence of job descriptions was found in Senegal. In Cameroon, each staff member has a job description and a copy of the rules and regulations. In Burkina, every CAMEG staff member receives a copy of a detailed personnel statute and internal regulations when signing their employment contract and is subject to a probationary period. Each employee receives a letter setting out his/her responsibilities and the coming year’s objectives and all employees are subject to annual performance evaluation. In Senegal, the PNA did not produce detailed job descriptions for each position.

In Cameroon and Burkina, an improved pay structure and performance-based incentives and benefits are evident after reform, something that cannot be said about Senegal. Prior to reform, ONAPHARM’s private sector recruits were paid according to private sector pay scales and earned about three to four times more than their colleagues who were recruited from the public service, which was a major cause for de-motivation among public sector personnel. There is little evidence of systematic staff training in ONAPHARM, and after 1989 training expenditure dropped abruptly from 0.8 percent to 0.1 percent of operational costs. Since reform, CENAME has introduced a single pay scale for all staff, which lies somewhere between public and private sector salary scales. In addition, it has introduced performance-based bonuses to motivate staff, currently based on the achievement of predefined objectives in their respective departments.
CENAME has an adequate budget provision for training and provides some assistance toward continued education courses for pharmacists in the provinces. Nevertheless, procurement and quality control staff identify a need for formal training. Overall, these policies have much improved staff morale. In Burkina, promotions, contract renewals, salary increases, and bonuses are not automatic—they depend upon performance and need. Base salary scales are set by CAMEG personnel statute, as are disciplinary sanctions. These incentives, together with enhanced training opportunities, have considerably improved staff morale at CAMEG. In Senegal, there is no evidence in the PNA of a system to review staff performance or of transparent processes for promotions and contract renewals either before or after reform. Nor is there evidence of a formal system or budget line item for staff training.

Financial Management

Effective financial management is important in ensuring adequate resources are available on a sustainable basis for the procurement of medicines and also for maintenance and operational costs and capital costs for expansion. Capacity for financial projections and cost analysis is needed to ensure the CMS sets reasonable markups. Prompt payment of suppliers is vital in order to ensure ongoing reliable supply and achieve lower prices. The collection of payments from client facilities also influences the availability of the funds for the next purchase.

In both Cameroon and Burkina, the availability of financial resources for the CMS has improved considerably with reform. In Cameroon, the budget allocated to ONAPHARM for drug purchases was FCFA 2.4 billion in 1988, before it ceased entirely in 1989. Bureaucratic bottlenecks in the release and transfer of budget funds also impeded smooth financial management. Since reform, turnover has more than doubled from CFA 3.1 billion at the start of reform to CFA 7.5 billion in 2006, and the year-end profit has increased by more than 3.5 times in the same period. In Burkina, the initial capital of FCFA 400 million allocated to SONAPHARM has increased markedly under CAMEG in the post-reform period. This is despite the fact that the subsidies it received from the donor community fell significantly from CFA 6 billion in 1997 to CFA 0.43 billion in 2001. Improved cost recovery and good general and financial management has allowed CAMEG to wean itself from any outside assistance, and it no longer receives government or donor subsidies. This improvement in profits and financial sustainability in Burkina and Cameroon is all the more impressive given that the markups charged, since reform, have been reasonable. Attempts have been made to minimize potential negative consequences for access by implementing social pricing policies (discussed under the heading of Affordability below). The applied markups generally cover the cost of replenishing stock, inflation, anticipated stock losses, program expansion and operational costs.

Financial documentation was not accessible in Senegal during this study. A 2005 document produced by the PNA to evaluate its own operations suggested that there had
been an increase of 28 percent in business for the PNA from 2000 to 2003, although no information was provided on the areas of growth and this claim cannot be verified. It is not clear how the PNA sets its sales prices. Many of the sales prices have not changed since 1999/2000, indicating that prices are rarely adjusted to keep up with changing market variables.

There is some evidence that payment collection has improved with autonomy at the CMS in each of the three study countries. In Cameroon, prior to 1989, ONAPHARM did not need to collect payments from the public health facilities. CENAME management has, in contrast, been very business-like about prompt payment collection because it influences the availability of funds for the next purchase and creates reliable purchasing conditions for CENAME. The average client pays 50 percent upon ordering and settles bills within three months. Those that do not pay on time cannot make further purchases until the bill is partially or fully cleared. Nevertheless, some facilities with a social mandate, such as the CAPPs and the church procurement units, are offered credit options if needed. Credit facilities are also promptly withdrawn from clients who do not respect payment terms. In Burkina, both SONAPHARM and CAMEG sell drugs to clients on credit. CAMEG’s clients pay off their dues for the drugs supplied in three equal installments. In Senegal, before the reform of the PNA, clients often left bills unpaid. As a result, the PNA in turn was late in paying suppliers, leading to the suppliers’ unwillingness to continue supply. Little information is available on how the PNA ensures timely payments to and from its clients since reform.

CMS debt to suppliers has decreased with reform in all three countries, arguably as a result of stronger financial management and control and the ability to hire competent financial directors. In Cameroon, prior to reform, ONAPHARM’s debt to external suppliers had grown from CFA 898,650 in 1986/7 to CFA 1.23 billion in 1988/9. With reform, however, CENAME was able to put its financial house in order and today has very little debt. The situation is similar in Burkina. In Senegal, the pre-reform years were also marked by payment delays and a significant accumulation of debt. In 1993, the government, with assistance from International Development Association (IDA)\textsuperscript{14} credits, repaid the PNA debt and re-established its solvency. It is asserted that the PNA’s revenues pay fully for its operations, but this could not be verified.

\textsuperscript{14} A member of the World Bank Group established in 1960, IDA aims to reduce poverty by providing interest-free loans and grants for programs that boost economic growth, reduce inequalities, and improve people’s living conditions.
PART IV – INDICATIONS THAT OPERATIONAL PERFORMANCE HAS IMPROVED WITH REFORM

This section examines whether the governance and management improvements in Burkina and Cameroon are linked to improved operational performance in the CMSs. The core operations of the CMS are procurement and logistics. The procurement process encompasses several stages and intermediary performance indicators: selection of drugs, quantification, pre-selection and monitoring of suppliers, and purchasing or “procurement proper” including payment of suppliers. Logistics encompasses inventory management, storage, dispatch, and delivery.

Overview of Findings
Operational performance has improved in each of the three study countries. But Burkina and Cameroon, where autonomy, governance, and management improvements were found to be greatest, are the furthest along (although the progress from a much lower base in Senegal is also significant). Table 4-1 summarizes the qualitative assessment in 2005/6. It shows that operational processes are best developed in Burkina, followed closely by Cameroon, with Senegal a distant third. As far as individual aspects of management reform are concerned, there have been significant enhancements in drug selection in all countries while the least change has been recorded in inventory management followed by procurement practices.

