

Private Sector Pharmaceutical Supply and Distribution Channels in Africa

A Focus on Ghana, Malawi and Mali

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Health, Nutrition and Population (HNP) Discussion Paper

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Health, Nutrition and Population (HNP) Discussion Paper

Private Sector Pharmaceutical Supply and Distribution Channels in Africa: *A Focus on Ghana, Malawi and Mali*

Ariane McCabe^a Andreas Seiter^b Aissatou Diack^c Christopher H. Herbst^d Karima Saleh^e
Sheila Dutta^f

^a Senior Manager, GAVI Alliance, Geneva, Switzerland

^b Senior Health Specialist, World Bank, Washington DC, USA

^c Senior Health Specialist, World Bank, Washington DC, USA

^d Health Specialist, World Bank, Washington DC, USA

^e Senior Economist, World Bank, Washington DC, USA

^f Senior Health Specialist, World Bank, Washington DC, USA

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Abstract:

Sustainable access to affordable, high-quality medicines is an important component in all health care systems but remains limited in many African countries. Supply and distribution of medicines are a fundamental aspect of the success of any health system. Disruptions to this supply undermine health outcomes as supply chains have an impact on the availability, cost, and quality of medicines for patients.

Common problems associated with the supply and distribution of pharmaceuticals often include poor supply chain management, stock pilfering, insufficient human resources, and limited financing resulting in chronic stock outs. In resource-poor settings where public services fail to meet demand, the private and voluntary sectors are increasingly being called on, prompting some policy makers to consider private mechanisms as alternatives to state-run drug procurement and distribution systems.

This study reviews some of the ways in which some countries in Africa organize their private pharmaceutical supply and distribution channels, focusing on three diverse countries: Ghana, Malawi, and Mali. It discusses some of the strengths and challenges associated with such arrangements, as well as relevant options to improve access, availability, quality and affordability of privately supplied pharmaceuticals.

Keywords: Pharmaceuticals, Supply Chains, Distribution Channels, Access, Private Sector

Disclaimer: The findings, interpretations and conclusions expressed in the paper are entirely those of the authors, and do not represent the views of the World Bank, its Executive Directors, or the countries they represent.

Correspondence Details: Andreas Seiter, World Bank, aseiter@worldbank.org

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ACRONYMS

ACT	Artemisinin combination therapies
API	Active pharmaceutical ingredient
AMFm	Affordable Medicines Facility - malaria
CHAM	Christian Health Association of Malawi
CFAF	CFA franc (1 CFA franc = \$0.0023)
CMS	Central medical store
CSCOM	Centre de Santé Communautaire (Mali)
CSRef	Centre de Santé de Référence (Mali)
DPM	Direction de la Pharmacie et du Médicament (Mali)
FDB	Food and Drugs Board (Ghana)
GHC	Ghana New Cedi (1 GHC = \$0.70)
MASM	Medical Aid Society of Malawi
MK	Malawian kwacha (1 MK = \$0.00724)
NHIS	National Health Insurance Scheme (Ghana)
PPM	Pharmacie Populaire du Mali
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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PREFACE

Sustainable access to affordable, high-quality medicines is an important component in all health care systems but remains limited in many African countries. Supply and distribution of medicines are a fundamental aspect of the success of any health system. Disruptions to this supply undermine health outcomes as supply chains have an impact on the availability, cost, and quality of medicines for patients.

Common problems associated with the supply and distribution of pharmaceuticals often include poor supply chain management, stock pilfering, insufficient human resources, and limited financing resulting in chronic stock outs. In resource-poor settings where public services fail to meet demand, the private and voluntary sectors are increasingly being called on, prompting some policy makers to consider private mechanisms as alternatives to state-run drug procurement and distribution systems.

This study reviews some of the ways in which Africa organizes private pharmaceutical supply and distribution channels, focusing on three diverse countries: Ghana, Malawi, and Mali. The study focuses on medicines and does not address issues related to laboratory reagents or pharmaceutical devices. The threefold aim of this study is to better understand the state of private supply and distribution channels in Africa, with a specific focus on evidence from Ghana, Malawi, and Mali, to identify some of these channels' performance gaps; and to make suggestions for reinforcing the private sector to improve access to high-quality medicines. Many studies have investigated public drug-supply systems, but only a few have looked into the private pharmaceutical sector in low-income countries.

The selection of the three countries was to some extent opportunistic, based on the possibility of establishing local support and setting appointments with local stakeholders in the short time available. Another consideration was to have data from countries with different colonial histories (French and British), on the assumption that differing trade relations and legal systems might have led to differences in how the private pharmaceutical sector developed.

The study was performed as an exploratory piece of research, starting from interviews with individuals in various official positions and subsequent local networking to identify additional sources. Members of the study team conducted interviews during two-week missions to the three countries, during July–November 2009. They also drew data from secondary sources and interviews with actors at each level of the private pharmaceutical supply and distribution channel. None of the three countries has a centralized data source on private sector pharmaceutical business and trade (unlike most high- and middle-income countries). Most of the information obtained is therefore based on the opinions of those involved in the private pharmaceutical sector.

It is hoped that the information obtained in this study can inform decision makers in strengthening and improving private sector pharmaceutical supply chain mechanisms in the Africa region.

PART I – BACKGROUND

ROLE OF THE PRIVATE SECTOR IN PROVIDING MEDICINES IN AFRICA

The Africa region accounts for 11 percent of the world's population and 24 percent of the global disease burden. Continuous access to high-quality medicines is an important component of health care but is still problematic in many African countries. The supply and distribution of medicines in the public sector is often highly centralized and marked by inadequate storage facilities, poor forecasting of needs, stock pilfering, insufficient human resources, and limited financing all resulting in chronic stock outs.

Donors have experimented with a range of approaches to strengthen in-country medicine supply including building new supply chains (President's Emergency Plan for AIDS Relief - Supply Chain Management System or PEPFAR-SCMS, for example) and strengthening public sector supply networks (for instance, the Global Fund to fight HIV/AIDS, Tuberculosis, and Malaria – GFATM- and the U.S. Agency for International Development/John Snow, Inc.). Donors are also exploring how private sector supply and distribution channels can effectively complement state-run drug procurement and distribution systems.^{1,2}

Some of the literature on the role of the private sector in improving health services focuses on market failures and the negative implications for affordability, socioeconomic determinants of use, and quality.³ It is often assumed that the private sector targets wealthy clients and therefore has higher prices.

Evidence however shows that the poor are often the largest consumers of private health services.⁴ National household surveys suggest that the poor, for a variety of reasons other than price, (such as perceived quality of care, availability of medicines and health care workers, discrimination, and additional payments) resort to buying medicines for cash from private and informal drug sellers.

Private sector services to the poor are provided in the formal or informal sector and on a commercial for-profit or not-for-profit basis. In the informal sector they may include traditional healers, midwives, and individual medicine sellers. An IFC-McKinsey study suggests that of an estimated total health expenditure of \$16.7 billion (2005) in Sub-Saharan Africa, about 60 percent (mainly out of pocket) was financed by private parties.^{1,5} About 50 percent of this estimated total health expenditure is offered by the private sector providers.⁶

Private provision of medicines and health services has its roots in part in the privatization of the health professions since the late 1980s and 1990sⁱⁱ. It can also be linked back to the failures of the public health system to ensure a continuous supply

ⁱ Data for Sub-Saharan Africa (excluding South Africa) is extrapolated from the most recently available data (1995–2002) from national health accounts for Ethiopia, Kenya, Malawi, Namibia, Nigeria, Rwanda, Tanzania, Uganda, Zambia, Zimbabwe, and additional data available for 13 other individual nations.

ⁱⁱ For example, in Mali the health professions began to be privatized in 1985 (Law No. 85-41/AN RM); the first pharmacies opened in Bamako in 1989 and wholesalers were granted licenses in 1992. In Malawi the government began granting licenses for private pharmacies in the early 1990s.

of high-quality medicines. The private sector can offer attractive alternatives where public services are inaccessible, unaffordable, and of poor quality—and it is often the only option open to users.

COUNTRY CONTEXT OF GHANA, MALAWI AND MALI

The three focus countries chosen for this study show wide geographic, economic, social, and historical differences. They come from English- and French-speaking Africa and have ties of varying strengths with European, African, and Indian pharmaceutical suppliers. They draw on different legal traditions (common and civil law) and regulatory frameworks. They depend on imports to varying degrees and rely on a mix of public and private health care services.ⁱⁱⁱ

Supply and distribution systems in these three countries involve different actors and are organized in various ways for a raft of reasons, including income distribution, historical influences, power and influence of particular groups, role of the state and the private sector in health care, financial incentives, and national laws and regulations.

Economics and Demographics

On per capita gross national income measures, Ghana (\$1,190) and Mali (\$680) are considerably better off than Malawi (\$280). The countries are primarily rural with less than half of the population in urban areas: Ghana 50 percent, Mali 33 percent, and Malawi 19 percent. While about 90 percent of the population of Malawi lives on less than \$2 a day, the situation is better in Ghana (53.6 percent) and Mali (77.1 percent). Ghana has a longer life expectancy (57 years) than Malawi (53 years) and Mali (48 years). All three countries are malaria-endemic regions, but the prevalence of HIV in the population 15–19 years of age is much higher in Malawi (12 percent) than in Ghana and Mali (both 2 percent).

Public Health Services and Health Insurance

All three countries offer public health care services, which include local clinics as well as regional and national hospitals. Only Ghana offers public health insurance. Patients report high out-of-pocket spending on health services and medicines. Use of the private sector appears to be growing in all three countries.

In Ghana, health care services and medicines are covered by the National Health Insurance Scheme (NHIS). Wealthy individuals and those employed in the formal sector may also have access to a form of private or employer-based insurance, including coverage for medicines. About half the population is not yet covered by the

ⁱⁱⁱ Health care services may be provided by several sectors: government or public; faith-based or non-governmental organization; employer; and private. The share of services offered by each depends on the country. Although government services are often free, faith-based/non-governmental organization and employer-provided health services are delivered by the private sector. Faith-based/nongovernmental organization and employer (such as plantation and mine) services are often on a not-for profit basis.

NHIS and therefore pays out of pocket for medicines. Some 50 percent⁷ of the funds paid out by the NHIS are for pharmaceuticals.

In Malawi, the public sector offers free health services and medicines, though maternity care, private wards at central and district hospitals, and some outpatient departments charge patients fees. The not-for-profit private sector (mission hospitals, non-governmental organizations, and the Christian Health Association of Malawi) offers services and medicines for a small fee. Private health care is limited, but given the thinly spread public sector resources, it is growing. The health insurance industry in Malawi is underdeveloped, and insurance is not compulsory even in public sector employment. Since 2000, a few private health insurance programs have been established, such as OASIZ Medical Aid and the Medical Aid Society of Malawi (MASM). Some parastatals and firms have small programs of their own, which they operate themselves or contract out to MASM to administer on their behalf. Spending on medicines remains low: only about 10 percent of MASM's health expenditure was on drugs in 2004–05.⁸ See box C1.

In Mali, the public sector provides health care services and medicines but patients must make a small co-payment. Some public health insurance programs exist for certain formal employees, and usually require a copayment, but they cover hospitalization, primary care, and medicines. Private health insurance programs are paid for through personal premiums or employer-paid group insurance schemes. About 80 percent of the population has no insurance cover other than the basic state-provided public health services.⁹ They are therefore subject to out-of-pocket user fees for items such as medicines and diagnostic tests. These costs are rising. One study suggests that between 2005 and 2009 there was a 134 percent increase in private sector health expenditures of which the greatest share is the cost of medicines.¹⁰

The Role of the State in the Pharmaceutical Market

The role of the state in the pharmaceutical market differs greatly by country, partly because of variations in regulatory approaches. In Mali, for example, the government closely regulates the price of pharmaceuticals, but in Ghana and Malawi the government does not get involved.

The state is a large purchaser and supplier of medicines in all three countries. They all have an essential drugs list drawn up by the national drug authority. The extent to which the public sector is involved in selection, procurement, and distribution of medicines varies.

In Malawi, for example, the government purchases 70–90 percent^{iv} of all medicines consumed in the country.^v Donors supply many products through parallel channels (contracting to foreign logistics companies) to the national central medical store (CMS), mission hospitals, and health centers run by nongovernmental organizations. No local businesses have yet been able to compete with foreign suppliers for government- or donor-financed tenders for drugs.

In Ghana and Mali, a more developed private sector often supplies the public sector.

^{iv} Reports of these numbers vary widely.

^v Interviews with UNICEF Malawi, and Pharmavet, Ltd., Malawi.

In Ghana in 2008, the Ministry of Health spent \$31 million (including pooled procurement) on medicines and nondrug items or about 10 percent of total retail sales (estimated at \$300 million).¹¹ The CMS carries out procurement and distribution for the public sector, but if there are stock outs and regional medical stores or service delivery points have no access to products, they are allowed to buy from the private sector.¹² The launch of the NHIS in 2006 led to a rapid increase in consumption of medicines. The public supply system, with its long planning cycle, was unable to respond to the sharp increase in demand, leaving it to the private sector to step in. As a result, some subnational medical stores buy up to 80 percent of their supplies from private distributors.¹³

In Mali, the CMS (the Pharmacie Populaire du Mali) provides most pharmaceutical supplies for the public sector. The government contracts out services—procurement, warehousing, and distribution of essential medicines throughout Mali—to this organization on a three-year basis. The public drug budget in 2007 was CFAF 9.5 billion (\$21 million) or about 14.8 percent of total national pharmaceutical consumption. The National Pharmaceutical Policy (2000) outlines a program that all pharmaceutical import and distribution should follow. In the case of stock outs, though, health centers may procure products from private wholesalers by drawing on small budgets, funded by patient copayments. Hospitals are allowed to offer tenders to the private sector (often on an adhoc basis in case of stockout), but this is said to be an unattractive market for private wholesalers, as the government takes a long time to pay.^{vi}

The Business Environment

The business environment and government regulatory framework are important in creating a favorable setting for the private sector. Government procurement policies and the availability of health insurance are factors that help determine the size and growth of the pharmaceutical market. Because these two factors in Ghana are directed to allowing public entities to call on private suppliers, the country has been able to develop a relatively large pharmaceutical sector. Government procurement policies can also provide support to local businesses: in Ghana, for example, the government prohibits import of 44 basic medicines, which local manufacturers supply.

Mali has no pharmaceutical manufacturing. The dominant private wholesalers have close ties to France. Efficient global supply and national distribution networks supply public health care providers. Theoretically, the Pharmacie Populaire du Mali could also supply private pharmacies, but in practice seems not to.

The government in Malawi offers little support to local private manufacturing or wholesalers. It prefers international tenders and international donors for procurement and supply.

At the retail level, higher per capita incomes in Ghana and Mali allow for a larger potential market for pharmacies and chemical sellers/*dépôts de vente*.

^{vi} Interview with Laborex, Mali.

^{vii} In Mali, some large wholesalers provide start-up capital for new retail pharmacies. In Malawi, the retail pharmacy sector is limited by low per capita incomes and the absence (until recently) of institutions offering pharmacy training. The growth of private pharmacies there has also been hindered by government policy to promote private doctors' dispensing rather than prescribing.

At all levels of the private supply and distribution channel, many of those interviewed complained about problems of debt and lack of payment discipline, which reverberate throughout the chain. For example, the failure of health insurance companies to pay pharmacists on time affects retailers' ability to settle debts with their own suppliers. Many business people wanted to adopt alternative approaches to business (e.g. cooperatives, franchises, chains, hiring additional staff, dealing with partners beyond the family) but feared that they would be unable to trust their business partners or employees not to steal or take advantage of their arrangements.

The Informal Sector

The informal sector—defined as the market where unregulated medicines are sold to patients—appears to be growing in all three countries. Solid data are missing, however. Locals estimate its value in Mali^{viii} at 15-30 percent of the market, which is valued at between CFAF 8.8 billion (\$20.2 million) and CFAF 17.6 billion (\$40.56 million).^{ix} In Ghana they suggest that illegally circulating drugs account for 10–20 percent of the total.¹⁴ Medicines in the informal sector may be counterfeit, substandard, or even high-quality products, but as they are unregulated their origin, price, and quality cannot be assured.

The drivers of the informal sector are poverty (the sector allows customers to buy medicines by the pill, which is cheaper at the time than a whole box or blister), lack of education and illiteracy, lack of knowledge about drug quality, stock outs in the public sector, high cost of medicines in the formal sector, and distance to public or private selling/dispensing points.

These factors are frequent in the three countries. The informal sector requires substantial political will to tackle—some actors involved in the supply of pharmaceutical products to the informal market are said to have good political connections and resist the implementation of regulations that would diminish their business. Also, not everyone regards the informal sector as a problem: some locals seem to view it as a source of inexpensive medicines and employment, and a way in which to alleviate problems of access to medicines.

^{vii} As discussed in the section *Retail and health care services*, the three governments allow outlets staffed by those with no or little training in health care or pharmaceutical dispensing to sell a narrow range of medicines. These outlets are known as chemical sellers (Ghana), drug stores (Malawi), and *dépôts de vente* (Mali).

^{viii} In 2005, Dr. Cissé Djita Dem, president of the Malian Order of Pharmacies, estimated that the informal sector was valued at about CFAF 10 billion (\$23,120,000) (Marsaud 2005).

^{ix} Hypotheses: the total Malian pharmaceutical market (public and private) at retail prices is about CFAF 58.8 billion (about \$135.2 million). See Appendix D.

