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Where do pharmaceuticals on the market originate? An analysis of the informal drug supply in Cotonou, Benin

Carine Baxerres*, Jean-Yves Le Hesran

Institut de Recherche pour le Developpement (IRD), UMR 216 Mere et enfant face aux infections tropicales, Laboratoire de Parasitologie, Faculte de pharmacie, Université Paris Descartes, Paris V 4 avenue de l'observatoire, 75006 Paris, France

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ABSTRACT

This anthropological study, conducted in Cotonou, Benin between 2005 and 2007, investigates the informal pharmaceuticals market. It was carried out through a long-term participant observation of informal vendors and semi-directive and unstructured interviews. A classification of products sold in the informal market was developed. The fact that a high percentage of them come from Anglophone countries near Benin (Nigeria and Ghana) led to a comparison of the sources of pharmaceutical supply in these three countries as well as their current legislation regarding pharmaceutical distribution. Our study results highlight a new understanding of the phenomenon of the informal market. Nigeria and Ghana rely on a liberal pharmaceutical distribution system with little intervention from public authorities. Conversely, the government maintains considerable influence over pharmaceutical distribution in Benin. Hence, the differences between these three countries in terms of variety of supply sources and flexibility of access to drugs are understood through an investigation of Benin's informal market. Therefore, it appears that beyond issues concerning the quality of the pharmaceuticals, this phenomenon illustrates a kind of liberalization of pharmaceutical distribution and the ensuing public health issues.

Introduction

During the 1950s, buying and selling drugs outside of the formal framework established by the government and the country's current biomedical healthcare system slowly emerged in Francophone countries in Africa (Baxerres, 2010). However, it was not until the 1980s that anthropologists became interested in this phenomenon due to its unprecedented scale. Van Der Geest (1982) is the first to offer a bibliographic exploration of the subject through which he pointed out the profit making incentive of the providers and the advantage of the informal sales over the formal ones in terms of drugs accessibility.

Since then, sociological and anthropological studies have investigated the informal pharmaceuticals market in Francophone countries in Africa, both as a related or primary topic of interest. We chose the qualifier "informal" to designate this pharmaceuticals market in keeping with the definition provided by Lautier, de Miras and Morice (1991) for the informal economy: "*informal has no forms imposed by the government* (…). *The relationship to the government is central to the definition of informality*" (p. 6). In this paper, the terms "formal" and "informal" are mutually exclusive, the first one meaning forms imposed by the government and the second referring to all other forms.

A bibliographical review of this phenomenon suggests that anthropology has mainly tried to explain it by looking at the role it plays in the therapeutic itineraries of sick people. Anthropologists thus tried to understand the informal pharmaceuticals market by focusing on how people use this market. Specific explanatory considerations were highlighted: economic (retailing, low costs, credit), geographic (intensive presence of vendors), pragmatic (quick sales, round-the-clock availability), social (vendors' social proximity, discretion about health problems) and cultural (similarity between vendors' and buyers' perceptions of health) (Jaffré, 1999; Whyte, Van Der Geest & Hardon, 2002; Touré, 2005; Baxerres & Le Hesran, 2006; Pale & Ladner, 2006). These studies generally compare the advantages of the informal pharmaceuticals market in terms of access to drugs to the constraints of the formal supply system. Thus, various dysfunctions within the formal health systems regarding prescription and pharmaceuticals supply have been emphasized: an insufficient number of health centers, shortage of pharmaceuticals, long wait times and poor reception for patients in health centers, social distance between medical staff and patients, excessive cost of drugs in private pharmacies, etc.

* Corresponding author. Tel.: +33 1 53 73 96 20.
E-mail addresses: carinebax@hotmail.com, carine.baxerres@ird.fr (C. Baxerres).

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Few anthropological analyses examine pharmaceuticals supply from the informal market, particularly the products themselves and their supply sources. However, when taking into account other items (rugs, electronic goods and second-hand cars), this kind of anthropological analysis proves to be pertinent and heuristic (Tarrius, 2002). Only two researchers have used this approach for medicines: Didier Fassin, in a study completed in the mid-1980s in Senegal, and Sjaak Van Der Geest, through an investigation conducted during the same period in southern Cameroon. Both researchers identified two main origins of pharmaceuticals: Anglophone countries (Gambia and Nigeria) bordering the nation they were studying and Senegal's and Cameroon's formal pharmaceuticals supply and distribution channels (national supply organizations, ports, customs, health centers and pharmacies). However, more specifically, these two scholars succeeded in explaining the formal pharmaceutical system's structure for their respective study-country. Didier Fassin's analysis provides an understanding of the informal market's organization and its nearly exclusive control by the Mouride Brotherhood in the context of Senegalese social structure, particularly relative to the government. Sjaak Van Der Geest underlines the interweaving formal and informal channels in Cameroon. He further emphasizes the links between the informal market and self-medication. By contrast, the two researchers offer little analysis of the second supply source: the Anglophone countries. Didier Fassin offers a brief explanation about Gambia, where: "*access to medicines outside of pharmacies is easier in this country that adheres to British colonial traditions*" (Fassin, 1986, p. 125). Sjaak Van Der Geest remains speculative, stating: "*Why Nigeria 'exports' so many drugs to Cameroon is not entirely clear, but one factor may be that the import and sale of pharmaceutical products in Nigeria is much freer than in Cameroon*" (Van Der Geest, 1987, p. 297).