Table 4-1: Improvement in Operational Management since Reform

<table>
<thead>
<tr>
<th>Management aspect</th>
<th>Burkina</th>
<th>Cameroon</th>
<th>Senegal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-reform</td>
<td>Post-reform</td>
<td>Pre-reform</td>
</tr>
<tr>
<td>Drug selection</td>
<td>-1</td>
<td>2</td>
<td>-1</td>
</tr>
<tr>
<td>Quantification</td>
<td>N/A</td>
<td>2</td>
<td>-1</td>
</tr>
<tr>
<td>Selection and monitoring of suppliers</td>
<td>-2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Procurement</td>
<td>-1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Inventory management</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Storage</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Dispatch and delivery</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>AVERAGE SCORE</strong></td>
<td><strong>-0.6</strong></td>
<td><strong>1.6</strong></td>
<td><strong>0.1</strong></td>
</tr>
</tbody>
</table>

Note: Key to performance ratings: -2=very poor; -1=poor; 0=adequate; 1=good/moderate improvement; 2=very good/substantial improvement; N/A=no information available.

SELECTION OF DRUGS

Selection of essential drugs should be based on epidemiological analysis to identify population need and evidence of cost-effectiveness. The essential drug list should be specified using nonproprietary names to enable competitive procurement. Although it is a

15 Refers to ONAPHARM before 1989. Most aspects of ONAPHARM’s operational performance deteriorated after government funding was withdrawn in 1989, immediately before the reforms that established CENAME.
government responsibility to ensure that there is an essential drugs list and to update it regularly, the CMS must adhere to this list and keep up with policy changes.

In both Burkina and Cameroon, a key stipulation on the statutes creating the regulatory framework for CENAME and CAMEG was the procurement by the CMS of only essential drugs while the regulatory framework for PNA in Senegal is not as clear. Since reform, CENAME and CAMEG do, in fact, select only essential drugs and nondrug consumables. This is a clear improvement over the period prior to reform, when the CMS drug list included nonessential and brand-name products. In Senegal, some improvement is reported, but most of the products selected by the PNA are combinations of generics and branded generics, and about 1 percent of products supplied are originator brands.

**QUANTIFICATION**

Accuracy of quantification—ordering the right amount of products—is necessary to prevent stock-outs at the CMS and hence to prevent incomplete filling of customers’ orders.

CMS managers interviewed for this study perceive that quantification has improved significantly with reform—more so in Burkina and Cameroon and less so in Senegal. Forecasting accuracy in all three countries was extremely weak prior to reform when health facilities sent requests of estimated needs to the CMS based on consumption data. The CMS adjusted the quantities according to the available state budget without effective communication with facilities, and the amounts supplied were inadequate. Additionally, in Cameroon, a standard list was sent to each health unit, leading to waste because there was no adjustment for the incidence of disease and consumption patterns of the area.

Since reform, some improvement has occurred in stock control because budgeting and planning for drugs is now a decentralized responsibility—clients are responsible for paying for most of the drugs they order. This in turn has resulted in better data for CMS quantification. Although it was not possible to obtain data for Burkina and Senegal, data for a sample of 17 products from Cameroon shows the Mean Absolute Percentage Error between forecast and actual consumption improved for 11 products but deteriorated for five products between 2000 and 2004, indicating that despite progress, there is still room for improvement.

Qualitative assessment (in the country assessments) of the appropriateness of quantification methodology and use of appropriately trained personnel showed that Burkina has the strongest processes for quantification since reform, followed by Cameroon, and then Senegal.
PRE-SELECTION AND MONITORING OF SUPPLIERS

Prospective suppliers must be prequalified to ensure quality and reliability, and selected suppliers should be consistently monitored through a process that considers delivery time and financial viability (WHO 1999).

While there has been little improvement at the PNA in Senegal, the supplier selection process and the subsequent monitoring of suppliers has improved with reform in Cameroon, and particularly in Burkina. CENAME and CAMEG advertise invitations to tender internationally and have rigorous criteria and evaluation processes for pre-selecting suppliers. CAMEG continuously evaluates pre-selected suppliers and can bar them for contracting in case of major problems. CENAME, however, still lacks capacity to monitor and track supplier performance. In Senegal, although tendering for pre-selection occurs, there is little evidence that a supplier has been rejected due to lack of compliance with the criteria.

PURCHASING AND PROCUREMENT

In order to attract reliable suppliers and obtain quality-assured products at the lowest possible price, procurement procedures must be competitive, transparent, follow written procedures throughout the process, and use explicit criteria ensuring reliability for awarding contracts (WHO 1999).

Whereas no information was available for Senegal, the CMS in Burkina and Cameroon today award contracts largely through competitive tendering. In Burkina, CAMEG invites competitively preselected suppliers to tender on price and quality criteria for annual fixed-price contracts. Over 85 percent of CAMEG’s supplies are purchased by competitive procurement; the remainder is products available from one supplier only. In Cameroon, CENAME uses open tenders for 83 percent of purchases, restricted bidding for 13 percent and direct procurement for 4 percent (ARVs). Although transparency in tendering has increased in CAMEG and CENAME, neither publish details of awarded contracts.

All three countries have increased the number of preselected suppliers participating in tenders since reform. Cameroon’s CENAME had 31 suppliers by 2004, whereas it relied on one main international supplier prior to reform. Burkina’s CAMEG had 66 preselected suppliers by 2005, whereas it purchased from a restricted list of suppliers before reform. Senegal purchased from a single local supplier and a small number of French suppliers with monopoly rights prior to reform. The PNA first issued international tenders in 1993. By 2003, it had 55 international and seven local suppliers participating in tenders.

Whereas this is not the case for Senegal, there are indications that quality assurance by the CMS of suppliers and procured supplies is adequate. Both Cameroon and Burkina have stringent procedures for verification of products received and hold back a share of payment until quality is checked. Prompt payment of suppliers has become the norm.
since reform in Burkina and has improved in Cameroon, which pays 60 days after receipt of goods, although this timeframe is not always met. While the PNA also purchases largely in open tenders or restricted bidding, the procurement process is lengthier. There is a lack of financial records to verify payment performance, and there is little evidence to assess whether reception of goods is adequately organized.

One indicator of improved procurement performance is evidence that the CMS suppliers have become more reliable after reform. Data is not available in Burkina and Senegal, nor is pre-reform data available in Cameroon. But a random sample of suppliers in Cameroon now confirms that supplier reliability is generally reasonable to high, despite some problems persisting. While the percentage of purchase orders filled in correctly by one of CENAME’s biggest suppliers—Mission Pharma—was 100 percent, another large supplier—CSF—only filled 50 percent of the order correctly. The data also revealed that the lead time for these two firms to deliver supplies exceeded those set out in the contract by more than 60 days.

STORAGE

Adequate and logically arranged storage space is a necessary precondition of effective inventory management at the level of the warehouse, which has largely improved in Burkina and Cameroon, but not in Senegal. In site visits for this study, the quality of storage at the CMS in Cameroon and Burkina was found to be generally adequate. Donor investment in upgrading warehouses accompanied the reform process in Burkina and Cameroon. In Senegal, many products were being stored outside the central warehouse where they were exposed to sun and water damage, and the assessors were not given direct access to the warehouse.