PART II– EXPERIENCE OF PRIVATE SUPPLY AND DISTRIBUTION CHANNELS

This section compares the picture of private supply and distribution channels of countries in Africa, with specific focus on Ghana, Malawi and Mali, by looking at each segment of the supply channel: product manufacturing, flow of goods into and within a country, and retail and health care services. The section ends by reviewing the impact on medicines of donor funding.

PRODUCT MANUFACTURING

Product manufacturing refers to the production of finished pharmaceutical products (final formulators). It is big business in Africa. The International Finance Corporation estimated the Sub-Saharan Africa pharmaceutical market to be worth \$3.8 billion in 2006.¹⁵ Local final formulators created 25–30 percent of this value.

While 37 Sub-Saharan countries have some pharmaceutical production, South Africa dominates the sector with over 70 percent of regional production. Nigeria, Kenya, and Ghana (the next largest, in order) together represent another 20 percent. Nigeria and Ghana's production focuses more on local consumption while Kenya exports 35–40 percent of production.

The sector is also growing: the International Finance Corporation estimated that 40 percent of the cumulative \$1.6 billion–\$2.9 billion projected investment in health care in the region over 2007–16 will be in generic final-formulation manufacturing.¹⁶

Ghana has about 32 pharmaceutical manufacturers (of which 22 are active), Malawi has 4 (of which 3 are struggling), and Mali has none. Several factors explain this outcome:

Government incentives. Ghanaian law prohibits imports of 44 basic medicines, which are locally manufactured. They include anti-infectives, paracetamol, aspirin, antacids, antibiotic tablets, syrups and creams, vitamins, and antimalarials. In addition, 66 of the 200 basic materials required for production are exempt from value-added tax (12.5 percent) and the national insurance levy (2.5 percent). Local manufacturers have also benefited from the National Health Insurance Scheme (NHIS), which increased financing for medicines and led to sharp growth of the market. They now supply about 30 percent of the local market (the rest is imported). The downside, though, is that almost all of them manufacture the same products and have yet to begin moving up the value chain.

Weak private consumption. In Malawi, the largest purchaser of medicines is the central medicine store (CMS), which accounts for 70–90 percent of all medicines consumed in the country.^x Government tenders are often awarded to foreign procurement agents that procure cheap generics from India. There are often emergency tenders (four a year), which have been awarded to local wholesalers (who then generally import products from abroad) and on occasion to local manufacturers (PharmaNova and SADM—each were granted one tender in 2008). Local

^x Reports vary widely as to the annual budget of the CMS.

manufacturing is therefore focused on supplying the small private sector, which includes clinics, wholesalers, pharmacies, and hospitals.

Challenges in Procuring Manufacturing Materials Globally

Most African pharmaceutical manufacturers source their active pharmaceutical ingredients (APIs) and other materials required to manufacture final formulations mainly from India and China, then the United States, Italy, and other European countries.^{xi} They buy their supplies (APIs, excipients, glass bottles, blister packages, paper cartons, and manufacturing machinery) through a procurement agent rather than directly from API manufacturers. Procurement agents have access to prices from many suppliers in various countries. Agents may source through brokers if quantities are too small. As most African manufacturers have poor access to lines of credit, they have to pay for their orders upfront. As this is difficult, many brokers grant payment terms (of 90–120 days).

Some API manufacturers require local final formulators to pay upfront, which can also be hard. Brokers can provide financing and arrange shipping, adding these costs, plus the agent's margin, to the final bill. Margins can be 10–15 percent of the free on board cost: financing 3 percent, large broker 7 percent, and smaller broker 1–3 percent. If large brokers are too expensive, smaller agents intervene and arrange the financing themselves.

African pharmaceutical manufacturers can have difficulties in forecasting demand, dealing with fluctuating costs, and managing their manufacturing pipeline. The volume of their finished products therefore fluctuates widely. In addition, with a lack of continuous orders, in-bound transport difficulties, and problems accessing credit, manufacturers may be unable to stock enough raw materials, forcing them to stop production at times.

An ideal product pipeline for pharmaceutical manufacturers in West Africa—where shipments from China take four to six weeks—requires one shipment of APIs in stock, one in an African port, one at sea, one in port in China, and one at the API manufacturer's factory.^{xiii} Throughout this process, prices of APIs may fluctuate. Local agents pay clearing costs and clear materials at the closest port and arrange transport to factories. Serious delays in port clearance and transport can occur. Before the goods arrive, brokers send documents to local agents or manufacturers so that they can obtain insurance on the goods for the last leg, which costs about 1 percent of the cost, insurance, freight cost. Such delays set back production, sales, and return on investment—and so payment to suppliers.

As African final formulators source almost all their materials from beyond the continent, they face similar problems to those of pharmaceutical manufacturers, such as:¹⁷

Poor access to foreign exchange. Purchases in foreign markets are transacted in U.S. dollars. But manufacturers often complain of difficulties in accessing foreign exchange or of poor exchange rates due to local currency devaluations. In Malawi, for

^{xi} Although South Africa produces APIs (such as acetaminophen, acetylsalicylic acid, and other fine chemicals), waxes, gums, and maize-based products (such as starch, glucose, and dextrose), its output is too small and prices too high to sell in other African countries.

^{xii} Interview with U.K. based chemical broker.

example, at certain times of the year (once the harvests of commodity crops are sold and when donors release funds) the government and the national banks have better access to foreign currency. At other times, the supply is limited. Given that Malawian manufacturers are paid in local currency, they are sometimes unable to pay foreign currency bills.

Fluctuation of API prices and supply of raw materials. Some reports have highlighted the volatility of API prices and supplies.¹⁸ API prices may fluctuate on a monthly or even a daily basis. Interviews with procurement agents for this study suggested that prices for raw materials always have an expiration date and are usually only good for three months. Prices and supplies may fluctuate due to shortages of materials or increases in prices of raw materials. Countries may also impose limits on exports. The Indian government, for example, occasionally prohibits exports of maize products.

Taxes and tariffs on medicines. Imports of APIs may be subject to value-added tax and tariffs. Raw materials in Ghana, for example, are subject to value-added tax of 12.5 percent plus 2.5 percent health insurance levy, and in Malawi to 6.5 percent value-added tax. Manufacturers in theory can claim them back, but procedures are complicated and delays in reimbursement occur—so sometimes they do not get the money. In addition, local manufacturers may have to pay a share of the cost, insurance, freight charges (7.5 percent in Malawi) to clear goods locally.

Unreliable and expensive utilities. The high cost and erratic supply of water and electricity make manufacturing difficult. Equipment may also be old and inefficient, increasing utility costs.

Poor transport infrastructure. As a landlocked country, Mali faces problems that Ghana and other countries with easy access to large ports do not. Goods from India and China can take about eight weeks—even longer if products are stuck in port in Beiria, Mozambique (reportedly a common event).^{xiii} If goods arrive in Durban, South Africa, or in Mozambique they are transported by truck overland, but they are sometimes delayed by lack of trucks.

Poor forecasting. Some African manufacturers complain that because of poor tracking of stock, limited understanding of demand, stock outs, and irregular public tenders, they cannot forecast future demand and often run out of final products and raw materials.^{xiv} They are thus unable to hold large inventories and often manufacture in a short cycle.

Limited access to credit. Bank lending rates are often very high. In Ghana, some local financial institutions are willing to provide short-term working capital, others will finance the procurement of equipment only. Very few are willing to consider financing for larger scale upgrading e.g. building the requisite infrastructure or risk sharing as local guarantors of foreign loans.¹⁹

High cost of meeting quality standards. Some observers have suggested that African formulators should be better trained to assess quality of APIs.²⁰ But even if

^{xiii} Interview with U.K. based chemical broker and SADM and PharmaNova, Malawi.

^{xiv} Interviews with David Bisnowaty, SADM, Anup Panchal, General SADM, Mr. Dumisani Chisala, Malawi Pharmacies Ltd.; U.K. based chemical broker.

formulators could do this and launched quality assurance systems, higher costs could undermine their competitiveness.

PRODUCT IMPORT AND DISTRIBUTION

Research for this study suggests that, based on our small sample, English- and French-speaking countries in Sub-Saharan Africa import pharmaceutical products differently, with implications for the type, quality, and source of products; distribution networks; and warehousing and transport.^{xv}

Comparing Mali with Ghana and Malawi highlights the importance of consolidated import and distribution channels with transparent pricing—which Mali has. Its approach has a heavy impact on product quality, warehousing, and product supply management, as well as delivery services.

Most pharmaceuticals sold in Mali's private sector carry brand names. They are imported from France by two large wholesalers (Laborex and CoPharma), which belong to European conglomerates controlling about 80 percent of the national wholesale market. Both companies' imports are similar and the prices are transparent, set as they are through an agreement between manufacturers, government, and wholesalers. The supply chain is thus highly consolidated and the two wholesalers compete on the basis of financial services, stock availability, and delivery, rather than product or price.

Because the two wholesalers are backed by large conglomerates (which have strong ties to multinational pharmaceutical companies), supply chain management is far more sophisticated than in Ghana or Malawi. They have well-established distribution networks. Laborex, for example, has eight delivery shuttles within Bamako. For delivery to the regions they contract out to specialized pharmaceutical distribution companies or individual deliverymen, or send products by plane (depending on the route). Both companies offer same-day delivery in Bamako, and in one or two days in rural areas. Together they service 400 pharmacies, in all regions of the country.

In contrast, the import and distribution channels in Ghana and Malawi are fragmented. Importers are often wholesalers, pharmaceutical manufacturers, or pharmacists. Ghana has about 60 importers, 12 manufacturer/wholesalers, 166 wholesalers, 328 wholesaler/retailers, 700 retail pharmacies, and 11,159 chemical sellers. It also has many levels in the supply chain as importer/wholesalers often sell to one-stop-shop wholesalers, which then sell to individual drug salesmen that then sell to pharmacies or chemical sellers. Some supply chains are vertically consolidated. Ernest Chemists, for example, is an integrated importer, wholesaler and retailer. For its part, Malawi has about 22 importer/wholesalers, 4 importer/manufacturers, and 4 importer/pharmacies.

^{xv} These are conclusions drawn from the sample in this particular study of two English speaking (Malawi and Ghana) and one French speaking country (Mali) in Africa. This paper does take into account various factors including historical, regional, colonial histories, regulatory frameworks and business linkages. However, further studies on other Africa countries would be necessary to draw any firm conclusions about patterns of pharmaceutical supply and distribution channels in French and English speaking Africa.

These systems are characterized by weak distribution networks and fragmented competition. Customers in large cities receive deliveries from large wholesalers but those in periurban and rural areas often have to collect at wholesalers' offices in the capital or regional hubs. Malawi's distribution networks are informal, and as it has few pharmacies outside Blantyre and Lilongwe, there is limited demand for regular supply routes. Distribution may be through national bus routes or company vans as needed. In Ghana this gap in the market has been filled by individual drug salesmen who buy enough products to fill their vans and travel around the countryside selling their products to rural pharmacists and chemical sellers.

This practice is detrimental to the quality of products, the supply chain is unregulated, and the distribution business partially operates outside the formal market. Individual salesmen have no training in pharmaceuticals, products might be purchased from anywhere, and transport conditions are poor.

RETAIL

An array of outlets retail pharmaceutical products privately, including wholesalers, pharmacies, private doctors' clinics, chemical sellers/ drug stores/ *dépôts de vente*, and grocery stores. Government policies determine the drugs that each type can sell.

All three countries have attempted to extend access to medicines by allowing people with no or limited training in health care or pharmaceutical dispensing to sell a few medicines, usually antimalarials, analgesics, and other over-the-counter drugs. The outlets are known as chemical sellers (Ghana), drug stores (Malawi), and *dépôts de vente* (Mali). They are usually small, single-owner businesses with low turnover and profit. The owners of chemical sellers in Ghana are often farmers, teachers, or nurses. Pharmacists with pharmacies in urban areas also run chemical sellers, to supplement their income, but this can diminish their pharmacy services, since knowledgeable staff are not available to advise patients.

IMPACT OF DONOR FUNDING

Multilateral and bilateral donor policies can affect Africa's pharmaceutical manufacturing as well as the continent's supply and distribution channels. Responding to developing country health crises, donors in recent years have focused on supporting health systems and improving access to medicines mainly in the public sector but increasingly in the private sector as well. They have developed new mechanisms and allocated substantial funding to purchase medicines. They have also provided aid in the form of drug donations, given policy advice to improve procurement and storage practices, and proposed new quality assurance standards (which many countries have implemented).

Despite the donors' objectives of improving access however, a number of initiatives can have a detrimental impact on local manufacturing and on private supply and distribution channels:

International negotiated price reductions: Although drug or product price-reductions negotiated by multilateral agencies improve financial access to high-

quality medicines, they can also undermine local manufacturers' product portfolios. One new financing mechanism launched by the Global Fund for AIDS Tuberculosis and Malaria (GFATM), called the Affordable Medicines Facility for Malaria (AMFm), may potentially hurt Ghanaian manufacturers. This initiative is designed to expand access to the most effective treatment for malaria, artemisinin combination therapies (ACTs). It aims to reduce the use of other less expensive treatments to which malaria parasites are becoming increasingly resistant.

The GFATM aims to reduce the manufacturers' selling price of ACTs to public, private, and not-for-profit buyers, by negotiating with manufacturers to gain a lower price for ACTs (with the condition that sales prices are the same for public and private sector buyers). The GFATM then pays a large proportion of this reduced price directly to manufacturers on behalf of buyers (a buyer "co-payment").^{xvi} Buyers pay at least about \$0.05 for each course of quality assured ACTs. In participating countries,^{xvii} the initiative is likely to greatly reduce the price of ACTs from about \$6–\$10 per treatment in the private sector and \$1 per treatment in the public sector to a customer price of about \$0.20–\$0.50 per treatment.

Of the three study countries, Ghanaian manufacturers were concerned that they would be affected by the initial rollout in 2010. Ghanaian manufacturers, whose main products are anti-malarials, may see a negative impact on their business, since they doubt their ability to compete with high-quality foreign ACTs if they are sold at a fraction of their original price.^{xviii} To take part in the scheme, local manufacturers would be required to meet quality standards (as defined by the GFATM) and maintain production costs at levels at or below large international companies.

International quality certification: Donor support to the CMS may involve financial support and the reform of national tender policies. Such steps can introduce new tender requirements and quality standards that present challenges to local manufacturers and that result in many annual tenders being awarded to foreign agencies. Several African manufacturers and procurement agents interviewed for this study noted that international quality standards, such as the World Health Organization (WHO) or the United Nations Children's Fund (UNICEF) prequalification and World Bank procurement guidelines, lead to the exclusion of local industries from this market. Although some African manufacturers are financially strong enough to refurbish their factories to adopt international good manufacturing practices, they say that they prefer not to because they are not confident of a return on their investment.

A 2009 World Bank policy note suggests that pharmaceutical manufacturers in Ghana source only about 30 percent of their supplies from preapproved WHO suppliers, a proportion confirmed in interviews with a procurement agent who has a strong presence in English-speaking Africa.²¹ He suggested that prices for APIs from WHO-approved sites are often too expensive for African manufacturers. For example, the top-quality acetaminophen from the best American supplier with complete drug

^{xvi} The GFATM pays for transport and insurance costs to the first point of entry, i.e. on a "Free Carrier" (FCA) basis. It does not cover the cost of transport from the first point of entry to a designated place in the country, insurance or local packaging. Any additional costs are paid for by first line buyers.

^{xvii} Cambodia, Ghana, Kenya, Madagascar, Niger, Nigeria, Tanzania and Uganda.

^{xviii} Interview with LaGray Pharmaceuticals, Ltd. Ghana; PMAG Ghana.

registration files costs about \$6 per kilo, against only \$4 per kilo from some sources in China.^{xix} Further, high-quality suppliers may be unwilling to supply African manufacturers in the small quantities that they buy.

International donations and procurement guidelines. Multilateral and bilateral donor support may involve donating medicines either to the CMS or through parallel channels that bypass the CMS. Such parallel channels may be private wholesalers (such as the World Bank Multi-Sector HIV/AIDS Program or MAP Project in Mali, box 4.1) or foreign logistics companies that supply, warehouse, and distribute products to public or mission health institutions (such as UNICEF and SDV Ltd. in Malawi).

In countries with local manufacturing capacity (such as Ghana and Malawi), local manufacturers complain that basic products that can be manufactured locally should be sourced within the country rather than manufactured and supplied by foreign producers. In Malawi, for example, the newly formed manufacturers' association, PhaMAM, has advocated that the government allocate a portion of CMS annual procurement to local manufacturers for basic products such as paracetamol, aspirin, quinine sulphate, amoxicillin, and cotrimoxizole.^{xx}

Box 1 World Bank Multi-Sector HIV/AIDS Program (MAP) project, Mali

One way in which donors can use local private supply and distribution channels better is by contracting private suppliers to procure, warehouse, and distribute products for the public good. In Mali, through the MAP project, World Bank funding and private procurement and supply expertise extend access to antiretrovirals by making products available in private pharmacies. The World Bank provided funds to the national AIDS Council (Haut Conseil National de Lutte Contre le SIDA), which then opened a national competitive tender to select a private procurement agent and wholesaler. In 2008 Laborex was selected to procure stock in accordance with World Bank procurement guidelines, and warehouse and distribute products to private pharmacies throughout the country.

Laborex receives a 5.5 percent margin to cover costs. For this project, Laborex has created a special section in its warehouse and ensures that each delivery package is individually sealed and transported in appropriate conditions. After initial problems in adhering to World Bank procurement guidelines, Laborex has selected two Indian generics manufacturers (Matrix Laboratories and Cipla) to supply 10 products.