These two studies date back to the 1980s, signaling an unfortunate void in anthropology regarding the issue of pharmaceuticals supply in the informal market, despite this phenomenon's continuance. It takes on a specific scope in Francophone countries in West Africa when compared to Anglophone ones because of the distinct pharmaceutical distribution systems operating in these two groups of countries; this will be further addressed below. Meanwhile, this lack of anthropological analysis led various actors (the countries' national health institutions, pharmaceutical foundations, NGOs and journalists) to address the issue in the mid 1990s. They presented an alarming scene: uncertain drug quality (under dosage, over dosage, no active ingredient), drug toxicity (harmful substances). The network "Médicament et Développement" (www.remed.org), in partnership with pharmacists' associations, launched an ongoing awareness campaign against the informal pharmaceuticals market in Francophone countries in Africa in the early 2000s. Until recently, their slogan was: "Street pharmaceuticals kill!" Anthropology, which focuses on how people use objects, still classifies the phenomenon of the informal market within the popular health sector, close to the folk/alternative and biomedical/professional sectors, based on Arthur Kleinman's categorization (1980). Today, in order to produce an overall analysis of this phenomenon and therefore to provide the means for understanding it, anthropology should revisit the issue of informal drug supply and carry out a comprehensive analysis of this phenomenon. This paper aims to present our contribution to this complex undertaking, with regard to the illicit nature of the object.

An anthropological study conducted in Cotonou

The economic capital of Benin was chosen for this study because of its proximity to Nigeria, a country known for unofficial production and circulation of medicines. Moreover, Benin has built an economy based on re-exportation of goods and informal exchanges since the 18th century. In the 1990s, John Igué and Bio Soulé categorized the country among the "*storage-States that produce the bulk of their wealth from a well structured and dynamic parallel economy*" (Igué & Soulé, 1992, p. 14).

This study was mainly conducted through participant observations in Dantokpá, Cotonou's vast market, between 2005 and 2007. Dantokpá, known as one of West Africa's largest markets, is the main site for informal wholesale distribution of pharmaceuticals in Cotonou. Many hours of observation was carried out over 69 days (four consecutive hours each day) at three shops where owners had agreed to participate in the investigation. From the one thousand shops in this section of Dantokpá, these three were chosen after a general exploration of the market because we were able to establish contact with the shopkeepers. The comparative analysis of their activities shows that, taken together, the three shopkeepers offered the full assortment of pharmaceuticals that are available in the market. In addition to the field diary, where qualitative information was recorded later, observation periods enabled the anthropologist to collect data on the drugs sold (name, category, dosage form, quantity and price). Various non-directive interviews were also conducted with vendors from the three shops as well as one-to-two-hour semi-directive interviews with two of them and seven other vendors in the market, who were accessible to us without compromising our main informants.

In addition to this main data collection in the informal market, one-hour semi-directive interviews were also conducted with the commercial directors of the five wholesalers who are responsible for formal distribution of drugs in Benin. Finally, productive weeklong field studies were conducted in Nigeria and Ghana to obtain information about the management of pharmaceutical systems in these countries. Around fifteen institutional actors and people involved in the pharmaceutical supply were interviewed in each country and official documents were collected from the national agencies involved in drug and pharmaceutical regulation. Direct observations of drug sales in Accra and Lagos were also carried out.

The data were analyzed through two qualitative supplementary methods. The thematic analysis consists in sorting all the information collected from observations and interviews out and classifying it in specific themes. The aim of the situation analysis is to debrief the specificity of each person met (life history, frame of reference).

Regarding ethical aspects, the Minister of Public Health of Benin authorized this study in a letter dated the 16 March 2006.

Typology of the pharmaceuticals sold in the informal market in Cotonou

Dantokpá market is divided into several sections that, more or less, specialize in a specific good (fabric, cereal, car parts, etc.) and serve a varied clientele who might be individual consumers or retailers. Vendors in this market simultaneously assume the role of wholesalers, semi-wholesalers and retailers, as is also the case for the informal sale of pharmaceuticals. Informal vendors working in the city's neighborhoods (hawkers, vendors in stalls, shop vendors, roadside vendors and vendors in neighborhood markets) and "lay consumers" stock up here. The section of Dantokpá where the informal sale of pharmaceuticals takes place comprises approximately one thousand well-stocked shops, specializing in pharmaceuticals. People used to call it Ajégúnlè, a Yoruba term that literally means "profit (*ajé*) reaches its destination (*gúnlè*)" (Michka, 1997). Yoruba vendors created Ajégúnlè during the 1970s. They still account for the majority of vendors in this section of the market, despite the gradual involvement of other sociolinguistic groups

(Fon and Goun) in this trade. The Yoruba, from Nigeria, are well known for their ability to trade.