The CMS central warehouses in Burkina and Cameroon now have adequate infrastructure to store and protect products from water, humidity and direct sunlight, although Cameroon’s infrastructure is dispersed across several buildings. There are defined zones for receiving, handling, and storing products; cold chambers with effective temperature control and backup power for vaccines; and secure storage for controlled substances. Burkina now has three regional warehouses and donors supported the construction of 56 distribution depots. Cameroon’s pre-reform network of 10 provincial stores has been expanded to 12 autonomous CAPPs units, and donors supported construction of a regional branch store in Nagoundere. Senegal’s PNA did not benefit from this type of support, and visibly poor storage infrastructure may explain the reluctance of the PNA in Senegal to allow observation of the store.

INVENTORY MANAGEMENT

Inventory management includes up-to-date record keeping of drugs, regular physical control of expiration dates, destruction of expired drugs, and racking up of products—both at the warehouse and in dispatch.
Inventory record management practice in the CMSs in both Burkina and Cameroon seems to be adequate, whilst post reform information on Senegal is not available. In Cameroon, stock management was already largely computerized prior to reform and remains so. Since reform, CAMEG in Burkina also put in place a computer system to manage inventory numbers linked to order management and accounting. Storage of drugs in both countries is well organized and products are adequately racked up and labeled. In Senegal, studies in the 1980’s noted poor inventory management at the PNA. High staff turnover was said to have negated the impact of periodic investment in training and technical assistance in inventory management in Senegal (including by the WB). CMS management in Senegal prevented present day assessors to access the CMS warehouse to assess practice and inventory conditions.

The inventory accuracy rate—said to be very poor prior to reform in all three countries—seems to have improved in Burkina, remained somewhat problematic in Cameroon, while no data was made available in Senegal. The accuracy of inventory records is important for providing the data that the CMS needs for accurate quantification and to avoid stock-outs. In both Cameroon and Burkina, stock cards are used, which seems to be an improvement with reform. But for a random sample of products in Cameroon, the proportion of items where stock record quantities matched a physical count was found to be only 28 percent. There were a few problems in this regard in Burkina, although less so.

**DISPATCH**

Dispatch arrangements have improved greatly with reform, particularly in Burkina and Cameroon. Speedy and efficient dispatch of products is necessary if orders are to be delivered rapidly and reliably. Dispatch is an important function of the drug supply system because in many countries the transportation arrangements to and from facilities/customers are limited. Before reform in Burkina, health facilities were notified when CMS drugs were available and then had to pick up their own supplies from 11 regional departmental health directorates. Now products are distributed by CAMEG to clients based on their orders, via the network of distribution depots. CENAME asks clients to order drugs every three months and delivers every three months, mostly in trucks with cold chain facilities. It also contracts out some deliveries and its timeliness is generally acceptable. CAPPs are responsible for delivering to health facilities. Distribution costs are approximately 12 percent of operating costs. In Senegal, many facilities continue to pick up their products from the eight regional PRAs.
PART V – EVIDENCE THAT SERVICE QUALITY, PRODUCT QUALITY AND ACCESS HAVE IMPROVED WITH REFORM

This section assesses whether the improvements in operational performance can be linked to measurable improvements in key performance outcomes: service quality, product quality, and access to medicines.

SERVICE QUALITY

In all three countries, CMS reform was expected to lead to improvements in the availability of good-quality essential and affordable drugs at the facility level. Such success depends in part on the quality of services provided by the CMS to its clients (i.e. health facilities or intermediary suppliers). The measures of service quality examined for this paper were the order fill rate (the extent to which the CMS clients receive the right amounts of ordered products) and turnaround time (the extent to which CMS clients receive supplies in a timely manner).

Overview of Findings

Despite data constraints, there are indications that reform has produced significant improvements in service quality at the CMSs in Burkina Faso and Cameroon, but improvements in Senegal have been marginal at best. Organizational reform was a major driver of improvements in service quality in Burkina and Cameroon. The ability of the CMS in Burkina and Cameroon to deliver the right amount of ordered quantities to customers in a timely manner is linked to improvements in key areas of operational performance, such as quantification, selection and monitoring of suppliers, procurement, inventory management, and dispatch arrangements. All of these improvements are linked to better governance and management at the CMS, which in turn has been shown to depend, to a large extent, on increased managerial flexibility, exposure to market competition, and stronger accountability. Financial and technical assistance also played a role in improving these areas of performance.

Order Fill Rate

There are some indications that, following reform, customer orders were filled systematically and accurately in both Cameroon and Burkina, though improvements were marginal at best in Senegal. In Cameroon, customers interviewed for this study agreed that the creation of CENAME has led to more accurate filling of orders, although there was room for improvement. In the current study, data on the orders for eight direct customers of the CMS over a six-month period found CENAME completely and correctly filled orders 69.5 percent of the time. In contrast, studies of SONAPHARM (particularly prior to 1989) found that few orders were correctly filled.

Whereas facilities in Burkina prior to reform did not order their products and were simply allocated a set amount of them, today the orders made by facilities are said to be adequately filled by the CMS. Customers who were interviewed in the study generally...
expressed satisfaction on this front. At the same time the study found chaotic organization and record-keeping at the facility level, which prevented this assessment from being substantiated with actual data on order fill rates.

The least satisfactory progress seems to have been made in Senegal, where a 2005 study of a sample of 40 orders found that PNA completely and correctly filled orders only 65 percent of the time. At the same time, this is an improvement since 1995 when a sample study of 11 orders found none completely filled and only 49 percent of the products supplied correctly (Ickx and others 1995). The PNA customers interviewed for this study concurred that there has been improvement over the last few years, but reported that the low order fill rate was a major reason for the continuing stock-outs at their level. A 2003 study found an average gap of 7 percent between the availability of drugs at PRA level and that at health facility level, indicating clear room for improvement.

Improved quantification, supplier reliability, and inventory record-keeping at the CMS in Burkina and Cameroon, that were described earlier, may explain this outcome. Suppliers who are late delivering products or who provide them inadequately can cause stock-outs at the CMS and can negatively impact the CMS’s ability to fill customer level orders.

**Turnaround Time**

With reform, the order turnaround time seems to have improved most significantly in Cameroon, followed by Burkina, and then Senegal. In Cameroon, customers interviewed reported that, prior to 1989, orders placed with the CMS took many months before they actually arrived, which led to frequent stock-outs in health facilities. This situation improved somewhat after 1989 for the very few customers it supplied when ONAPHARM shifted to cost recovery. But real improvements are reported to have occurred only after CENAME was established in the 1990s. Pre-reform data in Cameroon is not available, but current data from a sample of direct customers finds generally good turnaround times of between 1 and 28 days, with shorter times achieved for facilities that were near the CMS.

Turnaround times have also improved in Burkina. CAMEG customers in Burkina generally expressed satisfaction with the current performance of CAMEG, claiming that it takes, at most, a month for the orders to be turned around. Prior to reform, facilities did not order products, but picked up what was available from the regional stores when they ran out. In Senegal, direct customers of the CMS noted no real improvements in turnaround performance of the CMS. Many customers attributed their continued stock-outs to the inability of the CMS to deliver orders in a reliable and timely manner. Many customers reported that the fastest way to receive their products was to pick up their orders directly from the CMS.