The project recruited pharmacists for the scheme. They are required to receive training in the pharmacology and dispensing of antiretrovirals and to renovate their pharmacies to ensure a discreet place for patients to talk with the pharmacist. For their services, pharmacists are paid a small amount (CFAF 1,800 or \$4.16) for every patient.

Some problems have arisen, such as public doctors' desire to keep control over dispensing antiretrovirals, difficulties in adhering to World Bank procurement guidelines and following Malian import procedures, and the Pharmacie Populaire du Mali's wish to continue procuring and distributing products to the private sector.

^{xix} Interview with U.K. based chemical broker.

^{xx} David Bisnowaty and Anup Panchal, SADM, and Dumisani Chisala, MPL Ltd., Malawi.

PART III – PERFORMANCE OF PRIVATE SUPPLY AND DISTRIBUTION CHANNELS

The supply and distribution of medicines are a fundamental aspect of the success of any health system, ensuring local populations' access to medicines. Effective supply and distribution channels are necessary to achieve positive health care outcomes.²²

Well-functioning supply and distribution channels:

- Distribute medicines to a location within a reasonable distance of the patient
- Offer a consistent availability of the right type and quality of medicine;
- Deliver products at prices that patients and the health system are able to afford and to sustain;
- Provide access to safe, authentic, efficacious, and unexpired products;

The extent to which supply and distribution channels ensure geographic access, consistent availability of medicines, and high-quality and affordable products, with particular focus on Ghana, Malawi and Mali, is discussed in this section, and summarized in Table 5.1.

GEOGRAPHIC ACCESS

Geographic access is determined by the costs and modes of product transport and the location of dispensing outlets (pharmacies, chemical sellers/ drug stores/ *dépôts de vente*, and private clinics).

Despite the various outlet types, access to medicines in rural areas remains a challenge for all three countries for several reasons:

- *Lack of service delivery points for medicines.* In Mali 580 pharmacists are waiting to be granted a license to practice. In Malawi the absence of local pharmacy training programs has led to a lack of trained practitioners to open pharmacies.
- *No “last-mile” distribution from wholesalers.* In Ghana and Malawi pharmacists and chemical sellers often must pick up products from wholesalers, creating a market for individual drug salesmen who sell products door to door. (In Mali, by contrast, large wholesalers' distribution networks supply products to centers throughout the country regularly.)
- *Unapproved and unregistered sales.* Chemical sellers/ drug stores/ *dépôts de vente* and pharmacies often sell medicines that are not on the general sales list or that are not registered with the national drug authorities.
- *Lack of trained staff in drug dispensing outlets.* This can lead to inappropriate dispensing of medicines and irrational use of drugs.
- *Poor business environment and high failure rates.* In all three countries, the business environment for pharmacists is difficult and many pharmacy councils told of high rates of undeclared pharmacy failures.^{xxi} Retailers complained of high overheads, excessive taxes, and poor financial services for pharmacists.

^{xxi} Interview with Ghana Pharmacy Council, Dr. Check Oumar Dia, President of SYNAPPO, Dr. Gakou, Pharmacie V2M, Dr. Nouhoum Coulibaly, President of Conseil National de l'Ordre de Pharmaciens du Mali, Mali.

There are few incentives to open pharmacies in underserved areas. In Mali pharmacists depend heavily on wholesalers to finance new businesses.

- *Little knowledge or training in running a business.* Most of the pharmacists and chemical sellers interviewed used basic pricing methods to sell products “for a bit more” than the purchase price. All retailers relied on selling associated products for income, such as traditional medicines, shampoos, diapers, vitamins, and even machetes.

Some local bodies have taken steps to improve access to pharmacy services. The association of women pharmacists in Mali is trying to create a cooperative bank, which would provide small loans to member pharmacists. In Malawi, the few existing pharmacists are experimenting with retail formulas to increase the number of customers. These include opening pharmacies in grocery stores and pharmacy chains, and pooling procurement.

Another potential solution is to improve the quality of services at drug shops. Accreditation schemes, training, community mobilization, and better regulations would help. One example is the Tanzanian accredited drug dispensing outlet project (ADDO). The project aims to improve access to affordable, high-quality medicines and pharmaceutical services in retail drug outlets in rural or periurban areas where there are few or no registered pharmacies. The project hopes to change the behavior and expectations of individuals and groups who use, own, regulate, or work in retail drug shops. The project has tackled this by combining training, incentives (e.g. start-up financing, access to loans, authorization to sell some prescription medicines), consumer pressure by raising consumer education through marketing and public education, and regulatory coercion with efforts to affect client demand for and expectations of products and services.

Table 5.1 Challenges of the private pharmaceutical supply and distribution channels

	Geographic access	Availability	Affordability	Quality
Ghana	Limited in northern and rural areas. Poor distribution networks outside urban centers. Chemical sellers with limited stocks.	Good. Many wholesalers. Stock outs in public sector have a limited impact on private sector.	Wide range of products and prices. Public health insurance covers about half the population.	Limited inspections and government drug testing facilities. No World Health Organization prequalified manufacturers.
Mali	Fair. Wholesalers have a good delivery network. Few pharmacists in rural areas.	Good. Within the distribution network, wholesalers can deliver products to rural areas in two days. Can order high-value products from international suppliers for next day delivery.	Expensive. Mainly brand-name products. Generics segment growing. Limited pharmacist substitution of generic for brand-name products.	Brand-name products are good quality but generics more dubious. Poor inspection capacity and government testing facilities. Good wholesaler storage but poor pharmacy storage facilities.
Malawi	Few pharmacies, and they are in two urban centers. Drug stores and private clinics serve rural areas. Wholesaler delivery is generally in urban areas although special arrangements can be made.	Public sector orders crowd out private sector supplies. Malawi's location, delays in port, and poor transport make supply links tenuous.	Mainly generics. Private pharmacies are a low-volume, high-margin business. Private clinics are reportedly cheaper.	Unknown. Poor government inspection and testing facilities. No prequalified manufacturers. Put price before quality.

Common challenges

- Lack of pharmaceutical and supply and distribution channel market data.
- Poor knowledge of and limited demand for quality medicines.
- Weak government quality control testing.
- Fragmented supply and distribution channel (except Mali).
- Limited access to capital and financial service tailored to pharmaceutical sector.
- Weak competition on product price and little transparency in product pricing.
- Small markets and limited consumer purchasing power.
- Multilaterals' financing, donations, and procurement policies can harm the local private sector.

AVAILABILITY

The availability of medicines is least problematic in Ghana and Mali and more difficult in Malawi. Associated supply and distribution channel factors include:

- *Interference between supply and distribution channels in the private sector and the public and mission sector.* In all three countries, the supply and distribution channels of the private, public, and mission sectors are closely intertwined. This can become a problem if, as in Malawi, the private sector is relatively small and inbound supplies are limited by logistics and infrastructure challenges and limited access to foreign exchange. When there is heavy demand from the public or mission sector, wholesalers divert goods from the private sector, resulting in stock outs in private pharmacies.
- *Access to supplies of medicines of different value.* Malian wholesalers that are supplied by local subsidiaries of French logistics companies have well-established, vertically integrated international networks and can access products for delivery next day. Access can be limited, though, for low-cost products that are not profitable for distributors, given long transport routes. In Ghana, local manufacturing of several low-cost products and multiple importer–distributors generally allow pharmacists to source all they need. (Malawi is discussed in the previous bullet.)
- *Access to working capital.* All interviewed actors operating in the supply and distribution channels had problems in maintaining working capital due to lack of payment discipline. In Ghana and Malawi, wholesalers and manufacturers have little working capital, becoming indebted to their suppliers or unable reorder until their customers pay them. In Mali, large wholesalers seem to be able to finance pharmacy stock.
- *Warehousing and transport capacity.* Storage and logistics are expensive, and smaller wholesalers have less scope to manage the costs. The fragmentation of Ghana’s and Malawi’s systems leads to higher distribution costs than Mali’s model with its concentrated wholesale sector.

QUALITY AND AFFORDABILITY

Storage and Delivery Practices: Good storage and distribution practices have not been prioritized by supply chain actors in the three countries. Alongside the poor last-mile distribution in Ghana and Malawi and weak batch tracking in all countries, for example, retailers often store products in poor conditions. In Ghana and Mali the pharmacy owner’s office may have air conditioning, but not the storage areas, potentially degrading products. (Appendix B provides a list of products that have stability problems in tropical conditions.)

Potential ways to improve storage and distribution practices include supporting the creation of specialist pharmaceutical delivery companies or using shared private product-delivery platforms, as for example with Curatio in Ghana and VillageReach in Mozambique.

The Curatio business model aims to reduce the cost of delivering to rural pharmacies. It plans to leverage the extensive distribution network of Unilever to reduce costs, ensure quality, and extend deliveries to franchised dispensing points throughout the country. The initiative intends to carry out primary distribution from a warehouse near Accra using private distributors who currently distribute Unilever's consumer products. The secondary distribution will use the distribution capabilities of these private distributors through their fine-mesh network. The strategy will also use margin mix management within the drug portfolio (through private label, generic, and branded products) to ensure recovery of fixed and variable costs.

In 2002, VillageReach, in collaboration with the Foundation for Community Development (FDC), a national NGO and the Mozambican Ministry of Health, launched a program to address last-mile distribution problems and increase access to vaccines and other medical supplies in Cabo Delgado province. In 2008, an independent impact evaluation demonstrated a 26.5 percent increase in number of children fully vaccinated in the Cabo Delgado.²³

The program strengthens the logistics system by creating a simple delivery system, which improves the flow of information and provides a reliable source of energy. The program reorganized responsibility for logistics by establishing dedicated teams based at the provincial level and assigning them with specific responsibility, accountability, and authority for transport, logistics, cold chain, stock management. Implementing the system at the provincial level created economies of scale in the transport system. The delivery vehicles that carried vaccines, syringes, safety boxes, and gas could also deliver additional medical commodities. Field coordinators travel to each district and health center every month, delivering vaccines, gas and other supplies, providing supportive supervision and training, and bringing back data from the health centers. The data can then be used in vaccine forecasting, planning and logistics management and providing support to health workers.

The program partners also started a propane gas distribution business that provides energy for the cold chain. This enables the health program to keep temperature-sensitive vaccines cold, and provides the health centers with lighting for night-time emergencies and propane to sterilize medical equipment. The propane company also serves households and businesses, and is now the largest propane distribution company in northern Mozambique. In 2008, the propane gas company provided monthly services to 251 public health centers covering over 5 million people.

Generic vs Brand name products: The quality and affordability of medicines vary by country. In Malawi, 90 percent of medicines are generics, most from India. Private retailing is a high-volume, very low-margin business. In Ghana, low prices are important to the consumer but there is a broad choice of different countries' brands and of price. In Mali, because most of the products in the private sector are sourced from European brand-name manufacturers, most drugs are branded. Cheaper generics (which usually cost much less than brand-name products) are, though, gaining and now have about 30

percent of the market.^{xxii} In Ghana, in retail outlets when there is limited availability of generics, these products may be the same price or more than branded alternatives.^{xxiii, 24}

Prescribing habits and consumer choice: The quality and affordability of medicines are partly determined by government policy, doctors' prescribing habits, and patient preferences. In all countries visited, consumers regard brand-name medicines as better because they do not trust the regulatory agency. In a village in Mali, the *dépôt de vente*, close to the public health center, had a successful business selling branded products because patients had little faith in the generics offered by the public health services. But irrational prescribing habits in the private sector in Mali are increasing the demand for expensive medicines: about 80 percent of prescriptions are for brand-name products and about 67 percent are for medicines not on the national essential medicines list.²⁵ The situation is similar in Ghana, where only about 56 percent of prescriptions use international non-proprietary names.²⁶

Transparency and market choice: Price transparency and product quality are important in stimulating competition. Retailers display product prices in Malawi but not in Mali; yet further up the supply and distribution channel the situation is reversed: Malian wholesale prices are public knowledge but wholesaler and government tender results are not. In Mali, patients lack information about treatment options, product prices, and medicine availability in the private sector.

All three countries could benefit from greater transparency of prices, quality, and availability of medicines. Such information stimulates public information and debate, pressures supply chain actors to stock products, and increases market competition. Initiatives such as the Medicines Transparency Alliance (MeTA) can serve as a catalyst (box 2).

^{xxii} Interviews with Dr. Koné, Laborex, Dr. Traoré, CoPharma, Dr. Haidira, AfricaLab, Dr. Dembele, CAG, Mali.

^{xxiii} Interviews with Charles Allotey, Health Access Network, Lebene Songa, Krka Pharmaceuticals, Ghana.

Box 2 Medicines Transparency Alliance – (MeTA)

MeTA was established by the UK Department for International Development (DFID) in 2008 with the support of the World Bank and the WHO. The aim of the project is to improve access to affordable essential medicines in developing countries by increasing transparency in the regulation, procurement, distribution and sales of drugs in developing countries. The underlying hypothesis that guides the project is that when information on these elements is publicly available it provides stakeholders (civil society, government, and private sector) with a better understanding of the problems, greater incentives to enact change and more accountability for those responsible for instigating changes..

The program also allows stakeholders to build a rational approach to regulation, procurement, supply, and data gathering related to medicines, leading to more open public debate about problems in the pharmaceutical market. It works toward public disclosure of medicine-related information on quality and registration, availability, pricing, policies on ethical pricing, supply chain operations, access, and prescription and use.

MeTA has been piloted in seven countries (Ghana, Jordan, the Kyrgyz Republic, Peru, the Philippines, Uganda, and Zambia). Support for this project is provided in the pilot countries by government, the private sector and civil society and on an international level by the IFPMA, individual multinational pharmaceutical companies, and various civil society groups, including Transparency International and Health Action International. Participating governments commit themselves to disclose of a standard set of core data about medicines and to involve civil society, business and other sectors in using the data to help confront problems in the pharmaceutical market.

Each MeTA country created a forum in which stakeholders from national governments, private sector, health service providers, and civil society can discuss pharmaceutical policy and agree upon common work plans. Dialogue between in country partners is key to address problems and build trust between stakeholders. The second essential step in the MeTA process is to build a complete picture of the landscape with regard to the price, quality, availability and promotion of medicines. This information enables the forum to present evidence of where the problems lie, propose strategies to tackle them and track progress, using country-specific indicators. Civil society members (patient groups, consumer societies, professional associations) are supported in building capacity to monitor and increase accountability for prices, availability, selection, and quality of medicines in the public and private sectors.

PART IV –STRENGTHENING AND REINFORCING PRIVATE PHARMACEUTICAL SUPPLY

In formulating policies to support the private sector supply chain mechanisms, policy makers need to appreciate the suitability of initiatives to the local context. Key actions of support can then be initiated by Business, Governments and International Organizations to reinforce private sector pharmaceutical supply schemes which should aim to:

- Strengthen the position of consumers/patients versus suppliers by providing adequate information and using new technologies.
- Improve the regulatory environment for new businesses and new business models.
- Support access to financial services appropriate for the pharmaceutical sector.

CHOOSING A MODEL THAT WORKS IN A SPECIFIC CONTEXT

In formulating policies to support the private sector, policy makers need to appreciate the suitability of initiatives to the local context. Market forces alone cannot ensure improved service or efficiency. Competition incentives, appropriate and enforced regulatory frameworks, and social and cultural fit are also crucial.

One approach for example that some African countries such as Kenya and Rwanda have adopted involves the promotion of pharmacy franchises.^{xxiv} These aim to support access to high-quality and affordable (through greater volumes) medicines, standardized quality pharmaceutical products and pharmacy practices (including supply management and warehousing of products), and better access to medicines in underserved areas.

But such franchises are not always ideal, as they require a very good understanding of the local market, locally relevant business models, substantial investment in centralized functions (such as procurement, quality assurance, marketing, and monitoring), supportive local regulatory frameworks, and a pharmacist and customer culture that is receptive to franchising.

Franchises seem unlikely to gain traction in Mali in the short term. Interviewees there expressed skepticism on the potential of franchising pharmacy chains to improve access to high-quality medicines, partly because pharmacy regulations do not support the centralized procurement required by the franchise model.^{xxv} In addition, given limited

^{xxiv} A franchise is a right granted to an individual or group (a franchisee) to market a company's (a franchisor) goods or services within a certain territory or location. Typically franchises allow an individual entrepreneur to use their own capital to establish a new branch of the franchised chain. The new branch is identical to other branches in the chain. Low capital intensity for the franchisor, combined with an ability to scale up rapidly makes franchising appealing as a way of standardizing individual pharmacies in a relatively unregulated environment.

^{xxv} Interviews with Dr, Hamidou Traore, CoPharma; Dr. Halima Sokona Gakou, Pharmacie V2M; Dr. Nouhum Coulibaly, President, Conseil National de l'Ordre des Pharmaciens du Mali.

consumer awareness of the issues of medicine quality, it would be difficult to build a pharmacy brand on quality. Culturally, Malian pharmacists see themselves as independent business people. Interviews with pharmacists showed that they felt it would be difficult to adhere to franchisor rules and to accept that their businesses would be independently monitored. They were also concerned about being able to trust their business partners and being required to conform to rules set by the franchisor.

In Ghana, CareShop was a pharmacy franchise that struggled for about five years before collapsing.²⁷ The main reasons for failure were the inability of the franchisor to maintain franchise discipline and difficulties in encouraging franchisees to transform their business practices. The franchisor had problems in balancing its franchisees' demands and its own financial needs for sustainability. The pharmacists interviewed who had been CareShop franchisees complained that the model did not quite fit local needs as prices were too high, they did not offer sufficient stock or a desirable product mix, and that the delivery system did not allow them to go to Accra to pick up stock (which they enjoyed doing). The initiative did, however, provide training in record keeping and business training, on which they still drew.