Shops in Ajégúnlè are open Monday through Saturday from 7–8 a.m. until 9–10 p.m. for vendors with electricity who can keep their shops open after nightfall. On Sundays, the market is relatively quiet; only a few shops are open. Activities in this section of the market do not always follow the same rhythm as those of Dantokpá ("market day" every four days and the day before a celebration when activity is particularly high). By contrast, the rainy season (from May to July and in September and October), with the subsequent rise in infections and illness, is more favorable to pharmaceuticals sales. Nevertheless, Ajégúnlè's most crowded hours and busy days are unpredictable. Within the various shops, long hours with no customers can slowly add up, while at other times customers frantically fall over each other to purchase drugs. Apart from pharmaceuticals sales and its associated activities, a real social and economic life takes place in the shops (eating, drinking, napping, visits from dress designers and hairdressers, manicures, etc.).

Initial observations quickly revealed that vendors identify different categories of products for the entire range of pharmaceuticals in the market. Thus, a typology of the pharmaceuticals sold in the informal market has been created based on vendors' perceptions. These are identified by several criteria: the products' presentation (packaging), their prices, whether or not they are distributed through Benin's formal channels and their supply sources. Using the names assigned by the vendors, three main kinds of pharmaceuticals are sold in Ajégúnlè: (1) "drugs from Nigeria and Ghana," (2) "French drugs" or "pharmacy drugs" and (3) "pharmaquick drugs."

"Drugs from Nigeria and Ghana"

"Drugs from Nigeria and Ghana" are generic drugs bearing a trade name. Their main dosage form is a tablet in a blister pack but also capsules, syrup, ointment and eye wash. Most of these drugs are packaged in very colorful boxes that illustrate the product's effect through drawings. Their price is inexpensive. Among them, the most popular ones are analgesics, antipyretics, anti-inflammatories, decongestants and drugs manufactured from various molecules from these therapeutic classes.

The two "drugs from Nigeria and Ghana" sold most frequently in the market at the time of our study were Mixagrip® and Ibucap®. Mixagrip® costs approximately 100 francs CFA (0.15 euro; CFA = Financial Community of Africa). It is packaged in a yellow cardboard packet containing a blister pack of four tablets (composition written on the packaging: 500 mg of paracetamol, 30 mg of pseudoephedrine and 2 mg of chlorpheniramine maleate). The packet depicts four photographs showing a man who has a backache, is blowing his nose, is cold and has a headache (Fig. 1). It is manufactured in Indonesia by the pharmaceutical firm Dankos. Ibucap®, priced around 125 francs CFA (0.20 euro), is packaged in a blue and orange box containing a blister pack of ten capsules (composition written on the packaging: 325 mg of paracetamol, 200 mg of ibuprofen and 30 mg of caffeine). The box illustration depicts the back of a man's body with arrows indicating sore joints (Fig. 2). It is manufactured in India by Shalina.

Most drugs in this category have not been authorized for sale in Benin's formal pharmaceutical channels. By contrast, most of them are sold legally in Nigeria and/or Ghana. According to inventories conduced in both countries, among the 97 "drugs from Nigeria and Ghana" listed during the investigations in Ajégúnlè, 52 of the drugs were formally registered in Nigeria and 22 were registered in Ghana with the Food and Drugs Board. The Nigerian inventory was based on the NAFDAC (National Agency for Food and Drug Administration and Control) *Green pages* (NAFDAC, 2006); an official from the Ghanaian

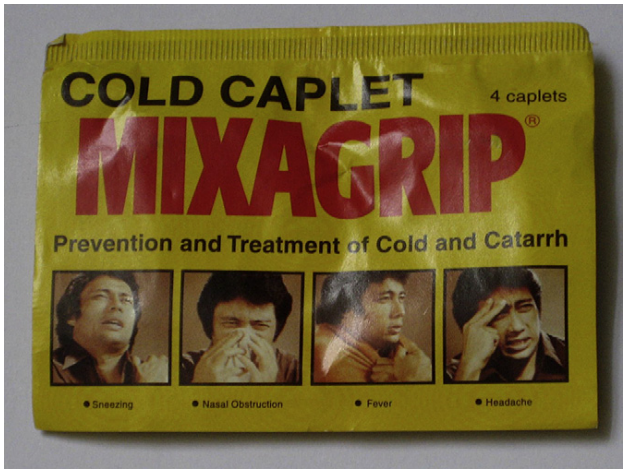

Fig. 1. Mixagrip® drug manufactured by the pharmaceutical firm Dankos in Indonesia

Food and Drugs Board conducted the inventory in Ghana. These two national agencies regulate food and drugs in their respective countries. According to the commercial director of a wholesaler in Benin, only eight of these drugs were registered in Benin to the Pharmacies Directorate. Ibucap® was authorized in Nigeria and Ghana; Mixagrip® was authorized in Nigeria but not in Ghana. Neither of these two drugs was authorized in Benin, and the ways which they make it onto this market will be explained in more detail below. As the name assigned to this category of drugs by vendors indicates, these pharmaceuticals mainly came from Nigeria and Ghana. Their packaging states that they are manufactured in those countries or in Asian countries, mainly India and Indonesia.