The improvements in order turnaround time in Cameroon and Burkina may be explained in part by the observed improvements in operational performance that increase the order
fill rate. Improvements in turnaround time reflect the efficiency and speed of processing of facility-level orders (management of orders) at the CMS and dispatch, which again has improved the most in Burkina and Cameroon, but least in Senegal (which has no centralized tracking and control system for orders and sales). Order management and dispatch processes improved most with reform in Burkina, followed by Cameroon, and then Senegal.

**PRODUCT QUALITY**

Improving the quality of products reaching the customers—the health facilities and their users—was an important motivation for CMS reform. This section examines the extent to which reform led to improvements in quality assurance at the level of the supplier and quality assurance for the drugs received and dispatched to health facilities (i.e. the CMS customers).

<table>
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<th>Overview of Findings</th>
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<tr>
<td>Organizational reform appeared to be the major driver of improvements in product quality at the level of the supplier and the warehouse in Burkina and Cameroon. Product quality at the level of the supplier is closely linked to robust supplier selection strategies and effective procurement contracts. Product quality at the level of the warehouse is shown to be largely determined by good inventory management, including physical control and destruction of expired drugs and adequate storage (discussed previously). These improvements, again, are closely linked to improvements in governance and general management and therefore to both CMS autonomy as well as the setting up of appropriate accountability structures.</td>
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But quality assurance is also dependant on factors that have little to do with CMS operations, such as the existence of an effective regulatory regime, appropriate capacity at the regulatory agencies, and the drug quality control laboratory. These facilities and regulations—which are external to the CMS—are also important for ensuring product quality at the supplier and warehouse levels. Both the successfully reformed CMSs in Burkina and Cameroon increased their demand for these national quality control services as they improved their operational performance in response to effective reform. By contrast, there was no evidence of increased demand for quality control testing by the PNA in Senegal.

**Quality of Products received from Supplier**

Quality of drugs ordered from suppliers seems to have improved significantly with CMS reform, particularly in Burkina and Cameroon, with less progress evident in Senegal. Several reviews found that the quality of products supplied to the CMS prior to reform was highly inadequate. In contrast, today, the CMSs in Burkina and Cameroon apply rigorous quality assurance criteria to the pre-selection of suppliers, such as evidence of registration in a country with high regulatory standards and/or WHO prequalification.
Well-designed contracts and procurement documents include rigorous performance specifications related to shipment method and product quality and ensure that delivered products are accompanied by a batch certificate to ensure traceability of distributed drugs. The CMSs conduct careful checks of the conformity of the products with the specifications set out in the contracts. In addition, pre-selection and contract documents give the CMS the ability to penalize or terminate suppliers that deliver substandard products. There is evidence that Cameroon and Burkina exercise these provisions, but Senegal does not. Senegal’s PNA is said to carry out some controls: its inspectors are said to visit potential suppliers at the stage of international calls for offers and take samples as part of their mission for testing by the national drug control laboratory. The country assessors however were provided no proof that this is the case.

**Quality of Ingredients of Drugs (Pharmacological Aspects of the Product)**

Ensuring drug quality requires a system that verifies the pharmacological aspects of the product and ensures microbiological control. Pharmacological issues include, for example, identification of the active pharmaceutical ingredient and dosage while microbiological control addresses, for example, sterility control. Sending samples taken from each batch of drugs received at the CMS to a quality control laboratory is essential for this process.

In all three countries, quality control laboratories were created following reform of the CMSs, although today these seem to function best in Cameroon and Burkina. In Cameroon, a quality control laboratory became operational within the CMS only in 1990 and was limited to the testing of solid dosage forms. There was no independent national quality control laboratory and little evidence that products were being tested regularly. The National Quality Control Laboratory was created in 1996 and carries out quality control for tablets and syrups within 1 to 3 weeks of receiving samples, while injections are sent for testing to a quality control laboratory in Niger. CENAME carries out quality control for every product, but not necessarily for each batch—about 25 percent of the drugs are sampled. CENAME budgets for quality control and ensures it is done. A drug testing laboratory became functional only during the mid-1990s in Burkina, and in 1998 in Senegal. Prior to reform, the absence of a national facility in Burkina meant that there was little control over the quality of drugs received by the CMS. Today, there is clear evidence that Burkina Faso’s National Laboratory carries out quality assurance for all products. In Senegal, the National Quality Assurance Laboratory was only created in 1998. Prior to this, there was no systematic testing of samples of products received (Ickx 1995). But despite the availability of the new laboratory since CMS reform was initiated in 1998, there is evidence that it performs inadequately, having insufficient inspectors and inadequate technical and logistical resources (WHO 2003).

**Quality of Drugs Stored at Warehouse**

The quality of the drugs stored at the warehouse has improved with reform in Burkina and Cameroon, but seems to be problematic in Senegal. Burkina’s and Cameroon’s
CMSs both adopted First-Expiring First-Out inventory management prior to reform. Both carried out annual or biannual physical inventory checks and stock maintenance before and after reform. Audits conducted prior to reform found poor storage practices (for example, storage beyond the expiration dates and damaged packaging) in CMS warehouses in all three countries.\(^{19}\) Whereas the quality and expiration of drugs audited during the present day assessment in Burkina and Cameroon are deemed satisfactory, the inability of assessors to access the Senegal CMS warehouse and the dire condition of the inventory stored openly around the warehouse indicate substantial present day problems.

**ACCESS**

Another major motivation for reforming the CMS in the three countries was to improve access to essential, affordable drugs in health facilities. This section looks at the extent to which four access indicators—geographical accessibility, affordability, physical availability, and acceptability—have improved with reform. Access here is examined at the level of the direct customer (usually an intermediary supplier or a health facility itself) only, not at the level of the end customer (the individual).

**Overview of Findings**

Organizational reform contributed to making products more *geographically accessible* particularly in Cameroon and Burkina; however, access is also determined by functionality of downstream supply channels that are external to the CMS. The geographical reach of the CMS in Burkina and Cameroon increased to some extent due to improvements in service quality, product quality, and drug affordability, all of which are linked to improved operational performance of the CMS, which is an outcome of good governance and management. At the same time, there was more investment (some of it external) in expanding the network of provincial and local downstream supply facilities in Burkina and Cameroon than in Senegal, which may also explain the differences in geographic access after reform.

CMS organizational reform—but only in conjunction with strong government policies and regulations—may have improved the *affordability* of drugs for CMS customers in all three countries. Organizational reform had a small role in improving affordability in all countries since the CMS’s ability to procure drugs at lower prices is, of course, dependent on factors such as competitive bidding, transparent procurement processes, and regular payment of suppliers.

Organizational reform may have contributed to improving the *availability* of drugs for the direct customers of the CMS in Burkina and Cameroon. Improved operational performance and improved service quality at the CMS in those two countries are found to be important for preventing stock-outs and ensuring availability of drugs to the customer. Organizational reform, however, did not necessarily lead to the selection of *essential* drugs. A well-designed, updated, and enforced national essential drugs list and capacity to
order drugs at the facility/customer level itself is critical in ensuring drugs are available at the facility level, and in particularly essential drugs.