Other business models, such as pharmacy chains and cooperatives, seem promising in the right circumstances. In Malawi's small private sector, pharmacy chains are beginning to appear. Buyers' cooperatives are easier to set up than pharmacy franchises as they require little regulatory or financial investment, but they need discounts on large volumes to work well. This approach has gained a foothold in Mali, where pharmacies sometimes combine to take advantage of wholesalers' promotions, and where those in rural areas cooperate to benefit from joint deliveries. It has yet to be extended to pooled purchasing, however, possibly because many pharmacists order stock almost every day, making coordination with others harder.

Greater use of technology (such as bar codes, radio-frequency identification, electronic procurement, or electronic payment) could benefit product quality, logistics management, and cost. But such initiatives seem hard to launch in the three countries because many of the retailers are simply too small to bear the extra costs. Many wholesalers and some pharmacies interviewed used computer systems to monitor their stock and sales, but few of the chemical sellers/ drug stores/ *dépôts de vente* visited did.

Some retail outlets monitored their sales electronically, but most were paper-based. Similarly, none of the retailers had a system to keep track of batch numbers for recalls. Some wholesalers, too, said that though the products had batch numbers, they did not keep track of shipment destinations.

ACTIONS TO SUPPORT PRIVATE SUPPLY CHANNELS

To support private supply and delivery channels, national and international actors could implement the following actions.

Business and Investors

- *Invest in market-research and data-gathering systems and organizations.*
- *Strengthen pharmaceutical distribution networks* by leveraging the private supply and distribution channels of other sectors (following the examples of Curatio in Ghana or VillageReach in Mozambique) or by creating shared specialized pharmaceutical distribution companies.
- *Invest in franchising models* (only where commercially sustainable), such as accredited drug dispensing outlets in Tanzania to ensure access to affordable, high-quality medicines and pharmacy services.
- *Partner with international pharmaceutical logistics companies* to bring know-how and capital into countries that have difficulties in addressing the problem of fragmented, undercapitalized supply and distribution channel operators.

National Governments

Improving access to high quality medicines

- *Strengthen regulatory authorities for medicines.* In all three countries, the quality of medicines available in the private market is affected by poor government processes for pharmacy inspection and quality testing. Strengthening the financial and technical means of the responsible regulatory authorities can help improve the quality of medicines in circulation.
- *Support public or private health insurance models with medicine coverage* to reduce out-of-pocket spending and stimulate medicine consumption by reducing barriers to financial access.

Supporting manufacturing

- *Use local private supply and distribution channels better*, in terms of professional standards. Tender and donation programs could use local private channels more, for procuring or distributing products.
- *Ensure that the public tender system facilitates and incentivizes participation* of local manufacturers, wholesalers, and distributors, provided they meet quality standards.
- *Promote regional African harmonization of drug-registration requirements and standards at quality-testing facilities.* This would boost entry of high-quality products in new markets and avoid duplicating registration in small markets. The creation of regional quality-testing facilities may reduce current problems with

identifying and retaining trained staff and with funding national quality laboratories.

Stimulating consumer demand for high quality medicines

- *Educate consumers on the importance of quality in medicines.* Civil society groups should raise awareness of consumers' health care options and of the dangers of poor medicines. This will stimulate consumer demand for high-quality medicines and good pharmacy services.
- *Following the example of the Medicines Transparency Alliance (MeTA), governments, the private sector and civil society are encouraged to work together to increase the collection of data on prices, quality, and availability of medicines and ensure that this information is available to the public.*
- *National health systems and regulators can facilitate use of new technologies.* Consumers can already, for example, verify a medicine they have bought by sending a text message with a code from a scratch-off label on the blister. The technology has been tested successfully in Nigeria and several manufacturers provide this service.

Improving the business environment

- *Promote alternative finance services such as cooperative pharmacy banks.* These services could provide lines of credit or small loans.
- *Offer business training for pharmacists and chemical sellers/ drug stores/ dépôts de vente* either as a part of their academic training or their accreditation and licensing. (Many academic pharmacy degree courses spend little time on teaching how to run a small pharmacy, which is after all how most pharmacists earn a living.)

Improving the regulatory framework

- *Offer financial and political support for post-marketing surveillance and pharmacy inspections* as a way to monitor the quality of products in the market.
- *Encourage consolidation of fragmented wholesale markets* by more strictly enforcing quality standards (good distribution practices) for wholesalers.
- *Amend regulatory frameworks to facilitate the introduction of alternative pharmaceutical business models and retail platforms.* These could include buyers' cooperatives, franchises, pharmacy chains, or locations within other businesses, such as grocery stores.
- *Review the incentive structure so as to encourage pharmacists to dispense generic drugs.* One way could be to allow higher margins on generic than branded products or to ensure that reimbursement lists are based on generic products as the default.

International Agencies

- *Assess the impact of international financing, donations, and procurement policies on local distributors and retailers.* This is important because donations bypass local supply and distribution channels. Subsidized drugs may also undermine the profitability of local distribution and so damage the distribution system longer term.
- *Channel donor funds through local private supply and distribution channels.* Tender and donation programs could use local private supply and distribution networks for manufacturing, procuring, and distributing products (where appropriate).

APPENDIX A: HEALTH AND DEMOGRAPHIC INDICATORS IN GHANA, MALAWI AND MALI

Table A1 Health and demographic indicators, Ghana, Malawi, and Mali

Indicators	Year	Ghana	Malawi	Mali
Population, total (millions)	2009	23.8	15.2	13.0
Population growth rate (annual %)	2009	2.1	2.8	2.4
Surface area, sq km (thousands)	2008	238.5	118.5	1240.2
Urban population (% of total)	2009	50	19	33
Population living below the national poverty line (%)	2006	28.5	52.4 (2005)	63.8 (1998)
GNI per capita Atlas method (current \$)	2009	1,190	280	680
Life expectancy at birth	2008	57	53	48
Infant mortality rate (per 1,000 live births)	2006	76	76	119
Maternal mortality ratio (per 100,000 births)	2005	560	1100	970
Prevalence of HIV (% of total population 15–49)	2007	2	12	2
Years lost to communicable diseases (%)	2002	74	89	86
Poverty headcount ratio at \$1.25 per day (PPP) (% of population)	2006	30	73.9 (2004)	51.4
Poverty headcount ratio at \$2 per day (PPP) (% of population)	2006	53.6	90.5 (2004)	77.1

Source: World Development Indicators, various years; WHO Statistical Information, various years.

Table A2 Drugs with stability problems in tropical conditions

Oral solids (tablets)	Oral liquids (syrups)
Acetylsalicylic acid	Paracetamol
Amoxicillin	
Ampicillin	Injections/injectables
Penicillin V	Ergometrine
Retinol	Methylethergometrine

Source: Management Sciences for Health 1997.

Table A3 Comparison of private sector supply and distribution channels, Ghana, Mali, and Malawi

Issue	Ghana	Mali	Malawi
Impact of multilateral pharmaceutical and donations policies			
Price reductions	Affordable Medicines Facility for Malaria (AMFm), reduces prices of antimalarials, which is the largest seller for manufacturers and wholesalers and retailers.	N/A	N/A
Donations			Donations of products that can be manufactured locally. Bypass local supply and distribution networks.
Adherence to World Health Organization prequalification manufacturing and active pharmaceutical ingredient standards	Local manufacturers claim too expensive and undesirable to implement because not cost-effective.	N/A	Local manufacturers claim too expensive and undesirable to implement because not cost-effective.
Business environment			
Financial services	Limited access to credit, financial services for pharma sector.	Reliance on large wholesalers for financing. Limited access to credit, financial services for pharma sector.	Limited access to credit, financial services for pharma sector.
Market information	Limited	Limited	Limited
Trust	Poor. Lack of trust results in vertically integrated supply chains and fragmentation of market.	OK. Some localized Malian business collaborations such as between pharmacies to obtain discounts; wholesaler linkages.	Poor. Manufacturer suspicion of governments, donor community and wholesalers. Accusations of corruption. But collaboration between manufacturers.

Debt	National Health Insurance Scheme slow to reimburse. Pharmacists in debt to wholesalers.	Pharmacists in debt to wholesalers.	Pharmacists in debt to wholesalers.
Local manufacturing			
Local Manufacturing	Yes, several small firms. Government policies supportive.	No. Reliance on imports.	Yes, but struggling due to small private sector, limited central medicine store tenders and no government support.
Products into country			
Wholesaling	Fragmented. Many small players.	Consolidated. Dominated by two large firms competing on delivery services and financing.	Fragmented. Many small players.
Quality of warehousing	Mixed. In some cases lack of storage space and poor storage conditions.	Good among large wholesalers.	Poor. Limited of storage space. Poor storage conditions.
Supply management	Functional.	Poor. Poor transport infrastructure results in delays.	Poor. Poor transport infrastructure results in delays. Difficulties forecasting demand.
Government regulation of prices	No.	Yes.	No.
Quality testing	Yes to grant product market approval. Limited post market surveillance.	Yes to grant market approval. Limited post market surveillance.	Yes to grant market approval. Limited number of tests able to be done. Limited post market surveillance.
Products within country			
Distribution	Limited, provides market for traveling traders.	Overall good.	Limited. Only in 2–3 main cities.
Cost of medicines	Mainly generics. Can have high margins at retail level. Numerous middlemen increase consumer prices.	Limited generics. Mainly brand-name and expensive products	Relatively inexpensive. 90% low-cost generics.

Availability	Some public sector stock outs but National Health Insurance Scheme patients can go to private contract pharmacies. Poor distribution in rural areas can limit access to medicines. Rural chemical sellers struggling financially.	Public sector stock outs. Private sector good but impacted by poor transport infrastructure and stock outs in public sector.	Public sector stock outs. Private sector fair but impacted by poor transport infrastructure and stock outs in public sector.
Retail			
Retail outlets	Pharmacists, chemical sellers. Limited in rural areas.	Pharmacists, <i>dépôts de vente</i> mainly in urban areas. Limited in rural areas.	Few pharmacists or drug stores. Mainly private clinic dispensing.
Problems	High margins. Indebtedness to wholesalers. Limited presence of qualified pharmacist—limits pharmacy services.	Financial difficulties. Supported by wholesalers. Indebtedness to wholesalers.	Little competition. High margins. Small market size.

N/A = information not available

APPENDIX B – GHANA CASE STUDY: ANALYSIS OF PRIVATE SUPPLY AND DISTRIBUTION CHANNELS FOR MEDICINES

CONTEXT^{xxvi}

Located in West Africa, Ghana is bordered by the Burkina Faso, Côte d'Ivoire, and Togo. The population of 23.8 million is growing at an annual 2.1 percent. The country is divided into 10 regions and 166 districts. The population density is highest in the southern and central zones and lowest in the northern zones.

Ghana had a per capita gross national income of \$1,190 in 2009. As of 2006, national poverty head count stood at 28.5 percent, down from 52 percent in 1992.²⁸ However, this poverty reduction has not been equitably distributed across the county, and in both the Upper East and Upper West regions over 70 percent of the population remained impoverished.²⁹ Ghana's economy is predominantly agricultural (small-scale peasant farming) and absorbs much of the adult labor force, followed by a small capital-intensive mining sector and a growing informal sector (small traders and artisans, technicians, and business people).

Ghanaians have a life expectancy of 57 years, an infant mortality rate of 76 per 1,000 live births, and a maternal mortality ratio of 560 per 100,000 live births. Ghana ranks 152 (of 182) in the 2009 United Nations Development Programme Human Development Index. Ghana is on track to meet the Millennium Development Goal of halving poverty by 2015.

Malaria accounts for 40 percent of outpatient attendances, with a high mortality rate (13 percent). Upper respiratory tract infections, tuberculosis, diarrhea (including cholera), yellow fever, and meningococcal meningitis are common. Tuberculosis is a major public health problem; HIV prevalence is under the general epidemic threshold of 5 percent and has been fluctuating between 2. percent and 3.6 percent since 2001. Hypertension, diabetes, chronic renal diseases, cancer, and mental diseases are increasing due to economic development and lifestyle changes, including a rise in alcohol and tobacco use, and substance abuse.

HEALTH SERVICES

Health services are provided by the public sector, the not-for-profit mission sector (Christian Health Association of Ghana and the Muslim Ahmadiyya Movement), and the private sector. The public sector provides about 40 percent of all health services and the mission sector about 30 percent.³⁰

Medicine Procurement

In 2008 the Ministry of Health spent \$31 million (including pooled procurement) on medicines and nondrug items or about 10 percent of total retail sales (estimated at \$300 million).³¹ Public sector procurement and distribution for the public sector are

^{xxvi} Indicators are drawn from table A1, in Appendix A in this document, and are drawn from years 2005-2009.

provided by the central medical store (CMS). But for stock outs or limited access to medicines at regional medical stores and service delivery points, facilities are permitted to purchase products from the private sector.³² In reality, up to 80 percent of the medicines supplied through the public sector are procured from local private distributors/wholesalers.³³

The mission sector also has its own medicine supply and distribution network with a small central warehouse in Accra, the Catholic Drug Centre. But most of the medicines procured by facilities of the Christian Health Association of Ghana come from local wholesalers or the CMS. The Catholic Drug Centre is supplied mainly by IDA of the Netherlands (60–70 percent) and by local wholesalers (about 30 percent).^{xxvii}

Health Insurance

Ghana introduced the National Health Insurance Scheme (NHIS) in 2005. The NHIS covers health care services and medicines. The goal is to provide universal coverage of affordable, high-quality health care. Coverage is free for certain high-risk or economically disadvantaged groups. Wealthy individuals or formal sector employees also have access to private or employer-based insurance that includes coverage for medicines. Despite the introduction of the NHIS, about half the population still is not covered by the NHIS and thus pays out of pocket for medicines. The program has a limited impact on the poor as only 40 percent of those in the lowest quintile have registered. In contrast, 70 percent of those in the highest quintile were enrolled.³⁴ In some cases, NHIS card holders still have to pay for medicines. Approximately 50 percent of the reimbursements made by the NHIS are for pharmaceutical products.³⁵

Some question the long-term viability of the NHIS. Many pharmacists, chemical sellers, and wholesalers complained in interviews for this study that the NHIS is often more than two months late in paying reimbursements and as a result retailers are unable to pay for their stock on time. Some retailers are threatening to stop accepting NHIS patients. Wholesalers are threatening to stop providing goods on credit.

NATIONAL PHARMACEUTICAL MARKET

Data

Data on the pharmaceutical sector and market are quite weak. No formal market research has been undertaken. Some local actors conduct their own informal market studies (by visiting competitor establishments, tracking types of prescriptions, and evaluating where products are sold) but they are often unwilling to share information about their own businesses. The data provided here are estimates from various market participants.

The total market value is estimated at \$300 million.³⁶ This equals an annual per capita pharmaceutical consumption of about \$12. Over-the-counter sales are about 30 percent of total retail sales in value, or about \$90 million.

^{xxvii} Interview with Charles Allotey, Health Access Network, Ghana.

Table B1 Estimated market data on pharmaceutical industry, Ghana, 2008

Item	Data
Total market at retail value	\$300 million
Prescription drugs total (70% of total)	\$210 million
Annual growth rate	6%–8%
Pharmaceutical consumption per capita	\$12
Retail sales of domestic manufacturers (30% of total sales)	\$90 million
Market share of generic products (value) ^a	80%

a. Interview with Dr. Addo, PMAG, Ghana.

Source: Seiter and Gyansa-Lutterodt 2008. No solid market research. Estimates gathered from market participants.

Regulation

The Food and Drugs Board (FDB) controls the manufacture, import, export, distribution, use, and promotion of pharmaceuticals in Ghana. It has a staff of 235 and carries out inspections of manufacturers, post-marketing surveillance, and advertising monitoring. The FDB maintains a quality-testing laboratory, which employs about 35 technical staff. The laboratory reportedly operates according to good laboratory practice standards. It tests random batches of high-risk consignments of imported medicines, samples taken in good manufacturing practice inspections and in post-marketing surveillance testing, and samples provided for the market-registration process. The laboratory suffers from a shortage of space (FDB is building new facilities), qualified staff, and funds for operations, equipment, and staff.

An important aspect of FDB's work is to monitor the quality of pharmaceutical products entering and circulating within the country. But importers are sometimes able to "influence" customs officials so that goods are cleared before they can be tested. Substandard and counterfeit products may also enter the market through poorly controlled borders and entry points where the FDB has no presence. The FDB claims that Ghana has less of a problem with counterfeits than other countries in West Africa but no comparative data are available.

The agency conducts few post-marketing surveillance studies given a limited budget. One study, recently conducted on antimalarials, found that 15 percent of all antimalarials were substandard, but it did not find any counterfeits. Several products did not have valid drug registration.^{xxviii} However, in July 2009 fake Coartem tablets, with no active ingredients, were discovered in Kumasi.³⁷ FDB reports highlight poor transport and inappropriate warehousing and retail storage facilities as major reasons for substandard medicines. There are also reports of a decline in quality between product registration tests and general product retail sales. These are difficult to identify without continual inspection and quality testing.

The FDB does not have a system for regulating pharmaceutical distribution and there is an absence of national legislation governing this aspect of the supply and

^{xxviii} Interview with Rev. J.Y. Martey, Deputy Chief Executive, FDB.

distribution channel. The traceability of drugs is very poor. Some drugs are shipped without a waybill and go astray. Throughout the distribution chain, wholesalers and distributors maintain records of quantities of medicines but not their batch numbers. Product recall announcements are made on television and radio but because batch numbers are not kept, retailers do not know if they have sold the suspect product batches.