"Drugs from Nigeria and Ghana" represent the archetype of "street drugs." Awareness-raising campaigns single out this category of drugs to warn against the dangers of the informal market. The brightly colored packaging of the drugs of this category in general, full of simple pictures unfamiliar to the clientele of formal pharmacies in Francophone countries, reinforces the suspicions about drug quality, ingredients and dosage advanced by the informal market's detractors.

"French drugs" or "pharmacy drugs"

The category of "French drugs" or "pharmacy drugs" is mainly made up of pharmaceuticals marketed under a trade name. They

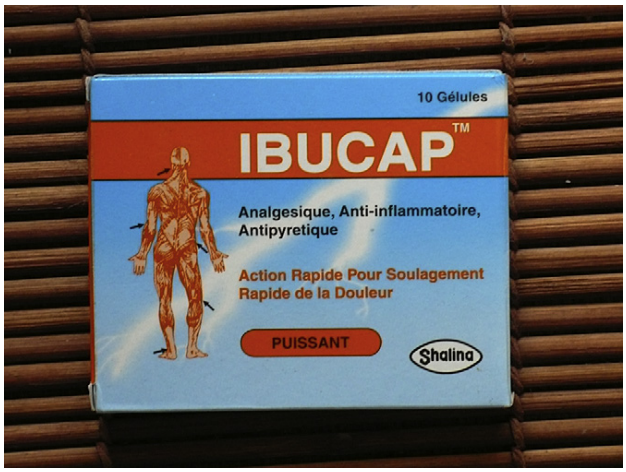

Fig. 2. Ibucap® drug manufactured by the pharmaceutical firm Shalina in India

can be patented, original or generic drugs. All dosage forms are available. These products are packaged in simple boxes, white or lightly colored, with plain inscriptions often underlined with a bit of color.

Most of the therapeutic classes are represented in this category. Overall, the "French drugs" or "pharmacy drugs" that are available in Ajégúnlè are the pharmaceuticals prescribed in Benin. The more often a drug is prescribed, the more people are familiar with it, and the greater its availability in the market.

Most of these pharmaceuticals are formally registered in Benin and are available in the country's private pharmacies, as demonstrated by the second name that market vendors use for them. They are expensive but their prices are lower in the market than in pharmacies. For example, a box of Efferalgan®, very popular in Cotonou, is produced by the US-French firm Bristol-Myers Squibb UPSA and costs around 950 francs CFA (1.40 euros) in Ajégúnlè and 1215 francs CFA (1.80 euros) in the pharmacy. A box of Coartem®, an anti-malarial drug manufactured by the Swiss firm Novartis and currently recommended by the PNLP (National Malaria Control Program) as a first-line treatment for malaria, costs 4085 francs CFA (6.20 euros) in the pharmacy. It is sold for approximately 3500 francs CFA (5.30 euros) in the market.

According to observations and interviews conducted in Ajégúnlè, pharmaceuticals from this category mainly come from Benin but also from nearby (Togo, Burkina Faso, Niger) or distant Francophone countries (Mali, Senegal, Cameroon, Gabon, Morocco, etc.). Except in some very rare instances of counterfeiting we encountered, they are manufactured by European, North American and, sometimes, Asian pharmaceutical firms (Abbott, Pfizer, Astrazeneca, Sanofi Aventis, Bayer, Merck and Boehringer Ingelheim, Glaxo Smithkline, Novartis, Bristol-Myers Squibb UPSA, Cipla, Ranbaxy, etc.).

Calling them "French drugs" results from the fact that consumers and vendors generally perceive drugs sold in Cotonou's pharmacies as being manufactured by former colonists.

"Pharmaquick drugs"

The "pharmaquick drugs" category comprises generics marketed under their inns (International Non-proprietary Names). Their dosage form is usually a tablet and sometimes a capsule. They are packaged in two ways: loose, in plastic containers each containing 500, 1000 or 5000 units, and in blister packs placed in cardboard boxes, each containing hundreds of blister packs. This "hospital packaging" is reserved for sale exclusively in health structures. In Ajégúnlè, they are usually unpackaged and sold in single units (tablet, capsule or blister pack). All of the generics marketed under their INNs that are registered on the national list of essential drugs can be found in Ajégúnlè.

According to the investigation conducted in Ajégúnlè, "pharmaquick drugs" come from West African countries (Benin, Togo, Ghana and Nigeria). They are mainly manufactured by pharmaceutical firms located in these countries financed locally or from abroad (China, the United States, France and India). Examples include firms such as Tong Mei in Togo, Ayrtons Drugs in Ghana, Dana and Emzor in Nigeria and Pharmaquick in Benin. This last Beninese company, operating since 1982, is the source of the name given to this category of products by the vendors. Although a few firms that manufacture generics marketed under their inns exist in Francophone countries in West Africa, they are more numerous with greater production capacity in the Anglophone countries of this area, particularly Nigeria and Ghana. Some "pharmaquick drugs" are also manufactured by Asian factories, notably in India and China.