Organizational reform has been shown to be a major determinant of customer satisfaction with the CMS and the acceptability of its products by its customers in Cameroon and Burkina, and less so in Senegal. Improvements in service quality and product quality and increased transparency are clearly important in this regard, and these were influenced significantly by reform. Specific design features of the autonomous CMS, such as greater stakeholder representation at the board level, are important in ensuring acceptability.

Geographical Accessibility

An increase in the number of urban and rural direct and indirect customers indicates improved geographical accessibility in all three countries (table 5-1). Since reform, there has been marked improvement in the number of direct customers, and the distribution network now reaches rural areas more extensively than before, making products geographically accessible throughout both Burkina and Cameroon. In all three countries, expansion of provincial stores and local distribution depots began before reform but increased after. Burkina and Cameroon both introduced semi-autonomy into the essential generic drug depots in Burkina and the CAPP provincial stores in Cameroon. In Senegal, PNA’s network of regional warehouses—the PRAs—has gradually expanded, although PNA is unaware of how many indirect customers it has.

<table>
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<tr>
<th>Country/CMS</th>
<th>Direct Customers</th>
<th>Indirect Customers</th>
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<tr>
<td>ONAPHARM, CENAME</td>
<td>- Pro-pharmacies (rural, semi-autonomous) until 1989.</td>
<td>- All other public health facilities.</td>
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<tr>
<td>Burkina Faso</td>
<td>- 25 provincial offices, army, public offices, provinces of Sanguie, Oubritenga, Sissili, Ganzourgou, and Kouritenga were not supplied.</td>
<td>- 11 regional units in the MoH’s Departmental Directorates of Health.</td>
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<tr>
<td>SONAPHARM, CAMEG</td>
<td>- 56 district distributor depots.</td>
<td>- 833 health center depots nationwide, of the Health &amp; Social Promotion Centers, medical centers with surgical units.</td>
</tr>
<tr>
<td></td>
<td>- 3 university and 9 regional hospitals.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 8 services attached to MoH.</td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senegal</td>
<td>- 5-6 PRAs</td>
<td>- Data lacking.</td>
</tr>
<tr>
<td>PNA</td>
<td>- 8 PRAs</td>
<td>- Unknown numbers of medical districts, pharmacies, and health posts and centers.</td>
</tr>
<tr>
<td></td>
<td>- 1 university hospital; 13 regional hospitals</td>
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Improvements in service delivery, as well as investments in decentralized dispatch facilities, may explain the increased customer numbers evidence in Burkina and Burkin
Cameroon. Improved dispatch and decentralization of the supply structure to regional or local stores contributes to the supply of more geographically distant customers. In Senegal, the fact that the CMS continues to have few known customers may be the result of continued problems in these areas. This decentralization began before CMS organizational reform, but was extended and activated following reform. CAMEG in Burkina and CENAME in Cameroon have also launched extensive marketing campaigns throughout the country. This did not occur prior to reform. CAMEG's sales and marketing department has specific responsibilities for “ensuring the distribution of products throughout the country,” “ensuring product promotion,” and “analyzing market trends.” By contrast, no one has been assigned responsibility for marketing in Senegal’s PNA.

**Affordability**

In Cameroon, and to a lesser extent in Burkina, CMS product prices have decreased for many facilities directly supplied by the CMS. While no price data was available for the PNA in Senegal, there is evidence that PNA-supplied public facilities charge lower prices than the private sector, even though public sector markups are higher, as a result of bulk international procurement of generic medicines (WHO 2003). In Cameroon and Burkina, the direct customers visited by the country assessments stressed that cheaper product prices were one of the most important improvements with reform. With reform, prices for selected tracer products sold by CENAME and CAMEG have fallen and are now considerably lower than private sector prices for most tracer products, although a small number of products remain cheaper in the private sector.

Out of 139 essential drugs in CAMEG’s list, prices fell between 2004 and 2005 for 79 items, increased only slightly for 22 items, and remained unchanged for 38 items. However, the reduction in prices only contributed to affordability at the level of the direct customers. End-users, particularly in Senegal and Burkina, complain that many products remain out of their reach under the cost-recovery policies that continue to operate. A 2003 survey in Senegal found that, of the 18 percent of patients who did not purchase all the drugs they were prescribed, 40 percent had “not enough money” and 20 percent found “prices too high.” (WHO 2003.) In the context of this study, however, it is important to note that user-charging policies were not the result of the 1990s CMS reforms, but were set independently by the governments in all three countries under the Bamako Initiative.

One reason for the continued reduction in product prices since reform is the increased competition in procurement, associated with a larger number of suppliers willing to participate in CMS tenders. This increase enables the CMS to procure medicines at lower prices. Several factors have contributed to this: procurement of generics rather than brand-name drugs, use of competitive tendering for pre-selection, and increased reliability of payment. In addition, a perception of fairness and transparency is essential to attract the best suppliers and achieve the best prices (WHO 1999). Another factor that has improved affordability of CMS supply is the fact that external donors now provide or finance increased quantities of priority medicines, particularly in Cameroon (and for some categories of medicines in Burkina, such as ARVs), reflecting the trust that donors place
in CMS transparency and service delivery. Prior to reform, very few donors channeled products through the CMS.

The extent to which the CMS has been exposed to competition (which may lower the markups applied by the CMS) varies across the three study countries—from most competitive in Cameroon to least in Senegal. CENAME has been exposed to competition with private suppliers because public sector facilities are permitted to buy from sources other than the CMS. There is evidence that this has reduced markups in Cameroon for branded drugs, but to a much lesser extent in Burkina. CAMEG faces competition in the public hospital market, but still has a protected market to supply other public health facilities. But in Senegal, the CMS has a monopoly in the public sector, and thus has little incentive to reduce its prices and to keep markups low in either the generics or the branded drugs market.

In all three countries, even after reform, the CMSs have some tax and import advantages over the private sector. They are not required to pay taxes on imported products and are eligible for quicker and cheaper processing of import licenses. This explains to some extent the poorly developed private sector market for generics. While this might indeed benefit public sector customers in the short run, over the longer term, such policies tend to insulate the CMS from competition from the private sector, leading to inefficiencies or the temptation for public facilities to charge higher markups. In Senegal, public facilities were found to charge margins an average of 65 percent for 15 tracer drugs, although regulations stipulate a 50 percent margin and particularly large margins for medicines not supplied through private pharmacies (WHO 2003).

The CMS statutes in Burkina and government decrees in Cameroon and Senegal regulate the markups of CMS products to achieve social objectives. Such government regulation explains a large part of the price reductions for CMS drugs in Burkina and in Cameroon after 2001 and 2005. In Burkina, markups are fixed at a maximum of 25 percent. The CMS claims to adhere to a 15.7 percent margin for drugs and 19.4 percent for consumables, but some studies find evidence of markups above the regulated limit in some outlets (Ridde 2005). CENAME adheres to fixed price markups which range from 10 to 30 percent, depending on the classification of the drug. “Social” products—for conditions such as malaria, HIV/AIDS, tuberculosis, and cancer—and vaccines have a 10 percent markup, and costs are covered by government or donor subvention. In Senegal, public facilities are permitted to charge a (high) 50 percent markup on the PNA’s acquisition cost, though as noted above, they charge more than this.