The national Pharmacy Council is responsible for licensing and inspecting licensed pharmacies and chemical sellers. However, it only has about 32 inspectors nationwide with 12 in head office. There are seven offices throughout the country with two or three inspectors and one vehicle per region. As a result, coverage is minimal. The Pharmacy Council inspects about 190 of a total of 1,000 establishments^{xxix} a year.^{xxx}

PRIVATE PHARMACEUTICAL MARKET

Manufacturing

Ghana has a small pharmaceutical manufacturing sector with about 38 companies. Eleven are active manufacturers, of which six are significant national producers. The most prominent players are Danadams, Ernest Chemists, LaGray, and Kinapharma. The sector employs 5,000 people and supplies about 30 percent of Ghana's total pharmaceutical consumption. The private sector suppliers are growing at an estimated 6–8 percent a year in line with population growth. They are expanding their market by supplying a growing private sector and providing products to public sector health facilities more regularly.

Most manufacturers focus on producing basic over-the-counter drugs, although a few manufacture specialized products. Kama Group manufactures syrups, Danadams has the ability to produce ARVs, and several companies produce antimalarials. However, none has diversified product lines that include tuberculosis drugs, neglected tropical diseases, or cardiovascular illnesses. Government policy encourages local manufacturing by protecting 44 drugs from imports. Also, 66 of the 200 basic materials required for production are exempt from value-added tax (12.5 percent) and the NHIS levy (2.5 percent). With all local manufactures producing the same basic over-the-counter products, this segment is highly competitive. One study from 2005 suggests that manufacturers' profit margins range from 10 percent to 40 percent. Insiders suggested that this number was closer to 50 percent.

Although there is a relatively active local manufacturing sector, imported products from China and India are more price competitive. Local manufacturers have difficulty moving up the product value chain and reaching good manufacturing practice and prequalification standards, for several reasons:³⁸

- Value-added tax on many manufacturing materials; on exempt products, time-consuming bureaucratic procedures to claim back taxes.
- High cost of borrowing (annual interest rates up to 30 percent) and limited access to funds to invest in industrial upgrading.

^{xxix} This includes retail pharmacies and wholesale and retail pharmacies.

^{xxx} Interview with E.Y. Opoku-Adjei, Pharmacy Council, Ghana.

- High utility costs (electricity, water, and transport).
- Inconsistent supply of utilities (water and electricity failures).
- Difficulties sourcing active pharmaceutical ingredients (fluctuating prices, hard to assess quality).
- Problems in complying and documenting adherence to good manufacturing practice standards and protocols, providing documentation of validation and calibration of machinery, and documenting the traceability of raw materials and to point of sale.
- Limited market research and unsophisticated business strategies (usually based on what they have always done and what seems to work in the market, rather than patterns of disease or market research data).^{xxxii}
- Few qualified staff.
- Limited transport infrastructure and administrative barriers to access regional markets.
- Antimalarial drug portfolio threatened by the Affordable Medicines Facility for Malaria (see the next section).

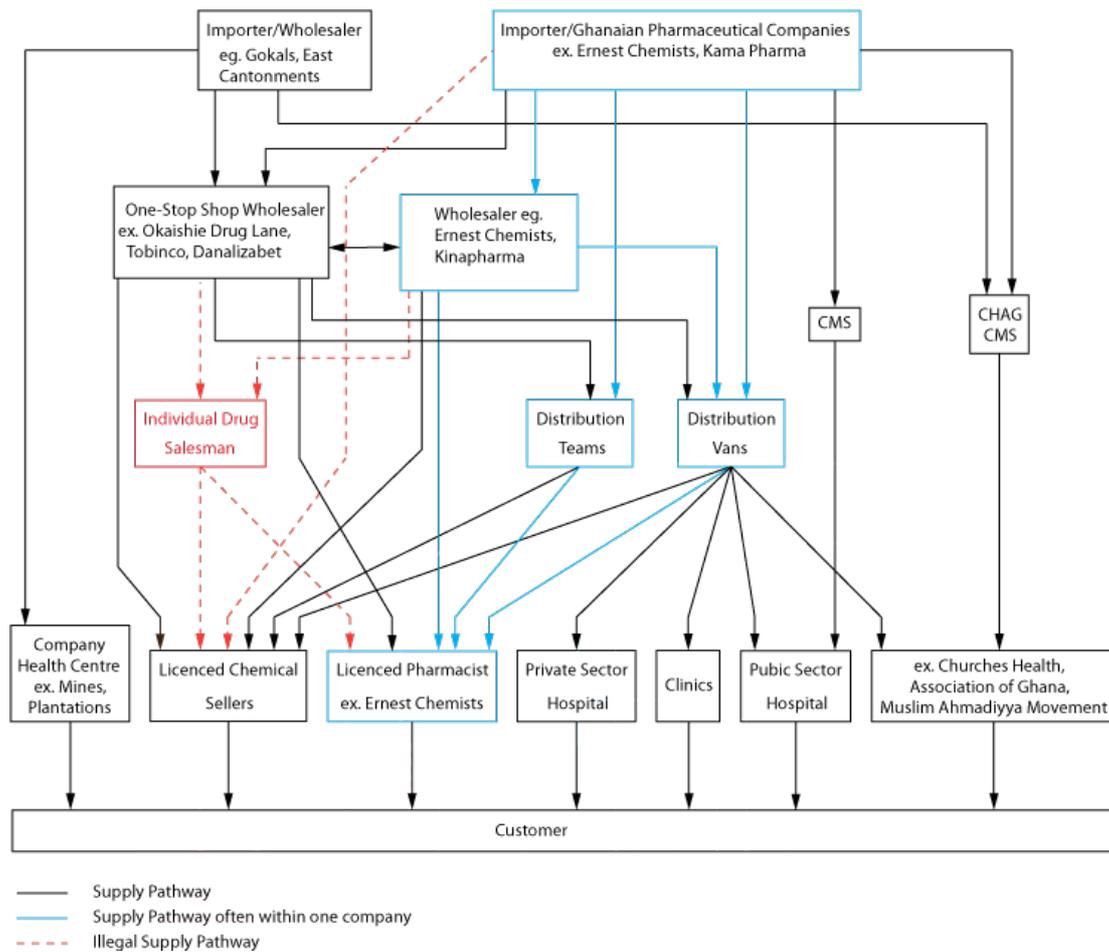
Flow of Goods into and within Ghana

The supply and distribution network in Ghana is chaotic and fragmented (figure B1). In addition to manufacturer/wholesalers, there are about 60 importers/wholesalers that import and sell to one-stop-shop wholesalers and about 166 national wholesalers.^{xxxii} Multinational companies often use several agents, which have nonexclusive distribution rights. For example, Eli Lilly uses both Kama Pharma and Reiss and Co. to distribute its products. Agents may also be manufacturers or wholesalers. Some wholesalers may also be importers, manufacturers, distributors, and retail pharmacies. Businesses often begin as retail outlets and then apply for wholesale licenses, and eventually act as an importer and then move into manufacturing.

^{xxxii} Interviews with Vicdoris, Pharmaceutical Manufacturers Association of Ghana (PMAG), La Gray, Ghana.

^{xxxii} Wholesalers must apply to the Pharmacy Council to obtain a wholesaler license. To obtain a license, companies must register with the registrar general, have a pharmacist to manage the distribution facilities, and have a total floor space of more than 36 square meters. Licenses must be renewed every January.

Figure B1 Flows of pharmaceutical products within Ghana



The high number of small pharmaceutical trading businesses with a limited market share (table B2) and intermediaries in the supply and distribution channel limits transparency and makes it difficult to ensure product integrity. It also suggests low efficiencies in private distribution. In 2008, Gokals-Laborex (a Ghanaian wholesaler of Indian descent in a joint venture with Laborex, part of the French group Eurapharma) bought out several local competitors.

This caused uproar as local wholesalers complained that Gokals unfairly acquired exclusive licenses with European companies from local manufacturers who had maintained these relationships for years. Local wholesalers complain that Gokals-Laborex has an unfair advantage because it has access to a continuous supply of high-quality European products. Using companies such as TNT or DHL it receives products within 24 hours, whereas other wholesalers/importers receive products transported by sea and must establish lines of credit with local banks, which takes time. The Ghanaian wholesalers' complaints reflect acknowledgment of their weak competitive position and may encourage them to take measures to become more efficient.

Table B2 Estimated annual sales and market share for major wholesalers

Wholesaler	Estimated sales (\$, millions)	Market share (%)
Ernest Chemists	13	11
Kama	8	7
Unichem	5	4
Gokals	5	4
Osuns	4	3
Western Pharmacy	2	2
Kinapharma	3	3
Geo Pharmacy	2	2
Baseline	1	1
Other ^a	74	<1
Total Market	117	100

a. Each of the other wholesalers has less than 1 percent market share.

Source: Center for Pharmaceutical Management 2003. No solid data but estimates confirmed by interviews.

Price structure. Some wholesalers position themselves as a one-stop shop (such as Class Pharma and Tobinco) and buy from several other importer/wholesalers such as Kinapharma, Ernest Chemists, Litap, or MNG. One-stop-shop wholesalers also buy products directly from importer/agents (such as Gokals and Osuns) and local manufacturers. Their main criteria for purchasing products from suppliers are price; they do not have long-term contracts with suppliers. Importer/wholesalers sell to one-stop-shop wholesalers at a 5–10 percent discount on the importer/wholesaler price. One-stop-shop wholesalers then add 5–10 percent to their purchase price for sales to retailers. Importer/wholesaler and one-stop-shop wholesaler prices may be the same or in some cases one-stop-shop prices may be more expensive.

Table B3 Summary of private supply chain margins, Ghana

Actor	Margin (%)
Manufacturer	10–50
Wholesaler	10–30
One-stop-shop wholesaler	5–10 ^a
Retailer	30–200

a. Wholesaler sells to one-stop-shop wholesaler at a discount of 5–10 percent. Often the one-stop-shop wholesaler then adds 5–10 percent to the importer/wholesaler price for sales to retailers.

Source: Author interviews.

When there is a large amount of product in stock that needs to be liquidated, wholesalers offer deals to retail customers such as buy 10 of product X and receive 1 of Y free. When products near their expiry date wholesalers push sales by offering a 50 percent discount.^{xxxiii} Wholesalers often offer discounts to customers that buy in bulk. For example, if customer buys 5–10 cartons they receive a 10–15 percent discount.^{xxxiv}

^{xxxiii} Interview with pharmaceutical wholesaler, Takoradi, Ghana.

^{xxxiv} Interview with chemical seller in Swedru, Ghana.

Wholesalers and manufacturers promote their products by advertising on television and radio but since patients are interested in inexpensive products, most marketing efforts are targeted at doctors. Many wholesalers and manufacturers have representatives who promote their business to hospitals, pharmacists, and chemical sellers. Retailers may receive promotional material (pens, brochures, radios, TVs, and refrigerators) if they buy large quantities (orders of more than \$700–\$1,000).^{xxxv} Wholesalers and manufacturers may also host workshops for doctors, pharmacists, and chemical sellers. Doctors may receive incentives (payments) from suppliers to prescribe their products.^{xxxvi} Insiders suggest that hospitals inflate prices in the tendering process. The difference between the wholesaler's invoice and the tender purchase price goes to doctors as a payment for prescribing the wholesaler's products. A similar process reportedly occurs with hospital procurement agents.

Distribution. Larger importer/wholesalers and manufacturer/wholesalers have integrated distribution businesses with fixed distribution points in several regions. One-stop-shop wholesalers buy from several importer/wholesalers and manufacturer/wholesalers. Small specialized wholesalers such as those located in the Okaishe area of Accra do not offer delivery services and retailers pick up products themselves. Large wholesalers of all types deliver products via distribution vans or teams, or customers pick up stock from the wholesaler themselves. Vans only distribute products to customers. "Teams" refers to vans with a driver and wholesaler representative that sell various brands carried by the wholesaler on credit or a cash-and-carry basis, mainly in rural areas. The employees earn a salary and earn a commission if they achieve their targets. Orders can be placed with the vans. For one branch of a large wholesaler in Takoradi, teams sell about 70 percent of the total sold.^{xxxvii}

Retail

Pharmacies and Chemical Sellers: Ghana has just over 1,000 retail pharmacies: about 700 licensed pharmacies and 328 wholesalers with a license to retail products. There are also 11,159 chemical sellers in Ghana (end-2007 numbers). All retailers are required to obtain a license to operate.

Chemical sellers sell a limited range of products including antimalarials and analgesics and they must keep a minimum distance of 1 km in radius from any other existing retail outlet. Both of these rules are usually ignored as several chemical sellers are often found near pharmacies, and chemical sellers are known to stock products not on their approved list of products (such as antibiotics). To obtain a license, chemical sellers must have a basic education level (GSCE), have passed a basic knowledge and skills test, and have a minimum room size of 12 square meters.

Pharmacists and chemical sellers often run their businesses alongside their regular jobs. Some pharmacists work full time in hospitals and visit their pharmacies only in the evening. Chemical sellers are at the same time farmers, teachers, nurses, and housewives. As a result, the person with knowledge of the pharmacy business and profession is rarely present to provide the necessary pharmacy services to customers.

^{xxxv} Interview with pharmaceutical wholesaler, Swedru, Ghana.

^{xxxvi} Interview with pharmaceutical wholesaler, Takoradi, Ghana.

^{xxxvii} Interview with pharmaceutical wholesaler, Takoradi, Ghana.

This has an important impact on substitution of generics but also the value of the service provided by pharmacies. In rural areas it is difficult to find people with basic education qualifications and stores are often run not by the license holder but by local staff. As a result, the Pharmacy Council intends to introduce the District Pharmacy Programme in which one pharmacist can supervise more than one pharmacy shop. Pharmacy technicians can be employed to run each store.

Table B4 Regional distribution of private pharmaceutical outlets, Ghana

Region	Type of institution				Total	Licensed Chemical Seller
	Manufacturing Wholesale Pharmacy	Wholesale Pharmacy	Wholesale and Retail Pharmacy	Retail Pharmacy		
Ashanti	1	35	62	152	250	1,712
Brong Ahafo			28	2	30	1,723
Central		1	14	13	28	1,479
Eastern	1	1	29	14	45	1,822
Greater Accra	10	114	165	481	634	1,822
Northern		5	3	2	10	723
Upper East			2	2	4	167
Upper West			3	2	5	178
Volta			7	10	17	992
Western		10	15	22	47	1,485
Total	12	166	328	700	1,206	11,159

Source: Ghana Pharmacy Council as of December 31, 2007.

Price structure. Typical margins in pharmaceutical retailing (pharmacists and chemical sellers) are 30–40 percent but can also go up to 200 percent depending on the product, its price, and its sales volume. To increase customer traffic, all pharmacies and chemical sellers in this study sold complementary products, including machetes, mosquito nets, cosmetics (shampoos and soaps), diapers, and sanitary pads. A contact at the Pharmacy Council suggested that many chemical sellers and pharmacies have suspended business activities because they found that it was not profitable.^{xxxviii}

Chemical sellers. Rural chemical sellers are often the only source of medicines in their town. They obtain supplies from a variety of sources. They may obtain stock from the wholesaler in the nearby town, they travel to Okaishe (a place in Accra with many wholesalers), or they buy from the traveling drug salesman. Sometimes, because some wholesalers have minimum orders that are larger than what chemical sellers can buy, pharmacies become wholesalers catering to small orders. Chemical sellers often shop around for the best prices and buy as much stock as they can afford at the time.

One chemical seller in a village one hour from Accra explained that he bought stock for about \$100 per month. Chemical sellers in more rural areas buy stock about once a month from up to six wholesalers. In contrast, pharmacists in urban areas (Cape

^{xxxviii} Interview with Pharmacy Council, Ghana.

Coast) may order stock on a weekly basis for a monthly total of about GHC 10,000 (or \$7,070): 60 percent from wholesalers, 30 percent from the manufacturer, and 10 percent from independent drug salesmen.^{xxxix}

All the chemical sellers mentioned that they bought stock from traveling salesmen. Since wholesalers do not deliver outside their towns and because retailers (pharmacists and chemical sellers) buy from several wholesalers, it is more convenient to buy from salesmen, even though they are more expensive. Traveling salesmen are quite profitable. One told that he made about GHC 800–1,200 (\$560–\$840) profit a month.^{xl} He loads his van with goods he buys from wholesalers in Okaishe and makes about three week-long trips to the Central and Western regions a month. Like other suppliers and retailers, they sell on credit and their biggest problem is collecting debts. They resort to tactics such as taking an indebted retailer's medicine stock or television as collateral until their debts are paid.

The price-setting process in rural areas often seems quite arbitrary, and chemical sellers say they aim to just sell the products for more than they bought them.^{xli} Pricing seems to take into account the purchase price (from the supplier) and how much the market will bear, but not their additional variable and fixed costs (such as rent, electricity, and transport). For example, one village chemical seller explained that he just ensures that he sells his product for more than he buys it. "If I buy the product for GHC 1 then I sell it at GHC 2. If I buy it at GHC 0.5 then I sell it at GHC 0.65."^{xlii} Another said that if he buys a drug at GHC 1 he sells it for GHC 1.20. However, the most expensive medicine in the store is the blood tonic, which he buys at GHC 6 and sells at GHC 8.^{xliii} Thus, cheaper products he sells at 20 percent profit and more expensive ones at 33 percent profit. Another explained that he just tries to make a GHC 40 (\$28) profit: he tries to sell his GHC 400 of stock for GHC 440.