A portion of the "pharmaquick drugs" has been formally registered in Benin, and therefore are distributed in health centers and pharmacies in Cotonou. Most of these products are manufactured in Francophone countries in West Africa (Benin, Togo) as well those manufactured by the Indian firm Cipla, that have been authorized in Benin. However, the remaining "pharmaquick drugs" mainly come from firms located in Nigeria, Ghana and Asia. Their sale is not legal in Benin, and, as we explain below, they are only distributed through the informal market. "Pharmaquick drugs" are not expensive. According to data collected in health organizations, those registered in Benin are little less expensive in Ajégúnlè than in public health centers and pharmacies in Cotonou.

Modes and sources of supply of the informal market's pharmaceuticals

The last typology, as with all of them, is an ideal-type. It is based on various criteria, some of which remain constant and enable distinguishing one category from another. Some categories share other criteria. Another way to characterize these various medicines is to look at the modes and supply sources used by Ajégúnlè's vendors to procure them. According to observations conducted during the study, these sources can be distinguished by whether or not they are authorized in Benin.

The supply of the "drugs from Nigeria and Ghana" and of some "pharmaquick drugs"

Ajégúnlè vendors mainly obtain these various pharmaceuticals by going straight to Nigeria and Ghana or to Togo where drugs from Ghana are readily found. To avoid transportation difficulties or when they lack sufficient funds, they can also buy them from other vendors in Dantokpá who thus play the role of wholesalers.

Based on interviews with various vendors and observations conducted in Nigeria and Ghana, pharmaceuticals are bought in Lagos and Accra in markets where formal wholesalers who distribute registered drugs are based: Idumota market in Lagos and Okaïshie market in Accra. Companies located in these markets can be wholesalers, semi-wholesalers and retailers (source: internal documents provided in July 2007 by the Pharmacy Council of Ghana, a regulatory agency mandated by law to secure the highest standards in the practice of pharmacy for the public interest). Thus, individuals can buy their products in easily negotiated quantities. Vendors in Ajégúnlè get their supply without any problems.

In Benin, importation of those drugs is informal, existing within the framework of unregistered trade and cross-border exchanges between West African countries of various goods in a complicated mix of formal and informal transactions (Egg & Herrera 1998; Galtier & Tassou, 1998). Pharmaceuticals from Nigeria enter the country using the "*acquits*" system (LARES/IRAM, 1996). This system is not specific to drugs. It allows truckers to cross borders with legal global customs clearance (one price per trucker). Consequently, trade of specific goods, such as pharmaceuticals, can escape customs statistics. This system is in regular use by vendors who usually spend one day traveling to Nigeria on public transportation. Once there, he entrusts his purchased goods to a warehouse manager in Lagos who is paid to deal with formalities (stocking, transport, customs clearance, etc.) and to transport goods by truck to Cotonou. Vendors pay to retrieve the shipment a few days later and bring it to Dantokpá.

Products bought in Ghana follow the same supply channels: the transporter is often the driver of a rented taxi and is responsible for crossing borders (Ghana-Togo and Togo-Benin), using his experience and connections to negotiate passage. Transporting goods from Ghana is not as easy as from Nigeria since crossing two borders is more expensive and complicated. Also, this route was established more recently. Pharmaceuticals from Nigeria have been

distributed in Benin's informal market since the 1970s. Surprisingly, a 1996 study does not refer to the Ghanaian market (Mensah, 1996). "Drugs from Nigeria and Ghana" are sometimes brought through river or sea routes to completely avoid customs checkpoints.

The supply of "French drugs" or "pharmacy drugs" and of some "pharmaquick drugs"

Ajégúnlè's vendors obtain these drugs through various means and, as mentioned above, can sell them to one another. From observations and interviews conducted in Ajégúnlè, these pharmaceuticals mainly come from formal channels in Benin, more specifically from the four private wholesalers located in Benin that supply pharmacies and the "Centrale d'Achat des Médicaments Essentiels et consommables médicaux" (Central Purchasing for Essential Drugs and medicinal consumables; CAME, which is mainly responsible for restocking public and private non-profit (NGOs, denominational) health centers. This information is neither new nor surprising; other studies on the informal market have already demonstrated this (Hamel, 2006). In Benin, drugs are legally bought from the various wholesalers by healthcare professionals who work both in the private and public sector (physicians, nurses, health center administrators, pharmacists, pharmaceutical warehouse administrators, etc.). They order higher quantities of drugs than needed. The surplus is sold through personal connections in the market at a profit. "Redirecting" these drugs does not occur through a single or a few highly organized networks that fit into hierarchies. Rather, this results from a multitude of actors, located at various levels in the biomedical hierarchy. Because of their professional position, they have access to drugs; moreover, they know one or more vendors in the market. The term "redirecting" is used here because although the pharmaceuticals in question have been detoured from their initial destinations, they were paid for, not stolen. The structures that they indirectly come from do not suffer financial damages. Also, pharmaceuticals are stolen from health centers by staff members and sold on the market; however, this only involves a small quantity of drugs.