**Availability**

Availability of essential drugs from the CMS at the level of the direct customer has improved with reform in Cameroon and Burkina, while there is a lack of quantitative evidence of change in Senegal. On the whole, stock-outs for essential drugs have declined considerably with reform in Cameroon and Burkina. Several studies in Cameroon, both pre- and post-1989, found few essential drugs available at facility level, and stock-outs
were a key reason for people turning to the private sector (Cornell and others 1991; Essomba and others 1993). By 2001, stock-out frequency had decreased significantly, although problems remain at a number of customers (European Union study 2001). This study found zero to 5 percent stock-out rates in six of eight CENAME clients visited, but 20 to 40 percent stock-out rates in two general hospitals, with some items out of stock for 120 days. In Burkina, under SONAPHARM, public health facilities frequently ran out of supplies just a few days after they were received.

A recent study found that the availability of drugs at public sector facilities had improved considerably, although some customers occasionally report stock-outs of some items (Mensch 2002). Customer interviews conducted for this study confirmed this finding. While severe stock-outs were common in Senegal prior to reforms (World Bank 1982), the PNA today claims to have significantly “eradicated the stock-out problems” at the customer level, although severe stock-outs of essential drugs were found at several of the facilities visited. Studies in Senegal in 2002 and 2003 found availability of tracer drugs at the PRAs of 62 percent and 87 percent respectively, and at the health centers/posts of 58/59 percent and 80 percent respectively (WHO 2003).

Organizational reform, coupled with essential drugs lists, is key in improving the availability of drugs at the CMS customer level. But global support for vertical health programs is also important. The reduction in stock-outs until about 2003 can be explained to a large extent by improvement in the quality of service provided by the CMS, together with the fact that the CMSs now procure drugs based on the essential drugs list. Since that period, the recent steep expansion of global support for some of the major vertical health programs has played an important role in financing medicines and this growth in fully subsidized supply has improved aggregate the availability of some medicines in recent years.

Stock-outs may point to existing weaknesses in service quality but may also be due to problems at the facility level, such as budget bottlenecks, limited budgets at the facility to purchase drugs, or weak capacity in facility-level forecasting. Continuing weaknesses in some aspects of service quality—such as inaccurate inventory record keeping, inadequate monitoring of suppliers and inadequate quantification activity in Cameroon—may partially explain the persistent stock-outs at facility levels. In Cameroon, the long administrative procedures required by public hospitals to access funds from sales of drugs and services (due to lack of hospital financial autonomy) means that they frequently do not have funds available to pay CENAME. CENAME cuts off supply to customers who cannot pay for their products. This study found that in Cameroon, the inventory accuracy rate of CENAME's customers ranged from 7 to 100 percent. In both Burkina and Senegal, customer facilities were so poorly organized that no such data could be collected for this
study. To a certain extent, this may also reflect inadequacies in the training and support offered by the CMSs to their customers in drug logistics management.

**Acceptability**

Customers of the CMS in Burkina and Cameroon were found to be generally satisfied with the newly reformed CMSs, whereas this cannot be said about Senegal. In Burkina, 100 percent of facilities rated their satisfaction with CAMEG to be 6 or higher on a scale of 1 to 10. Approximately 70 percent of the facilities surveyed rated CENAME’s performance and its products as 8 out of 10 or higher. In Senegal, on the other hand, only 50 percent of the facilities visited ranked the PNA above 5 on a scale of 1 to 10.23

In addition to improvement in service quality, interviews with CMS customers found that the CMSs in Burkina and Cameroon are now perceived as more accountable. This is due to increased transparency and donor and community representation on the board of the CMS. But in Senegal, there is little evidence of transparency or community representation on the board either before or after reform. However, the interviews also revealed other areas where facilities are not satisfied with CMS services. In Cameroon, these include continued stock-outs at the CMS, and a lack of harmonized training on forecasting and quantification at the facility level. Although there was a general recognition in Burkina that products had become more affordable since reform, many products were still felt to be too expensive. In Senegal, respondents identified more pervasive problems with the reliability of the CMS and its ability to deliver affordable good-quality products.

**PART VI – TOWARDS A FRAMEWORK FOR MARKETIZING REFORM**

In sum, well-designed marketizing, through improvements in CMS governance and management, which affects the operational performance of the CMS, can lead to improvements in efficiency-related outcomes, particularly in service quality and availability of good-quality essential drugs to paying customers (facilities or larger depots). The extent of these efficiency improvements (brought about by improvements in the operational performance of the CMS) depends in part on critical features of design including increased flexibility of decision making, accountability and transparency, critical policy and regulatory prerequisites, and complementary inputs, including technical and financial assistance for national drug quality control capacity and the downstream supply chain network.

The achievement of equity-related outcomes such as affordability (supply of cheaper, more affordable products) and geographic accessibility (deeper and wider reach of supplied products), on the other hand, requires the government to fix social obligations and constrain specific decision rights in the CMS’s regulatory framework. Clear specification of the social obligations of the CMS and removal of conflicting commercial
objectives were key reasons why CENAME and CAMEG served the public sector better than ONAPHARM and SONAPHARM.

The oversight provided by the independent boards is likely to have helped to ensure that the CMSs adhered to the social obligations built into their statutes. The specific design of the board structure in Burkina and Cameroon—a balanced mix of government and donor and community representatives committed to the social objectives—is important, together with the fact that governments in these countries allowed the boards to operate independently according to their statutes.

Nevertheless, achievement of equity-related outcomes also depends on broader government functions at the national level. They include well-designed national (essential) pharmaceutical policies and broader health system policies. Moreover, equity goals may require Governments or donors to pay for the costs of social obligations—either directly through subventions or contracts with the CMS or indirectly, by funding CMS customers. The role of public funding (including tax and duty exemptions) and donor assistance is critical to achievement of equity-related outcomes while permitting the CMS to achieve increased efficiency and financial sustainability.

Figure 6-1 captures the various drivers of efficiency and equity in CMS organizational reform in a framework and illustrates the relationships among them. Such a framework could be used both for the design as well as for the analysis of marketizing reforms in CMSs and other public sector commodity supply entities in developing countries. The framework is sufficiently general that, with some modifications, it could also be applied usefully to the design and analysis of marketizing reform in other public sector institutions delivering social services.
This study summarized the findings of three assessments of CMS reform and performance in Francophone Africa, and the findings should be treated with caution. It referred to the difficulties in accessing data—particularly quantitative data—for assessing the reforms in the three study countries. It is hoped that studies undertaken in other countries using a similar methodology will enable more precise conclusions to be reached and will strengthen our evidence base on the relationships among specific marketizing reform variables and the ultimate impact of the reform on the intended efficiency and equity related outcomes.