CHALLENGES

- Fragmented and inefficient distribution network.
- Multiple supply chain layers—increasing consumer prices.
- Poor storage and delivery practices.
- Manufacturing: limited value-added products and problems meeting good manufacturing practice or prequalification standards.
- Pharmaceutical businesses have poor access to financing.
- Limited support for drug testing and pharmaceutical business inspections.

^{xxxix} Interview with pharmacist in Cape Coast, Ghana.

^{xl} Interview with independent drug salesman, Ghana.

^{xli} Chemical sellers in Ajumako, Entumbil and Accracama, Ghana.

^{xlii} Chemical seller in Accracama, Ghana.

^{xliii} Chemical seller in Ajumako, Ghana.

INTERVIEWS

Dr. Paul Lartey, President and CEO, LaGray Pharmaceuticals
Dr. Alexandra Graham, COO, LaGray Pharmaceuticals
Mr. T.T.L Bernasko, Executive Chairman, The Bernswett Co. Ltd.
Mrs. Martha Gyansa Lutterodt, Head of Ghana National Drugs Programme
Rev. J.Y. Martey, Deputy Chief Executive, FDB
Mr. E.Y. Opoku-Adjei, Manager of Education and Training, Pharmacy Council
Dr. Mike Addo, President of Kama Pharmaceuticals and President of the
Pharmaceutical Manufacturers Organization of Ghana
Mr. Lebene Soga, Pharmaceutical Representative, Krka Pharmaceuticals of Slovenia
Mr. Charles Allotey, Health Access Network
Ms. Doris Attafua, Managing Director, Vicdorix Pharmaceuticals Ltd.
Mr. Nelson Offei-Kumi, Independent Drug Salesman

Representatives of the following wholesalers:

Ernest Chemists Wholesalers, Greater Accra
Class Pharma, Swedru
Kinapharma, Takoradi
Kojach Pharma, Takoradi
Tobinco, Takoradi

Pharmacists in Cape Coast

Chemical sellers in Accra, Ajumako, Entumbil, Swedru, Accracama, and Takoradi.

APPENDIX C: MALAWI CASE STUDY: ANALYSIS OF PRIVATE SUPPLY AND DISTRIBUTION CHANNELS FOR MEDICINES

CONTEXT

Located in southeastern Africa, Malawi is bordered by Mozambique, Tanzania, and Zambia. The population is estimated at 13.6 million people, growing 2 percent a year. Malawi has a fairly high inequality in income distribution, with a Gini coefficient of 0.38. Poverty was measured at 54 percent of the population in a household survey (2004–05), staying largely unchanged since the previous household survey in 1997–98. HIV/AIDS, coupled with poverty and food insecurity, constitutes the major long-term human development challenge.

Human development indicators remain very weak. The 2007/08 United Nations Development Programme Human Development Index ranks Malawi 164 of 177 countries. The maternal mortality ratio is 984 per 100,000 live births and is one of the highest in the world. Adult literacy for men is 75 percent while that for women is only 54 percent. A third of the population still has access only to unsafe water.

Estimates indicate that 12 percent of adults (15–49 years) are living with HIV. Tuberculosis prevalence has doubled largely due to HIV infection, with high mortality rates. Malaria is the most common reported cause of morbidity and mortality in both adults and children. Schistosomiasis, trypanosomiasis, onchocerciasis, leprosy, and bacterial pneumonia are also common. The health sector previously focused on communicable diseases. There is, however, a growing awareness of the increase of noncommunicable diseases such as hypertension, diabetes, cancer, asthma, mental health problems, and oral health.

There is insufficient information on noncommunicable diseases to determine trends in magnitude and to monitor morbidity and mortality. However, there are indications from clinical settings that cases of diabetes, hypertension, and cancer are on the increase.

HEALTH SERVICES

The health care delivery system consists of services provided by the Ministry of Health (60 percent), the Christian Health Association of Malawi (CHAM; 37 percent), and the Ministry of Local Government (1 percent). Other providers, such as private practitioners, commercial companies, army, and police provide 2 percent of health services.³⁹ Per capita expenditure on health is only \$15 (in 2006),⁴⁰ and there is no social security system for health care.

Malawi has good coverage of health facilities with 80 percent of the population living within a 5 kilometer radius of a facility. Unfortunately, many Malawians have difficulty accessing these facilities due to poor road networks, especially in rural communities, and poor communication systems.⁴¹ In addition, just 9 percent (54 of 585) government and mission health facilities are capable of providing the essential package of health services on-site. This arises because of supply stock outs, a lack of

basic utilities (water, electricity, phone and radio communication), and especially a lack of trained health workers.⁴²

CHAM receives annual financial support from the Ministry of Health for paying salaries. CHAM also obtains funding from a variety of local and foreign sources, including charging user fees for a wide range of its health services and from drug sales. Private hospitals and clinics are emerging as a significant provider of health services. They are increasing in number and are an important source of medicines in rural areas. Around 18 percent of all consultations are being done outside Ministry of Health and mission facilities.⁴³ More than half of patients who go to government facilities do not receive adequate drugs or treatment and end up going to private providers.⁴⁴

A large share of Malawi's health spending is covered by development partners—around 70 percent.⁴⁵ In terms of drug procurement, health service providers procure essential medicines from different sources in both developed and developing countries. Funding agencies set conditions for procurement that influence the selection of suppliers. In volume terms, the majority of drugs consumed in the public and private sectors appear to be sourced from generic manufacturers in the developing world.

Human Resources

A lack of qualified human resources is a significant problem in all areas of the health system. This has a serious impact on the private pharmaceutical supply chain as there are currently only 30 practicing pharmacists in Malawi. Most are concentrated in Lilongwe and Blantyre. Until recently, there was no national pharmacy-training program. The year 2010 will see the first graduating class of eight pharmacists trained in Malawi. Prior to this Malawians had to seek training abroad or employ foreign pharmacists. Many local pharmacists are Zimbabwean or Indian.

Health Insurance

The public sector offers free health services and medicine although maternity care, private wards at central and district hospitals, and some outpatient departments charge patient fees. The not-for-profit private sector (mission hospitals, nongovernmental organizations, and CHAM) offer services and medicines for a small fee. Private health care is growing due to limited public sector resources that are spread thinly.

The health insurance industry in Malawi is underdeveloped. There is no compulsory health insurance even for those in public sector employment. Since 2000, a few private health insurance schemes have been established (OASIZ Medical Aid and Medical Aid Society of Malawi, MASM – see box C1). Some parastatals and some firms have corporate health plans that they operate themselves or contract out to MASM to administer. Spending on medicines remains low: about 10 percent of MASM's health expenditure was spent on drugs (2004–05).⁴⁶

OVERALL PHARMACEUTICAL MARKET

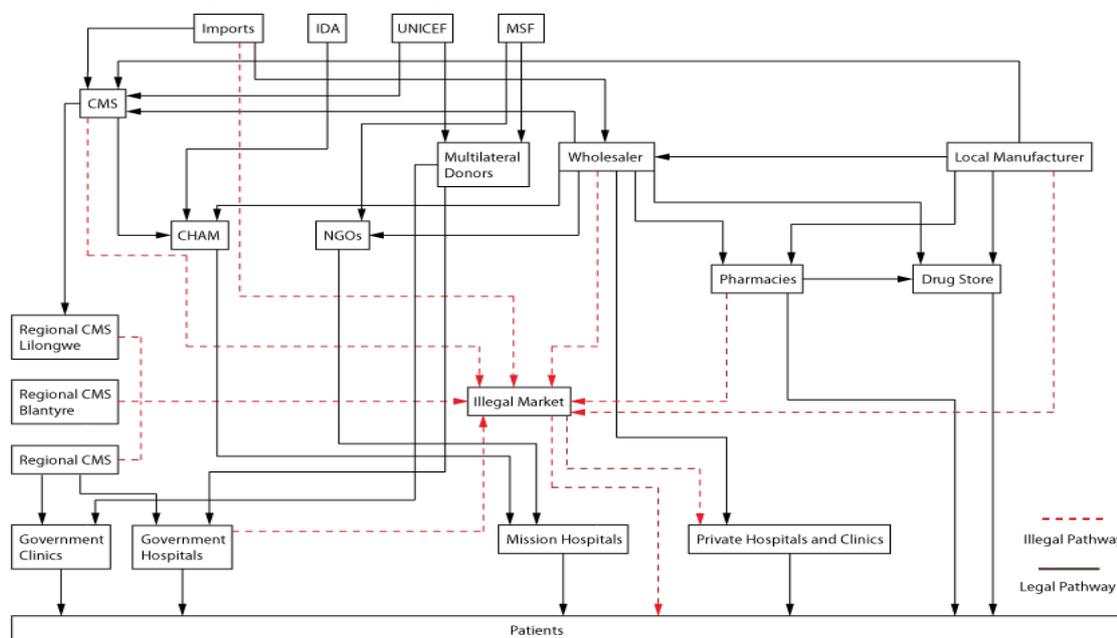
Few data are available on the size of the pharmaceutical market. It is clear that the central medicine store (CMS) is the largest purchaser of medicines in the country. However, reports on the amount it purchases vary from \$10 million to \$100 million.^{xliv} This may account for somewhere between 70 percent and 90 percent of total annual pharmaceutical consumption.

Public and Mission Sector Procurement

The CMS supplies medicines to public health facilities (figure C1). It is well known that the CMS is plagued by institutional, management, and financing problems. Government facilities operate on an “IOU” basis because of the unpredictable release of funds by the Treasury. The CMS is often in arrears. It also suffers from a lack of qualified staff, poor planning, poor logistics, and weak support systems.⁴⁷ As a result, the health system suffers from chronic stock outs.

Annual public procurement is done through international competitive bids. Annual tenders are usually granted to Mission Pharma (a Danish logistics and medicines supplier, getting 50 percent of tenders) and to local wholesalers (such as Worldwide and Pharmavet Ltd.) that have links with Indian generics companies. There are also about three or four emergency tenders a year, which are granted to local wholesalers and on occasion to local manufacturers (such as PharmaNova). The Public Procurement Act reflects a deliberate government policy to encourage domestic manufacturers or suppliers to supply goods to the government. However, in practice local manufacturers complain that the act is not applied.

Figure C1 Flows of pharmaceutical products within Malawi



^{xliv} A wholesaler that regularly supplies to the CMS estimates it at \$75 million medicines for annual and emergency tenders, tuberculosis medicines and the under-five vaccine program..

In addition to public sector procurement, several parallel pathways exist, including the United Nations Children’s Fund (UNICEF), the GFATM, U.S. Agency for International Development, and PEPFAR. Products purchased by these multilateral donors for tuberculosis, malaria (at least \$10 million), HIV (about \$30 million), and vaccines (\$5 million) are not procured by or delivered to the CMS.^{xlv} Instead these products are procured by logistics and supply outfits such as UNICEF and IDA and warehoused and delivered to CHAM and other mission hospitals through companies such as SDV. Occasionally, the CMS procures medicines (essential medicines, vaccines, antimalarials, HIV medicines) from UNICEF.

The CHAM-affiliated health facilities, private hospitals, and nongovernmental organizations are not bound by government procurement regulations. CHAM procures the bulk of its essential drugs through IDA and the CMS. Non-governmental organizations either procure from local wholesale distributors or import directly.

Private hospitals, on the other hand, procure medicines from the private sector. They do not usually abide by Ministry of Health policies in procurement of medicines—that is, procurement through tenders or procuring generic medicines.

Value of Pharmaceutical Sector

By adding together the estimated CMS (\$20 million–\$75 million: medicines for annual and emergency tenders, tuberculosis medicines, and the under-five vaccine program), parallel pathways (\$45 million), and the private market (\$4 million–\$5 million), the total pharmaceutical market is estimated at about \$110 million. This suggests that annual pharmaceutical consumption is about \$5–\$9 per person. Local manufacturers suggest that there are about 3 million economically active people.^{xlvi} Local actors report that national pharmaceutical consumption is growing, though very slowly.^{xlvii} We estimate this at the rate of annual population growth: 2.5 percent.

Table C1 Estimated market data on the pharmaceutical sector, Malawi, 2009

Item	Data
Total CMS budget on pharmaceuticals	\$20 million–\$75 million
Value of parallel pathways	\$45 million
Value of private market	\$4 million–\$5 million
Per capita annual pharmaceutical consumption	\$5–\$9
Market share of generics in national pharmaceutical market	95–99%

Source: Author interviews.

^{xlv} Interview with UNICEF, Malawi.

^{xlvi} Interview with PharmaNova, Malawi.

^{xlvii} Interview with MPL Ltd., Pharmavet, PharmaNova, Malawi.

Reliance on Imports

Although there is some local pharmaceutical manufacturing, Malawi relies on imports for 90 percent of pharmaceutical products. They are mainly imported from India but are also sourced from within the region (Kenya, South Africa, Tanzania, Zambia, and Zimbabwe). Generics account for 99 percent of products on the market.

Regulation

The Medicines and Poisons Board regulates the pharmacist profession and the manufacture, import, sale, and use of medicines in Malawi. It has a staff of 12 inspectors that license and carry out inspections of private pharmaceutical premises, including new foreign suppliers, pharmacies, drug stores, wholesalers, doctors' clinics with dispensing licenses, and manufacturing plants. It maintains a quality control laboratory that conducts tests for product market registration and some post-marketing surveillance.

The Medicines and Poisons Board faces numerous difficulties including:

- *A lack of resources to properly test all samples.* In Malawi, the drug registration process requires six tests; however, the laboratory can only do four.^{xlviii} Government laboratories report that they test between 600 and 800 samples a year.^{xlix} Only about 2 percent of all drugs tested are rejected.¹
- *Donated products and products procured through parallel pathways are not registered or regularly quality tested.* Before July 2009, the CMS imported products without market registration. These products were never submitted for quality testing. This practice was supposed to be phased out by 2010.
- *Pharmacists regularly order and sell products without market approval from abroad for clients.* Doctors prescribe or patients ask pharmacists for products that are not registered. This is in part because Malawi is a small market for which it is not cost-effective for companies to register products.

With assistance from Management Sciences for Health, since 2008 the Pharmacy, Medicines and Poisons Board of Malawi strengthened its capacity to conduct inspections and monitor medicines quality, by prioritizing areas that are feasible with available resources, such as inspecting ports of entry. It established post-marketing surveillance and inspection of medicines at four ports of entry. A total of 38 percent of 146 consignments inspected at port of entry failed inspection for various reasons: of 157 medicine samples that were collected from 101 private premises, only 2 percent failed laboratory tests and were removed from the market. All this was paid for from the Pharmacy, Medicines and Poisons Board regular budget.^{li}

^{xlviii} Interview with Medicines and Poisons Board, Malawi.

^{xlix} Interview with Medicines and Poisons Board, Malawi.

¹ Interview with Medicines and Poisons Board, Malawi.

^{li} Management Sciences for Health, personal information

Growing Informal Sector

The informal sector in Malawi is reportedly growing, though no reliable data are available. The reasons for such growth are numerous and include poverty in rural areas and lack of knowledge about the effects of substandard medicines. In addition, stock outs in the public sector, which some observers suggest occur about 40 percent of the time,^{lii} and a high cost of medicines in the private sector are drivers of demand in the informal sector. Leakages from the CMS are common. They seem to occur at the level of CMS warehouses or public health facilities. A Ministry of Health report noted that leakages occur at various levels, including the Ministry of Health, CMS, regional medical stores, district hospitals, health centers, in transit between these points and at ports of entry into Malawi.⁴⁸ Products marked for government use have been found in private clinics and markets.^{liii}

Products also move from the private sector into the informal sector as small wholesalers use their import licenses to supply illegal drug sellers. Employees at pharmacies and private clinics may also sell products to informal sector traders. Fines on illegal drug vendors (MK50,000 or \$362) are reportedly too low to be a deterrent.

PRIVATE PHARMACEUTICAL DISTRIBUTION CHANNEL

As the CMS purchases such a large portion of total pharmaceutical consumption, the private sector is small and underdeveloped. The market is very price sensitive and businesses are high volume, low margin. The private sector is estimated to be worth about \$4 million–\$5 million, including CHAM.^{liv}

Local Manufacturers

Malawi has four local manufacturers: PharmaNova Ltd., Kentam Pharmaceuticals Ltd., Malawi Pharmacies Ltd., and SADM Pharmaceuticals Ltd. Local manufacturers produce about 140 products, including essential medicines, though local manufacturers produce less than 5 percent of the country's needs.^{lv} Most of their business is limited to the private sector, though they are occasionally granted small CMS emergency tenders worth about \$10 million.

Although manufacturers have recently made investments in their factories (\$7 million), none has attained WHO prequalification standards and three of the companies are often idle. Malawian manufacturers face similar problems to those of other African manufacturers, including:

- Difficulties forecasting demand and managing manufacturing pipeline due to CMS tender process.
- Limited access to credit and foreign exchange.

^{lii} Interview with UNICEF, Malawi.

^{liii} Interview with Medicines and Poisons Board, Malawi.

^{liv} Interview with Mr. Shaw, Pharmavet, Ltd., Malawi.

^{lv} Interview with Colin Patrick, PharmaNova, Malawi.

- Inland country reliant on poor transport infrastructure from Mozambique or South Africa and long delays in port.
- Fluctuating costs of active pharmaceutical ingredients.
- High cost of meeting product manufacturing quality standards.
- High total costs (raw materials, transport, storage) invested in anticipation of receiving tenders.

Wholesalers

Structure. In recent years (since 2005), there has been a rapid increase in the number of wholesalers. There are about 22 wholesalers, of which six are active. The active companies focus either on supplying the CMS (such as Worldwide) or on targeting private pharmacies, drug stores, clinics, and hospitals (such as Pharmavet Ltd., Chemicals & Marketing Ltd.). They mainly supply generic products from India and other African manufacturers (in Kenya, Tanzania, and Zimbabwe), but a few focus on branded products from Europe (Chemicals & Marketing Ltd.). The smaller, less active companies import products for specific business deals and emergency tenders.