In addition to this main supply channel, the investigation in the market shows that other channels exist. "French drugs" or "pharmacy drugs" also come from bordering or distant countries, particularly Francophone ones. Legally, the same product is not sold at the same price within these countries. Various factors play a role in price variations from one country to another: quantity of sold products, special offers from pharmaceutical firms, negotiations between firms and pharmacy directorates and ministries of health, transportation costs, possible taxes on pharmaceuticals, profit margin granted to wholesalers, etc. These price differentials stimulate cross-border trafficking of products via informal channels, brought by persons who legally obtain drugs in the countries. Some pharmaceuticals also come from African countries where they were manufactured (Senegal, Morocco) and are transported to Benin through informal channels.

"French drugs" or "pharmacy drugs" also reach the market through the embezzlement of drug donations originally intended for NGOs and denominational health centers and of free samples used by physicians to promote drugs. Finally, they also come from persons who transport pharmaceuticals directly from Western countries through familial or social networks. For instance, once we met a woman in Ajégúnlè who was offering drugs to vendors that she got from her French physician sister-in-law.

These various supply channels explain the price differences between the market, pharmacies and health centers. When vendors get drugs from formal wholesalers, they buy them at the same price paid by pharmacists plus the middleman's commission. Afterwards, they sell it to their customers at an increased price with their profit margin set by competition within the market while taking into account the product's price in pharmacies. Government set pricing for products in pharmacies and health centers adds a fixed amount to wholesale prices that exceeds the informal vendors' markup.

Pharmaceutical supply and distribution in Benin, Nigeria and Ghana

The distinction made above between supply sources of registered and non-registered drugs in Benin brings to mind those proposed by Didier Fassin and Sjaak Van Der Geest, respectively: supply from the formal channels of the study-country and supply from neighboring Anglophone countries: Gambia for Senegal and Nigeria for Cameroon.

Supply sources from Benin's formal channels mentioned above not only underscore the pharmaceutical system's dysfunctions, but also point out another organizational structure unlike that which is usually presented. An informal sector is added to the private and public sectors and plays an important role in terms of pharmaceuticals distribution in Benin (Baxerres, 2010).

The second supply source of pharmaceuticals sold in the informal market, Anglophone countries, emphasizes realities that have never been described in anthropological literature before. Nevertheless, they are long-standing. Didier Fassin and Sjaak Van Der Geest have already highlighted them in their studies conducted in the 1980s. This research, carried out in Benin, shows that links between the informal market in Benin and Nigeria reach back to the late 1970s when the two government structures responsible for the importation and the distribution of pharmaceuticals in Benin faced management problems that resulted in periods of pharmaceuticals shortages in the country, particularly between 1976 and 1980. To better understand the articulation of those various markets, further analysis of these phenomena is needed by comparing Benin's supply sources with those of its neighboring Anglophone countries.

Comparison of supply channels

This study indicates that Benin, when compared to Nigeria and Ghana, has modes of pharmaceuticals supply that maintain close links with Europe and particularly France. These links slow down the diversification of pharmaceuticals supply sources observed in Nigeria and Ghana since the 1970s.

At the time of the study, pharmaceuticals supply in Benin was carried out by four private wholesalers and the CAME.

The private wholesalers mainly import pharmaceuticals that are marketed under a trade name. They can be patented, original or generic drugs. According to the commercial directors of the four wholesalers, these medicines account for 70% to 85% of their sales. When viewed through the description of "French drugs" or "pharmacy drugs," the origin of these drugs is predominantly from Europe, North America and, to a lesser extent, Asia. They are manufactured by large multinational pharmaceutical companies. Despite the disparate origin of these drugs, wholesalers essentially get drugs from six French central purchasing agencies (EPDIS, PLANETPHARMA, PIEX, TRIDEM, EURIMEXPHARMA and CIDER) as well as through French forwarding agents. The interviewed commercial directors give various factors to explain this fact, such as payment and transport facilities, network longevity and linguistic proximity to France. Today, Asian pharmaceutical firms that want to sell their products in Benin are forced to use French central purchasing agencies and forwarding agents.

The CAME distributes pharmaceuticals that are included on the national essential drugs list determined by Benin's authorities. The majority are generics marketed under their INN. The CAME selects the products it distributes through invitations to tender submitted

to previously approved pharmaceutical firms or suppliers. Because of their competitiveness, a high percentage of the drugs distributed by CAME since its creation in 1994 is manufactured by firms located in "emerging" Asian countries (India and, more recently, China). Since the 1970s, these countries have developed a large pharmaceutical industry that specializes in producing generics. According to its general manager, products distributed by CAME have been increasingly coming from Asia since the beginning of this century. However, suppliers are mainly European. The main CAME suppliers are the Danish organization MISSIONPHARMA, IDA (International Dispensary Association) in Holland and Ldi International in Belgium. All three are private organizations, either for-profit (MISSIONPHARMA, Ldi International) or not-for-profit (IDA). Their stated aims are to distribute essential, inexpensive and quality drugs to the world's poor. These organizations play the role of central purchasing agencies, and the quantity of drugs they buy allows them to offer inexpensive prices that interest CAME. Other than these three organizations, the majority of CAME suppliers are located in France.