This study has indicated that the achievement of the desired efficiency and equity outcomes is premised not on increased autonomy alone, but on a whole variety of drivers both internal and external to a CMS. A strong regulatory framework—the conventions, laws, regulations, and administrative acts that increase the flexibility of some decision making rights, whilst constraining others, with an emphasis on social obligations, accountability, and transparency—are all key to the success of CMSs (see Annex 2 for more details on key lessons for designing an adequate regulatory framework). In addition, external factors, including technical assistance, government subsidies, and relevant external policies, institutions, and regulations, are also key drivers of the success of a CMS. Future assessments or reform initiatives can learn from this and take these lessons into account.
REFERENCES


**ANNEX 1: ANALYTICAL DESCRIPTION OF CMS ORGANIZATION BEFORE AND AFTER REFORM**

The table below summarizes the changes in the CMS organization and incentive environment with each wave of reform policy in Burkina, Cameroon and Senegal, using the conceptual framework introduced in Section 1 of the paper.

<table>
<thead>
<tr>
<th>Organizational aspect</th>
<th>Traditional CMS - budgetary unit</th>
<th>CMS with limited autonomy</th>
<th>CMS with greater de facto autonomy</th>
<th>CMS with greater autonomy—planned reform</th>
<th>Partially privatized CMS state enterprise</th>
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</thead>
<tbody>
<tr>
<td><strong>Prereform</strong></td>
<td>- Burkina ONAP pre-1985.</td>
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<td>- Cameroon PCA pre-1985.</td>
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<td>- Senegal pre-1978.</td>
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<tr>
<td><strong>Governance</strong></td>
<td>- Division of MoH.</td>
<td>Not a separate legal entity.</td>
<td>Not a separate legal entity.</td>
<td>- CAMEG separate legal entity, owned by government; CENAME not yet formalized.</td>
<td>Company 51 percent government ownership; 49 percent private ownership.</td>
</tr>
<tr>
<td><strong>Legal form</strong></td>
<td>- No board: vertical control and supervision by MoH, other ministries and government commissions.</td>
<td>- Chair and board appointed by president; majority are government officials; minority of nongovernment board members.</td>
<td>- Chair and board appointed by president; majority are government officials; minority of nongovernment board members.</td>
<td>- Independent board drawn from private sector, donors, other experts, government (government in minority); chair elected by majority vote of board.</td>
<td>- Shareholders appoint directors; government majority; chair elected by private board members.</td>
</tr>
<tr>
<td><strong>Board</strong></td>
<td>- Government official.</td>
<td>- Government official. ONAPHARM:</td>
<td>- Government official. ONAPHARM:</td>
<td>- Appointed by board through competitive</td>
<td>- Government official, but also accountable to board.</td>
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<td>Organizational aspect</td>
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<tr>
<td><strong>Objectives</strong></td>
<td>- Nonprofit, social objectives; supplies only public sector.</td>
<td>- Mixed commercial and social objectives, supplies public and private sector.</td>
<td>- Mixed commercial and social objectives, supplies public and private sector.</td>
<td>- Nonprofit, social objectives; supplies public sector and nonprofit private clients.</td>
<td>- Mixed commercial and social objectives, supplies public and private sector.</td>
</tr>
<tr>
<td><strong>Funding arrangements</strong></td>
<td>- Relies solely on government budget allocations for operating costs and procurement of supplies. - No revenue from customers (supplies provided free of charge to public facilities).</td>
<td>ONAPHARM: - Government capital injection and budget subventions for free supply to public sector; revenue from sales to private facilities with profit margin. PNA: - Revenue from sales to public and private sector facilities, with profit margin.</td>
<td>ONAPHARM: - Budget funding ceased after 1989; revenue came from sales to public and private sector; 7 percent of medicines sold with unregulated profit margins; 25 percent distributed free. PNA: - Budget funding ceased after 1994; revenue from sales to public and private sector with unregulated profit margins.</td>
<td>- Initial government and donor funding of operations. - CAMEG now sustained by revenue from sales to public and some private facilities, with regulated limits on profit margins. - CENAME has had increase in donor and government funding of drug supplies since reform.</td>
<td>- Capital injection from shareholders. - Budget allocation for public sector supply (free of charge). - Revenue from sales to private sector with unregulated profit margins.</td>
</tr>
<tr>
<td><strong>Decision rights of board and management</strong></td>
<td>- Staff are civil servants bound by civil service rules. - CMS management has little influence on staff mix, hiring, pay, promotion, or rewards or.</td>
<td>- Unit managers and some staff are civil servants on leave from MoH. - Limited ability to hire additional private sector personnel. - PNA lacks clear</td>
<td>- Unit managers and some staff are civil servants on leave from MoH. - Limited ability to hire additional private sector personnel. - PNA has hired private</td>
<td>- All staff and unit managers appointed by the director; recruited competitively and transparently from private sector. - Staff bound by CMS</td>
<td>- Unit managers nominated by director and board approved; nonmanagement staff recruited from private sector, not bound by civil service regulations.</td>
</tr>
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<tr>
<td>Finance</td>
<td>CMS management have little influence over budget allocation (which is low, relative to CMS objectives).</td>
<td>ONAPHARM: Some delegation from the Treasury to manage own account and prepare budget proposal, but little real autonomy; MoF staff must be involved in CMS finance commission.</td>
<td>ONAPHARM: Formal arrangements unchanged. De facto increase in autonomy as no budget funds received. PNA: Director given responsibility for accounts and for pricing, income generation; government still influences decisions. PNA’s limited financial transparency makes it difficult to determine sources and use of funds.</td>
<td>Prices/margins set by board. Substantial financial autonomy, subject to rules in CMS conventions and statutes, and board approval for budgets and financial statements.</td>
<td>Separate accounting systems for public sector businesses financed from budget and private sector business. Government-maintained accounts and controlled transfers of budget funds. Director had substantial autonomy in setting prices for private clients and use of private revenues.</td>
</tr>
<tr>
<td>Procurement &amp; logistics</td>
<td>MoH and other government bodies have to approve or jointly carry out key decisions of CMS in procurement. Public procurement law applies. Few internal controls in logistics, leading to diversion of product.</td>
<td>Government dominated bodies approve or jointly carry out key decisions of CMS in procurement. Public procurement law applies for drugs bought with budget funds.</td>
<td>Once budget funding ceased, public procurement law no longer followed.</td>
<td>Board administers the statutes setting up the CMS and sets strategic policies without government approval. Director responsible for day-to-day decisions (tenders, contracts, dispatching). Public procurement law applies.</td>
<td>Private sector practices permitted; public procurement law no longer applied.</td>
</tr>
<tr>
<td>Residual claim on surpluses</td>
<td>Unspent funds revert to CMS given government Surpluses retained by Surpluses retained by Surpluses retained by</td>
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<tr>
<td><strong>Management</strong></td>
<td>Treasury. - Not permitted to earn and retain additional revenue.</td>
<td>capital injection and retains surplus funds at year end. - CMS retains surpluses from private sales.</td>
<td>CMS.</td>
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<tr>
<td><strong>Competition</strong></td>
<td>- Competitive tendering for generics; but undue influence of industry lobby.</td>
<td>- ONAPHARM used tendering for public supplies. - PNA purchased brand names.</td>
<td>- Purchased brand names, direct contracting. - PNA introduced more competitive procurement after 1998.</td>
<td>- CMS strategy to procure only generic drugs through competitive tender; number of suppliers has increased.</td>
<td>- Little competition; purchased brand-name products, direct contracting.</td>
</tr>
<tr>
<td>Competition in purchasing</td>
<td>- No competition: monopoly importer and supplier to public facilities. - Does not supply private sector.</td>
<td>- Public sector monopoly. - Face competition in supplying private sector.</td>
<td>- PNA has public sector monopoly; faces competition in supplying private sector. - ONAPHARM faced competition in supplying public sector after 1990 and in supplying private sector from its inception.</td>
<td>- CENAME faces competition in supplying public sector; does not supply for-profit private sector. - CAMEG has monopoly for supply of health posts, but faces competition in supplying public hospitals and private sector.</td>
<td>- SONAPHARM had import and supply monopoly for public sector.</td>
</tr>
<tr>
<td>Competition in sales to health facilities</td>
<td>- Top-down political and bureaucratic direction. - Accountable for compliance with many bureaucratic rules and controls over management decisions. - Director accountable to both board and government directly (to president in case of PNA). - Contractual accountability to private</td>
<td>- Top-down political and bureaucratic control for use of budget funds. - Director accountable to both board and government directly (to president in case of PNA). - Contractual accountability to private</td>
<td>- Political and bureaucratic control reduced incrementally but can still influence decisions. - Director accountable to both board and government directly (to president in case of PNA). - Contractual</td>
<td>- Conventions and statutes set clear rules; for example, only essential, generic drugs procured; competitive tendering. - Board accountable for administering statutes. - Director clearly accountable to board</td>
<td>- Top-down political and bureaucratic control for use of budget funds. - Director accountable to both government and board. - Contractual accountability to private sector clients.</td>
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<td><strong>Accountability</strong></td>
<td>- Top-down political and bureaucratic control for use of budget funds. - Director accountable to both board and government directly (to president in case of PNA). - Contractual accountability to private</td>
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<td></td>
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<td>sector clients.</td>
<td>accountability to private sector clients.</td>
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<td>- Contractual accountability to clients.</td>
</tr>
<tr>
<td>Social obligations</td>
<td>- Implicit but unenforceable obligation to supply all public sector requirements.</td>
<td>- Implicit but unenforceable obligation to supply all public sector requirements.</td>
<td>ONAPHARM: - No funding of social obligations after 1989. PNA: - No funding of social obligations after 1994 (following introduction of cost recovery in health facilities).</td>
<td>- Social obligations described in conventions and statutes. - Health facilities responsible for budget for supplies—so CMS has no unfunded mandate.</td>
<td>- Social obligations underfunded (less profitable than private sales) and unenforced.</td>
</tr>
</tbody>
</table>
ANNEX 2: SOME LESSONS FOR THE REGULATORY FRAMEWORK FOR THE AUTONOMOUS CMS