Because Malawian consumers' purchasing power is limited and the CMS policy is to buy cheap generics, wholesaling is a high-volume, low-margin business. The main products are generics and consumables (gloves and syringes, for example). Wholesalers that previously focused on brand-name products, such as Chemicals & Marketing Ltd., are now looking to import new lines of generic products from India. Many local wholesalers and manufacturers would like to grow their business with the CMS as a way to increase volumes.

Challenges. Wholesalers face significant supply chain management challenges. As the CMS is the largest purchaser of medicines in Malawi, CMS stock outs and emergency tenders have a significant impact on other actors in the supply chain system. For Malawian manufacturers and wholesalers the award of emergency tenders is potentially lucrative but also makes the management of supply chains difficult. CMS emergency tenders have a four-week time to delivery. Given transport delays to Malawi (up to eight-week transit times from port in Beira, Mozambique), wholesalers and manufacturers must invest in anticipation of being awarded tenders. Uncertainty in demand forecasting results in high costs. Holding stock is expensive. One successful wholesaler claimed that he maintained stock worth \$500,000–\$600,000 in the warehouse. However, of the 300 products stocked, 50–60 were in short supply.^{lvi} Wholesalers may have no stock available for sale, or stock held for too long without a buyer may expire. In these cases, wholesalers often sell goods to each other and may divert sales from the private sector to the public sector.

Other challenges include managing customer debt. Wholesalers sell on 30-day credit, though they often extend this to 60, 90, or 120 days. Many wholesalers complain about the failure of customers to pay on time.

Since most pharmacies are in urban areas, delivery networks to rural regions are limited. Most wholesalers have established two offices, in Blantyre and in Lilongwe. Wholesalers in Blantyre use their own vans to supply their Lilongwe branches and to

^{lvi} Interview with pharmaceutical wholesaler, Malawi.

make deliveries within urban areas. Pharmacists in urban areas order stock two to three times a month. Monthly orders are worth about MK200,000–MK400,000 (\$1,448–\$2,896). Customers in rural areas either pick up supplies from the wholesaler directly or wholesalers ship products using Fedex or the local bus service.

Price structure. Wholesalers’ margins range from 10 percent to 30 percent depending on the product. For sales to mission hospitals their margins are 10–12 percent and for sales to the CMS and CHAM claim that they reduce their margins to 2–3 percent (though one wholesaler of branded products suggested his margins to the CMS were 15 percent). Sometimes wholesalers sell to each other. In such cases, they offer each other discounts of 5–10 percent of the wholesale price. For retail sales, wholesalers expect to add a 10–35 percent margin (10–25 percent on generics and 30–35 percent on brand-name products) and do not usually offer any discounts for large volumes or promotions.

Table C2 Price structure of pharmaceuticals, Malawi

Wholesaler sales to	Margins (%)
Other wholesalers	5–10 discount off wholesale price
Mission hospitals	10–12
CMS and CHAM	2–3
Private sector	10–25 (generics); 30–35 (brand name)

Source: Author interviews.

Retail Outlets

Pharmacies. The lack of trained staff in the health services is particularly acute in the pharmacy profession. Until 2006, there had been no pharmacy training in Malawi, since then the University of Malawi College of Medicine has introduced a Bachelor of Pharmacy.^{lvii} Pharmacists in Malawi are either Malawians who received their training abroad or foreign pharmacists. As there are few trained pharmacists in Malawi (30), there are few pharmacies. Pharmacies are concentrated in urban areas and there are no pharmacies in rural areas. Drug stores—licensed outlets offering a limited range of pharmaceutical products and run by staff without pharmacy training—are present in rural areas (table C3). Since 2002 the Medicines and Poisons Board has encouraged private doctors clinic dispensing in rural areas. They have granted about 330 dispensing licenses to private clinics (table C3).

Table C3 Number of establishments dispensing medicines, Malawi

Location	Drug stores	Pharmacies	Private hospitals/clinics	Wholesalers ^a
Lilongwe	15	15	80	13
Blantyre	14	11	67	19
Mzuzu	7	2	14	1
Other	25	0	160	0
Total	61	28	324	34 (22)

a. Some of these are the same company in different locations.

Source: Pharmacy, Medicines and Poisons Board 2009.

^{lvii} In 2010, the first graduating class of eight students graduated from the University of Malawi College of Medicine.

In the absence of trained pharmacists and pharmacies in rural areas and the preponderance of generic products available from wholesalers, permitting drug dispensing by doctors has some advantages, such as:

- Convenience (one-stop-shop) for patient.
- Forces prescriber to explain treatment to patient and gives him more control over treatment.

There are also disadvantages:

- Dispensing may serve as a source of income used to offset low doctors' fees, leading to irrational prescribing.
- Doctors cannot stock a full range of drugs. They are only able to stock what they like to use frequently, thereby narrowing the therapeutic range.
- Temptation to dispense what is in stock rather than the ideal drug.
- Stocking drugs on the basis of deals from manufacturers.
- Possibility of developing and selling their own drugs or mixtures, which might not be regulated.

The major challenge of pharmacists is managing their supply of medicines. Like the other actors in the supply chain, pharmacists also have problems managing stock. In part this is due to the forecasting and supply problems of the CMS and wholesalers. Stock outs at the CMS result in shortages at the wholesaler and pharmacy level. This is exacerbated by limited access to foreign exchange. The largest pharmacists report that they try to maintain two months' worth of stock (MK10 million or \$72,000) but they also aim to avoid purchasing too much because of the cost and the need to sell stock prior to expiration dates. In cases of supply chain stock outs, pharmacists report that they travel to South Africa to pick up stock at three times the price of goods in Malawi.

Price structure. Many of those interviewed (including pharmacists) suggested that prices offered by private clinics were variable and not necessarily more expensive than private pharmacies. In fact many indicated that prices of medicines were cheaper at private clinics than in private pharmacies. This is mainly because pharmacies charge high margins, of 50–100 percent. Pharmacies generally make most of their revenue (70–80 percent) from the front of store (such as cosmetics, shampoos, and diapers) rather than pharmaceutical products. Often less than 20 percent of their customers wanted to fill a prescription. One pharmacist suggested that he filled about five prescriptions out of 150 customers a day.^{lviii}

Price Initiatives

Despite the small size of the private pharmaceutical market, some pharmacies are already experimenting with private sector initiatives. Current initiatives include doctors' consultations in the pharmacy (Mudi Pharmacies), pharmacy chains (One Stop Community Pharmacy and Michiru Pharmacy), private clinics dispensing medicines, and one pharmacist looking at the possibility of putting his pharmacies in

^{lviii} Interview with pharmacist, Malawi.

grocery stores. For more information on the establishment of Michiru pharmacy chain see box C1.

The fact that there are a growing number of private sector for-profit and not-for-profit clinics in Malawi, where patients pay for services and medicines, suggests that there is some disposable income in urban and rural areas. Exactly how much and where was not within the scope of this project.

Box C1 Medical Aid Society of Malawi

Medical Aid Society of Malawi (MASM) is a national health insurance company, which in 2000 also established a pharmacy chain (Michiru pharmacies) with branches in Lilongwe and Blantyre. Since 2007 they also started private doctors clinics (MASM Medi-Clinics - located in the country's largest urban centers: Blantyre, Lilongwe, Mzuzu, and Zomba), an emergency ambulance service (MASM EMS) and a pharmaceutical wholesaler business and are part-owners of a local private hospital (Mwaiwathu Private Hospital Ltd). This allows MASM to provide a complete service to clients. Patients may visit any pharmacy but they get a 20 percent discount on medications purchased from Michiru pharmacies.

The organization procures products through its wholesale business and sells to businesses within the MASM network as well as other wholesalers and pharmacies. MASM offer special prices to the businesses within the group. Due to the scarcity of foreign exchange, they receive a consignment every six months. Michiru pharmacies receive about 40 percent of the total consignment and about 15 percent is sold to MASM clinics. MASM clinics buy at cost plus 20 percent and MASM retail pharmacies buy at cost plus 50–60 percent.

CHALLENGES

- Lack of trained pharmacists and lack of competition between pharmacies.
- High margins in pharmacies.
- Lack of medicine outlets in rural areas.
- Lack of market research on the Malawian private pharmaceutical sector.
- Emphasis on dispensing rather than prescribing: pharmacy business is mainly over the counter.
- Limited number of pharmacies and drug stores, especially in rural areas.
- Limited government drug quality testing.
- Relative high cost of pharmaceuticals in private sector and poor availability in public sector drive patients to informal sector.
- Difficulties forecasting demand and managing stock.
- Low purchasing power and lack of public or private health insurance.
- Irregular national distribution network.
- Small private sector.
- Emphasis on low-cost, low-quality generics.
- Poor in-bound transport links and delays in port: need to hold large quantities of stock.

INTERVIEWS

Mr. Steven Chapima, Pharmacy, Medicines and Poisons Board
Mr. Caesar Mudondo, Procurement Officer, UNICEF

Wholesalers: Mr. Kumar, Pharmacist Manager, Worldwide Pharmaceuticals
Mrs. Caroline Marufu Mwombedzi, Pharmacist, Chemicals and Marketing Co. Ltd.
Mr. Mehul Shah, Executive Director, Pharmavet, Ltd.

Pharmacies: Mr. Fergus Maswaya, Pharmacy Manager, Michiru Pharmacies
Mr. Mataya, CEO, Onestop Community Pharmacy
Mr. Richman James Mwale, Managing Director, Livingstone Pharmacy Ltd.

Malawian Manufacturers: Mr. David Bisnowaty, Chief Executive, SADM
Mr. Anup Panchal, General Manager, SADM
Mr. Colin Patrick, Group Managing Director, PharmaNova
Mr. Dumisani Chisala, Malawi Pharmacies Ltd.

APPENDIX D: MALI CASE STUDY

ANALYSIS OF PRIVATE SUPPLY AND DISTRIBUTION CHANNELS FOR MEDICINES

CONTEXT

Located in West Africa, Mali is bordered by Algeria, Burkina Faso, the Côte d'Ivoire, Guinea, Mauritania, Niger, and Senegal. Mali's economic growth has been favorable in recent years, averaging 5.1 percent a year over 2003–07, driven primarily by gold mining and transport and telecommunications services. The population is estimated at 13.5 million; it is predominantly rural with a growth rate of about 3 percent a year. Over 2001–06, it is estimated that the share of the population in poverty fell nationally from 55.6 percent to 47.5 percent. But there is a growing disparity of wealth, and geographic differences in poverty are widening.

In 2008, the United Nations Development Programme Human Development Index ranked Mali 168 of 179 countries. Literacy rates are about 26.3 percent (2005). The maternal mortality ratio of 1,200 per 100,000 live births (2000) is very high. Mali is not expected to meet all the MDGs by 2015, particularly in the health area.

Data suggest that 1.5 percent of the population (15–49 years) are living with HIV. Malaria is one of the principal causes of morbidity and mortality in Mali and is responsible for more than 30 percent of outpatient visits. The population has reasonable access to health services as 50 percent live within 5 kilometers of medical facilities and about 75 percent live within 15 kilometers. Of the population, 68 percent has access to safe drinking water.

HEALTH SERVICES

Health services are offered through the public, not-for-profit, and private sectors. The public sector provides essential health care at the central level (university hospitals and a foundation hospital), regional level (public hospitals), and district or *cercle* level (Centre de Santé Communautaire or CSCOM, and Centre de Santé de Référence or CSRef). Since 2002, the CSCOM and CSRef have been not-for-profit private services as users pay a copayment and some are managed by local health associations. The copayments are about CFAF 1,000 (\$2.30) at the CSRef and CFAF 600 (\$1.39) at the CSCOM. This covers a doctor's consultation but not all medicines. Medicines are usually available for purchase at health facilities. Many patients use public health facilities (51.9 percent), though many also forgo treatment (6.8 percent), buy medicine without going to a health practitioner (10.6 percent), or visit a traditional healer (13.3 percent).⁴⁹

Health Insurance Coverage

Some health insurance schemes exist such as the National Social Protection Institute and mutual health organizations such as the Union Technique de la Mutualité Malienne. But the formal health insurance system covers less than 20 percent of the

economically active population.⁵⁰ About 80 percent of the population has no insurance coverage other than the basic services provided by the state through public health services. They are therefore subject to out-of-pocket user fees, such as for medicines (modern and traditional) and diagnostic tests. One study estimates that 71 percent of household health spending is allocated to modern medicines and 81 percent to modern and traditional medicines and diagnostic tests.⁵¹

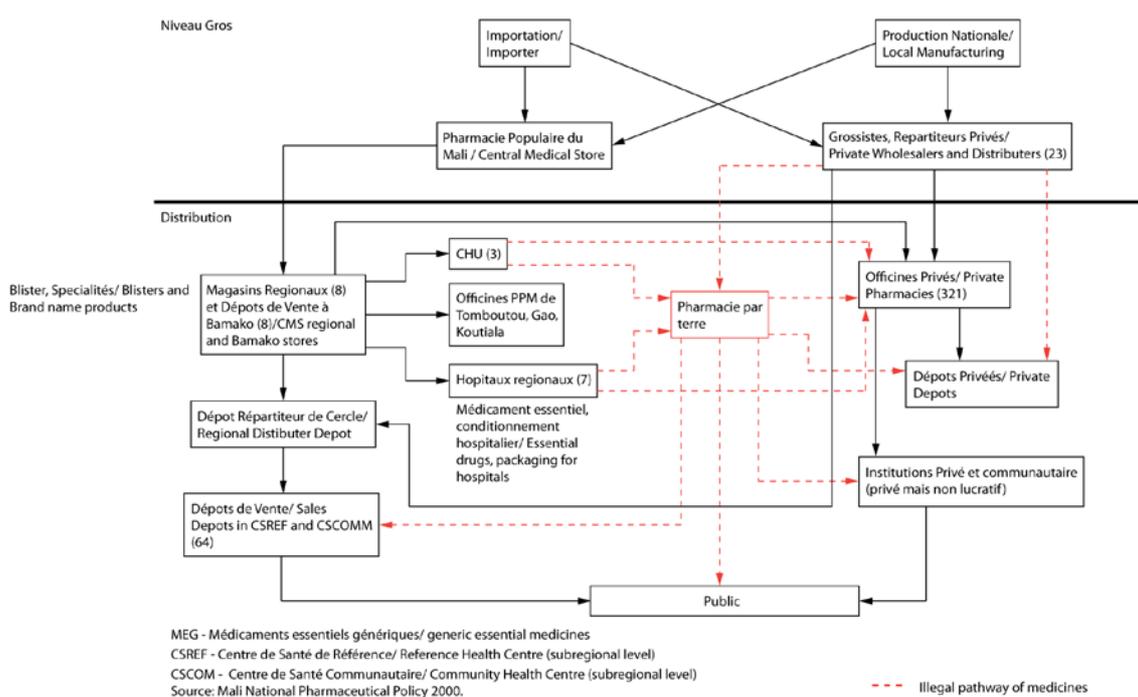
Regulation of the Pharmaceutical Sector

The Pharmacy and Medicines Department (DPM) was created in 2001 to formulate and implement drug policies, such as the national medicines policy and tools for the rational use of medicines. It also defines the regulation of pharmaceuticals and grants market approval for medicines. The National Public Health Laboratory Drug monitors the quality of medicines in the country. Quality testing is required at the time of the drug's market approval.

Pharmaceutical Supply in the Public Sector

Mali's central medicine store (CMS) or Pharmacie Populaire du Mali (PPM) is a parastatal organization responsible for the purchase and national distribution of medicines. According to the schema of import and distribution described in the national pharmaceutical policy, the PPM is the sole supplier of the public sector. It provides medicines to the regional medical store level, which in turn supplies the district depot (figure D1). The district depots are located within the CSREF for a specific *cercle*. They then distribute products to the CSCOM.

Figure D1 Flows of pharmaceutical products within Mali



The PPM faces problems at each level of the supply system: limited resources, poor forecasting, inadequate management of stocks, limited and poor warehousing capacity and practice (misplaced products and expired and substandard products), and pilfering of products.⁵² Chronic stock outs are one result of these problems. In one rural CSREF, the local pharmacist orders products for his CSREF and 14 rural clinics from the regional CMS depot. He complained that in most of the rural clinics the staff was poorly educated and they were unable to measure stock levels or to forecast effectively. Storage conditions in the CSREF were poor. The CSREF suffered from regular power cuts, which left the pharmacy stockroom unbearably hot. Due to these problems, the CSCOM and CSREF are often obligated to source their supplies from the private sector or send patients to nearby private sector pharmacists (or both). As a result, public sector doctors reportedly often contact private pharmacists for information on products and stocks levels, and send patients to fill prescriptions for medicines that are not available in the public sector (brand-name products).

Prices and Accessibility to Medicines

Prices in the public sector remain low but availability is limited by stock outs.⁵³ Prices in the private sector are higher but availability is also much better. In order to make medicines more accessible to patients, the government introduced legislation to set prices and reduce taxes on 107 international nonproprietary name essential medicines in the public and private sectors.^{lix} In addition, the government has initiated several policies to provide medicines free of charge through the public sector.

Most medicines provided in the public sector are international non-proprietary name generics. A DPM study found that such generics constituted about 79 percent of prescriptions in the public sector and about 20.4 percent in the private sector.⁵⁴ Although pharmacists reported that they substitute generics for brand-name products, rates of substitution remain low, at 1.1–3.3 percent.⁵⁵ This is in part because there is little financial incentive for pharmacists to substitute generics for branded products, given that they earn a higher margin from the sale of branded products. Substitution also requires the pharmacist to consult with the prescribing doctor, which requires an on-duty pharmacist to dispense the prescription and is a process that pharmacists find time consuming.