Unlike Benin, for several decades Nigeria and Ghana have developed direct relationships with "emerging" Asian countries that produce medicines. During an interview conducted for this study, one leader of Ghana's *Food and Drugs Board* specified that the Indian pharmaceutical industry currently accounts for approximately 70% of Ghana's medicine imports in the public and private sector combined. This percentage has risen since the 1970–80s. Today, China is close behind India but still contributes a minority to all of Ghana's imported medicines. European firms supply just 15% of the country's medicine supply from foreign sources. The remainder is provided by medicines from the United States, Malaysia, South Africa, Nigeria and Egypt. In Nigeria, half of the needs for imported medicines and cosmetics is met by the large pharmaceutical multinationals, mainly from Europe and North America, while the other half comes from importers mainly supplied by Asia (Mission économique de Lagos, 2005). Drugs from Nigeria and Ghana—generics marketed under a trade name and intended for the private market (packaged in unit boxes)—are mainly manufactured in India and Indonesia, as mentioned above.

Nigeria does not have a public wholesaler. Through invitations to tender from each state and national health programs, public as well as private health centers are directly supplied by Nigerian producers and private distributors located within the country (Mission économique de Lagos, 2003). The private sector of Ghanaian pharmaceuticals distribution is also very dynamic. Unlike Nigeria, this country has a public wholesaler, the Central Chemical Store with the Regional Medical Stores filling in at the regional level. Managed by the Ghana Health Service, it mainly distributes generic products from suppliers selected by invitation to tender. The majority are private wholesalers based in Ghana. Therefore, through their private sector pharmaceuticals distribution, Nigeria and Ghana have maintained favorable links with "emerging" Asian countries for many years. As explained by informants in Lagos and Accra, Nigerian and Ghanaian businessmen involved in the pharmaceutical and toiletries sector travel regularly between their homeland and "emerging" Asian countries to place orders or establish connections with firms whose products they will distribute in their own country.

Nigeria's and Ghana's links with India can be explained by the use of English and these three countries' membership in the Commonwealth; this certainly facilitated the interweaving of commercial links that Benin does not have. Also, an active Diaspora of Ibo traders, from one of Nigeria's main sociolinguistic groups, is present in Southeast Asia (Galtier & Tassou, 1998). More generally, Chinese goods have been imported to Nigeria on a massive scale for several years (Igué, 2003). However, beyond these historic and linguistic links, it seems that the organization of pharmaceutical supply and distribution in Nigeria and Ghana has also facilitated maintaining links with Asian countries that produce pharmaceuticals.

Comparison of pharmaceuticals distribution modes

In Benin, pharmaceuticals distribution falls on both the private and public sectors. Although the financial volume of the private sector is four times greater than that of the public sector (32 million euros versus 7 million euros – Mission économique de Cotonou, 2007), the public sector plays a major role in terms of supplying medicines in the country. We noted before that in Nigeria and Ghana the public sector plays a less significant role in this area, and even no role at all in the case of Nigeria. The private sector involves many actors in comparison to Benin where private wholesale pharmaceuticals distribution is concentrated among four wholesalers. More than 300 private wholesalers are registered with Ghana's Pharmacy Council; more than 500 are registered to the Pharmacists Council of Nigeria (Sources: lists established on 31 December 2006 by Ghana's Pharmacy Council; interview with NAFDAC staff member in Lagos, August 2007). These figures do not mean that the private pharmaceuticals market is more developed in these Anglophone countries than in Benin where a higher concentration of distribution exists for a limited number of wholesalers. However, different logics underlie the organization of pharmaceuticals distribution in these three countries. Regulations for these activities are more flexible in Ghana and Nigeria than in Benin.

In effect, in both of these Anglophone countries, some of these companies can simultaneously be wholesalers, semi-wholesalers and retailers (Sources: internal documents, Ghanaian *Pharmacy Council*, provided in July 2007), significantly broadening their clientele. In Benin, private wholesalers must only distribute medicines to pharmacies, public health centers and pharmaceutical establishments (Decree n°2000-450 of 11 September 2000). In Nigeria and Ghana, private wholesalers do not distribute all of the medicines authorized in these countries. They only distribute the products of some or even just one pharmaceutical firm(s) as well as playing the role of the firms' advertising agency. Also, they often hold the monopoly for importation of these firms' products in their country. In Benin, the four wholesalers import and distribute the same pharmaceutical products: at least nine-tenths of those authorized in Benin (Article 6 of Decree n°2000-450 of 11 September 2000).