The study identified three critical areas that need attention in the design of the regulatory underpinnings of the CMS. The regulatory framework—the conventions, laws, regulations and administrative acts—on which the organizational and operational structure of the CMS is based, must be clear, comprehensive, and coherent in order to achieve the desired efficiency and equity outcomes.

First, the regulatory framework should clearly define the extent of, and limits to, CMS autonomy: specifying the decision rights and duties of the board, director, and other important functionaries of the CMS. Well-defined provisions relating to the responsibilities of different stakeholders, including the board, the senior management and other line managers and staff are necessary components of the regulatory regime. The provisions should transfer increased decision-making powers from the government to the CMS and enable decision makers to act independently of the government. At the same time, the responsibilities of the CMS board to the government should be clearly stated so that autonomy is not interpreted as freedom from government control unaccompanied by any regulatory or fiduciary obligations.

Second, the legal framework should fix or constrain some decision-making rights in order to ensure that CMS objectives are clear, are realistic, and avoid conflict between social obligations and the pursuit of efficiency. Examples of the kind of decision variables that were fixed in Burkina and Cameroon include: the selection of essential drugs only, procurement under nonproprietary names through transparent and competitive tenders, obligations to supply specified public sector and/or NGO customers, rights of the CMS in case of nonpayment by clients, specification of maximum drug markups for essential drugs, and limits on the freedom to expand private for-profit sales. Without clarity on these issues, it is unlikely that the efficiency gains that accrue from autonomy will be translated into improved access to essential drugs in the public sector. Similarly, the legal framework should constrain decision-making rights on human resources to ensure meritocratic, competitive hiring and promotion and should build in financial safeguards to ensure sustainability and manage risk.

Third, the legal framework should establish accountability structures to ensure the accountability of the CMS management to the board and of the board to its customers and to government regulators. The organizational design must ensure that the CMS management is accountable to an independent board, which has the responsibility to ensure proper adherence to the CMS statutes. Giving the board power to hire, evaluate, reward, and fire the director is the most appropriate means of doing this. It is not uncommon for boards of autonomous public sector agencies to abuse their decision-making rights or for politicians to use board appointments as a vehicle for patronage.
The regulatory framework must also hold the board accountable to the government and may also build in accountability to other stakeholders (such as funders, direct customers, and end-users). This may be done in various ways. For example, in Cameroon and Burkina, such accountability was ensured by placing key representatives of the government as well as of international donors on the board to preserve an oversight function. The regulatory framework should determine the board composition and selection process to ensure checks and balances, limit scope for patronage, and avoid conflict of interest. Accountability to consumers should be addressed by ensuring that they are adequately represented on the CMS boards and/or that they have access to relevant information on CMS operations and performance.

Transparency in the functioning of the CMS is critically important for accountability. Accountability can also be strengthened by incorporating checks and balances in the organizational structure of the CMS (such as creation of internal audit, separation of duties within finance, procurement, and logistics functions) and by providing for independent scrutiny through external audit. While Cameroon and Burkina received significant technical input from donors and governments in the design of their CMS conventions and statutes, in Senegal the lack of attention to the statutes left the CMS without a proper framework on which to base its organization and operations. Ambiguity about decision rights and accountability and lack of transparency blunted the PNA’s incentives for performance.

Any organizational change that is instituted as a part of CMS reform must be cognizant of the institutional capacities of the CMS. It is important that adequate resources be invested in building capabilities in general management and operational functions. Human resource management is critical. The reformed CMSs in Burkina and Cameroon deliberately chose not to transfer most staff from the old structures, focusing instead on attracting qualified staff through a mix of transparent and competitive hiring and attractive compensation packages and other incentives. In addition, with the support of international donors, substantial training programs were organized for the senior management team as well as for middle-level managers—thereby ensuring that the new staff had the required skills to deal with the new roles and obligations of the “marketized” CMSs. In Senegal, in sharp contrast, there is no evidence that this occurred with reform, and the consequences of this neglect for organizational performance are very evident.

It is also necessary to invest in technical and financial systems, physical infrastructure, and working capital at the CMS—with the CMS in Burkina having benefited from most substantial investment in this area. This was financed mainly by international donors and, not surprisingly, achieved the best results in terms of its efficiency and equity-related objectives. For example, the allocation of an adequate amount of startup capital to cover the initial procurement of drugs was vital in helping the CMS in Burkina transition from a bankrupt CMS with a limited mandate to one that was profitable, despite an expansion of its obligations.
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Junio de 2007