PRIVATE SUPPLY AND DISTRIBUTION CHANNELS

The revenue of the PPM in 2007 was CFAF 9.5 billion (\$22 million).⁵⁶ The largest wholesalers, with 60 percent, and 25 percent of the market, had an annual revenue in 2008 of CFAF 20 billion (Laborex), CFAF 9.5 billion (Copharma).^{lx} AfricaLab had

^{lix} Decret no 03-218/ P-RM regulates the price of international nonproprietary name generics on the national list of essential medicines. Sets multiplier coefficients (markups) in the public sector: 1.15 for PPM sale to hospitals and 1.20 for sale to depot at the district level (depot de cercle) and an additional 1.30 to pharmacies at CSCOM and CSREF. Decret 07-087/ P-RM sets the price of such generics on the national list of essential medicines in the private pharmaceutical sector. Set coefficient of 1.45 for generics and 1.33 for specialty products.

^{lx} Interview with Laborex Mali.

an annual revenue of CFAF 900 million in 2008.^{lxi} This suggests that the value of the private wholesale market is about CFAF 35 billion and the value of the public and private wholesale market is CFAF 44 billion (about \$101.2 million). The total Malian pharmaceutical market (public and private) at retail prices is about CFAF 58.8 billion (about \$135.2 million), for an annual pharmaceutical consumption rate of \$10.01 per capita.^{lxii}

Table D1 Estimated market data on the pharmaceutical sector, Mali

Item	Data
Revenue of PPM (2007)	CFAF 9.5 billion (\$22 million)
Wholesaler market value (2008)	CFAF 44 billion (\$101.2 million)
Retail market value	CFAF 58.8 billion (\$135.2 million)
Annual pharmaceutical consumption per capita	CFAF 4355 (\$10.01)

Source: Author interviews.

Pharmaceutical Supply Channels into Mali

Almost 100 percent of the pharmaceutical supply is imported and of this amount, up to 85 percent is imported by two companies: Laborex and CoPharma. Laborex^{lxiii} is part of the large French group Eurapharma that has supply and logistics companies and pre-wholesalers or *regroupers* (figure D2). Much of the distribution of medicines destined for Mali (and much of French-speaking Africa) takes place via Eurapharma, a subsidiary of CFAO.^{lxiv} Eurapharma is a group of 55 federated companies. It constitutes the largest distribution and pharmaceutical services group in Africa (present in 20 countries) and French overseas territories (present in seven).^{lxv}

^{lxi} Interview with AfricaLab, Mali.

^{lxii} Hypotheses: generics constitute about 79 percent of prescriptions in the public sector and about 20.4 percent in the private sector. Estimated sales in retail pharmaceutical market by applying a coefficient of 1.45 for generics and 1.33 for specialty products in the private sector. Estimated mark up in public sector of 20% on PPM wholesale price.

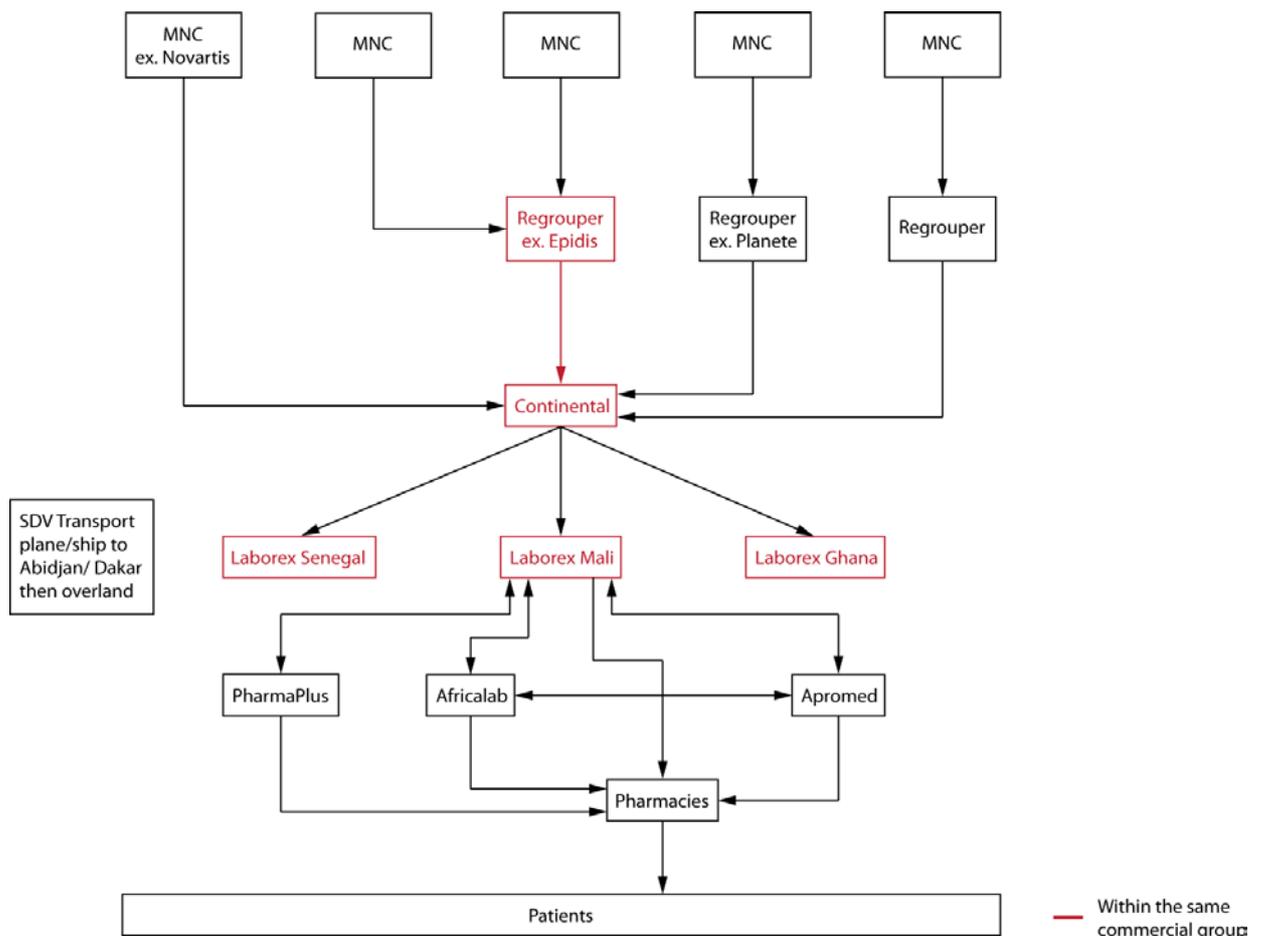
^{lxiii} Laborex is owned partly by local pharmacists and in part by Eurapharma, the largest shareholder.

^{lxiv} CFAO is a world leader in the distribution of pharmaceuticals, cars, and information technology in Africa.

^{lxv} Letter to shareholders.

2004. www.ppr.com/DataUploadFiles/632379368263750000_Lettre22GB.pdf

Figure D2 Global supply chain for finished products into West Africa



Laborex (Mali) places product orders with Continental Pharmaceutique (a central purchasing platform, which is part of the Eurapharma group), which then orders products directly from mainly European multinationals and/or pre-wholesalers, such as Epidis (also in the Eurapharma Group) or Planete. Pre-wholesalers provide distribution platforms for pharmaceutical manufacturing companies to contract out their logistics and export business for sales in the Africa. Continental then consolidates consignments, organizes shipment (through boat or plane depending on the value and the shipping requirements of the product) to their destination. Continental also provides financial services. Laborex Mali pays suppliers through Continental and pays Continental a fee equal to a percentage of the value of the products it ships. Continental uses a transport company, SDV of the French Groupe Bolloré, to transport (through truck or rail) goods from France to African ports (Abidjan or Dakar) and inland destinations, as well as to clear products through customs and to deliver them to Laborex’s warehouse in Bamako.

Most products are sourced from the world’s largest pharmaceutical manufacturers and are imported from France. As a result, 90 percent of Laborex’s products are brand-name products. Laborex receives 90 percent of its supplies from Eurapharma through Continental. It also has contracts with Malian wholesalers under which it obtains products and supplies products. Laborex’s main competitor, Copharma, operates

under a similar business model. In this case, Planete is Copharma’s principal *regroupeur*.

Supply and Distribution Channels within Mali

There are 32 wholesalers in Mali of which about five are viable businesses.⁵⁷ Of these five, two (Laborex and CoPharma) dominate the market (table D2). Wholesalers without ongoing official business (estimated at half the registered wholesalers) are suspected of supplying the informal sector.

Wholesalers focus on specific types of products. Brand-name products are imported by Copharma, Laborex, and AfricaLab, whereas generics are imported by CAMED, Multi-M, CAG, PPM and to some extent Laborex and Copharma. Generics wholesalers are benefiting from the recent growth in market share of generics.

Table D2 Market shares of wholesalers, Mali

Wholesaler	Market share (%)
Laborex	55–60
CoPharma	20–25
AfricaLab	11–12
CAMED	7–8
Multi-M	4

Source: Author interviews.

Although prices are free in principle, since the devaluation of the CFAF in 1994 there has been a “harmonization of prices” through a gentleman’s agreement between the government, wholesalers, and retailers. As part of the drug registration process, foreign manufacturers put forward retail prices, which are approved by the DPM. In time prices are readjusted and local supply chain actors agree on coefficients (margins) that should to be added by each actor in the chain. As Laborex and Copharma are the most powerful actors in this chain, they determine the wholesale price. As the retail price is fixed, wholesalers also effectively determine pharmacists’ margins.

Manufacturers set prices that are approved by the DPM during the market-approval process. Although the DPM should be informed when the prices of products already on the market change, this rarely occurs. Laborex and CoPharma reportedly agree among themselves on sales prices and therefore pharmacists’ margins. The estimated coefficients employed by supply chain actors are:

Coefficients for Branded Products^{lxvi,58}

Wholesale Price before tax (PGHT) x 1.97 = Pharmacy price

Suggested pharmacy price x 0.75 = Wholesaler transfer price

Coefficients for Branded Products

Wholesale Price before tax (PGHT) x 2.05 = Pharmacy price

Pharmacy price x 0.65 = Wholesaler transfer price

^{lxvi} Interviews with Laborex Mali, AfricaLab, and CAG, Mali.

Wholesale margins on brand-name products are 13–30 percent and pharmacists' margins are about 25 percent. For generic products margins are slightly higher at 19–34 percent for wholesalers and 28–45 percent for pharmacists.^{lxvii}

Although the Malian wholesale and distribution market is quite consolidated, a change in legislation in 2003 now allows wholesalers to sell products to each other. The establishment of smaller players adds another layer of middlemen, which suggests there is some price inflation. Africa Lab, a small wholesaler, imports generic products from Egypt and Morocco and sells to other wholesalers such as Laborex, CAMED, and Copharma. Wholesalers offer a 10–12 percent discount on the wholesale price of products sold to other wholesalers.

Wholesalers often offer promotions to motivate clients. They provide discounts to high-volume customers or free units (“buy 100 get 110”). Some wholesalers offer trips to France, or free breakfasts to good customers.

The main difficulty of wholesalers is managing their stocks. Because Mali is a landlocked country, goods arrive in the ports of Abidjan, Lomé, or Dakar and are then sent by train or truck to Bamako. Unexpected delays can occur due to products held in port, poor road conditions, train derailments, or a lack of train cars. It can take up to three months from shipment by manufacturer or European wholesaler to receive goods in Bamako. Large wholesalers aim to receive a container per week. As a result of potential delays, wholesalers maintain three to five months of supplies in their warehouses and must absorb these storage costs.

Retail Outlets

In Mali, pharmaceutical retail outlets include pharmacies and *dépôts de vente*. *Dépôts de vente* are licensed but are not staffed by trained pharmacists and stock a limited range of products. Currently, there are about 401 pharmacies and 109 *dépôts de vente* in Mali (table D3). By regulation, *dépôts de vente* should only be in areas where there are no pharmacies within 40 meters. More than half all pharmacists are in the capital, Bamako. However, there is a waiting list of about 580 pharmacists hoping to be granted pharmacy licenses in Bamako and rural areas.

^{lxvii} These were supported by a DPM report (2004) and were confirmed by author's findings.

Table D3 Number of licensed drug dispensaries by region, Mali, 2009

Region	<i>Dépôt de vente</i>	Pharmacy	Wholesaler	Pharma company	Biomedical laboratory	Total
Kayes	15	33	1	0	1	50
District of Bamako	2	201	29	1	9	242
Koulikoro	25	68	0	0	0	93
Sikasso	22	36	1	0	0	58
Segou	21	33	0	0	0	54
Mopti	7	17	1	0	0	25
Tombouctou	11	5	0	0	0	16
Gao	4	8	0	0	0	12
Kidal	2	0	0	0	0	2
Total	109	401	32	1	10	553

Note: Numbers for *dépôts de vente* are only for existing entities.

Source: Information provided by Conseil National de l'Ordre des Pharmaciens—National Pharmacists Council.

Almost all pharmacists have ties with either Copharma or Laborex, who are their long-term suppliers and often provide about 80 percent of their supplies. They also purchase products from other wholesalers. Successful pharmacies in Bamako have approximately 200 clients a day and they have revenues of about CFAF 1,320,000 a year (\$36,432). These pharmacists often order stock every day and receive delivery the same day. In rural areas, pharmacies may see 50 patients a day and have revenues of CFAF 6 million (\$13,800). Here, pharmacists order stock every few days. Delivery vans travel in circuits and orders are received in one to three days.

Pharmacists complain that they have financial problems. Officials suggested that less than 5 percent of pharmacies were in “good financial health.” A reported 60–70 percent of pharmacies are in financial difficulty and many are technically bankrupt, though they do not officially close. Pharmacists have trouble managing their business, buying stock on credit and often incur substantial debts. Some interviewees reported that pharmacists use their profits to finance their personal lives rather than channel income back into the business.

Pharmacists claim that the business environment hinders their business. They report that the cost of their business is too high due to high taxes and the annual pharmacy license fees. Pharmacists have problems accessing credit because they claim that the banking system does not understand the pharmaceutical sector. They claim that interest rates are too high (12–15 percent a year) and banks require substantial guarantees for loans or lines of credit, which are difficult to provide. This is particularly a problem for pharmacists entering the profession.

As a result, the large wholesalers have become de facto financial service providers. Wholesalers have an incentive to provide pharmacies with financing as new pharmacies are a source of growth in wholesale volumes. Large wholesalers provide start-up capital for new pharmacists in addition to their monthly orders. The terms of payment for the start-up capital and the value of maximum monthly orders is determined for each pharmacist and is outlined in their contract with the wholesaler. For example, a new pharmacist may receive CFAF 3 million (\$6,900) worth of stock

plus a maximum monthly order of CFAF 200,000 (\$460). It is reported that Laborex has granted credit to the extent that it are reported to have CFAF 500 million (\$11.5 million) in debts.

Pharmacists also describe problems with pharmacy theft of cash from the register, staff stealing products for resale in the informal market, and employees purchasing stock from the informal market (either shell wholesalers, the market, or hospitals) and selling it in the pharmacy. This deprives pharmacists of their own sales and distorts their balance sheet.

CHALLENGES

- Limited number of pharmacists in rural areas; constrained by access to financing and allocation of pharmacy licenses.
- Pharmacies in financial difficulty.
- Limited use of generics and prices of medicines remain relatively high.
- Difficulties managing stock levels at wholesale and retail levels.

INTERVIEWS

Wholesalers: Dr. Boukassoum Haidara, Directeur Général, AfricaLab Mali S.A.
Mr. Mamadou-Seydou Kone, Responsables des Achats, Laborex
Dr. Hamidou Traoré, CoPharma
Mr. Alfred Dembele, Directeur, Central d'Achat des Generiques

Pharmacists: Dr. Halima Sokona Gakou, Pharmacie V2M
Dr. Nouhum Coulibaly, President, Conseil National de l'Ordre des Pharmaciens du Mali
Dr. Check Oumar Dia, Président du SYNAPPO

NGO's: Mr. Stéphane Besançon, Directeur des programmes, ONG Santé Diabète Mali

Government: Dr. Youssouf Diallo, Haut Conseil pour la Lutte Contre le SIDA
Mr. Ousmane Traore, Responsable Unité Prise en Charge, Cellule du Comite Sectoriel de Lutte Contre le SIDA CSLS/ MS
Dr. Aliou Sylla, Coordinateur, Cellule de Coordination du Comite Sectoriel de Lutte Contre le SIDA, Ministère de la Santé

CSCCom Oulussebouougou
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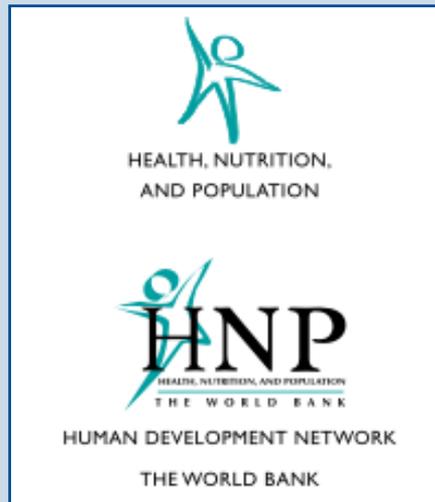
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