Modes for setting prices for medicines and the distributors' profit margins also diverge between these three countries. In Benin, the government sets the price of pharmaceuticals distributed in the private sector based on recommendations from a tariff board. The price of the drugs sold to the public is determined by applying the coefficient 1.78 to the price (duty-free) paid by wholesalers (Interministerial Decree n°006/MICPE/MSP/MFE/DC/DCCI). Legislation also sets the distributors' profit margins. The private pharmacists have a 27% margin and the wholesalers a 15% one. In Nigeria and Ghana, drug prices and distributors' profit margins are not regulated by authorities but by free regulation of the market and the laws of supply and demand (Sources: Ghanaian *Food and Drugs Law*, 1992 and *Pharmacy Act*, 1994, Nigerian NAFDAC and *Pharmacists Council* Web site: www.nafdacnigeria.org, www.pcnng.org, accessed November 2008). Thus, drug prices fluctuate according to distributors who are in close financial competition with one another, unlike distributors in Benin.

Retail distribution of drugs in the private sector also reacts to different regulation requirements. In Nigeria and Ghana, it does not come under the pharmacist's monopoly, as is officially the case in Benin (Ordinance n°73-38 of 21 April 1973). In these two countries,

two kinds of licences are issued for retail sale of pharmaceuticals: on the one hand, the general licence, which is granted to pharmacists possessing a university degree in pharmacy and who are managing a pharmacy, and, on the other hand, the limited licence that is granted to non-pharmacist managers of "chemical shops" in Ghana and of "patent medicine shops" in Nigeria who nonetheless have a minimum level of education (Ghana: Pharmacy Act, 1994; Nigeria: Poisons and Pharmacy Act, 1958 and Pharmacists Council of Nigeria, 1992). This second kind of business can only sell drugs that are classified as OTC (over the counter) by authorities (those not requiring a prescription) and drugs included in public health programs (anti-malarial drugs, products for family planning, etc.). Benin does not officially recognize the OTC drug category. Legally, pharmaceuticals—no matter what kind—are only available in pharmacies under the supervision of a pharmacist.

Sold without a prescription and through the usual distribution channel, OTC drugs use specific visual marketing techniques to attract consumers and influence their choice of medicines (Buclin & Ammon, 2001; Vuckovic & Nichter, 1997). This clearly imitates the marketing strategies found in the colorful, illustrated packaging used for "drugs from Nigeria and Ghana." This specific packaging is used in Asian countries that produce pharmaceuticals, particularly in India and Indonesia and to a lesser degree in China. Since people belonging to lower social classes are often illiterate in these countries, the use of photos and illustrative drawings successfully attracts these customers. Some drugs manufactured for exportation to Africa, where a considerable percentage of the population has low literacy levels, are developed using the same commercial strategies.

According to Joseph Nyoagbe, head of the Ghanaian *Pharmacy Council*, the lack of any private pharmaceutical distribution level below the pharmacies in the Francophone countries of West Africa explains the high development of the informal drug market in these countries. Indeed, in Ghana, the informal sale of pharmaceuticals has seen little development (Maritoux, 1999); we observed this during the field studies conducted in Accra. When examining the entire African continent, it cannot be denied that awareness campaigns against the informal sale of pharmaceuticals are only conducted in Francophone countries. The REMED organization conducts its campaigns in 15 Francophone countries. In the Anglophone countries, the issue of illegal drug distribution (counterfeit drugs) arises more than that of the informality of the pharmaceuticals distribution channels (Taylor et al, 2001).

Conclusion: liberalization of pharmaceuticals distribution: a significant issue

The study of supply (products, sources of supply) available in the informal drug market in Cotonou provides a general understanding of this phenomenon, which transcends the local framework in Benin and falls outside of the usual explanations (how people use the informal market, formal pharmaceutical system's dysfunctions). We do not want to disregard all other doubts surrounding the pharmaceuticals found in the informal market. Indeed, because it is not under any institutional regulation, this market is more likely to be at risk of counterfeit drugs than other pharmaceutical distribution channels, and as noted we encountered rare instances of this. Nevertheless, it appears through this study that a percentage of the pharmaceuticals' informal market come from Benin's formal networks of distribution channels and those of these nearby countries. Medicines bought in Nigeria and Ghana, or at least some of them, are paid for without breaking any current laws, purchased from formally recognized storekeepers. Therefore, from the study data, it appears that beyond issues regarding drug quality, what is at stake is a kind of economic liberalization of pharmaceuticals distribution through the phenomenon of the informal market. A liberal mode of pharmaceutical distribution can be defined as having limited interference by the government in this domain so free-market competition is unhindered. Conversely, other modes of pharmaceutical distribution assume greater government interference. It appears that Benin's authorities and those of its neighboring Anglophone countries have chosen contrasting options to address this issue. However, conducted outside of the legislation in force in Benin, the practices of some actors (informal vendors) highlight a kind of liberalization of pharmaceuticals distribution.

The legislation in effect in Benin regarding pharmaceuticals distribution has contributed to maintaining supply sources predominantly from France and the rest of Europe. It has slowed down the private market's access to inexpensive generic drugs produced in "emerging" Asian countries and has promoted the supply of expensive medicines manufactured by Western multinationals even though Benin's citizens can barely make ends meet. By comparison, legislation in force in Ghana and Nigeria has enabled the pharmaceuticals market of these countries to open up to broader and more competitive supply sources. Beyond linguistic factors and historical proximity to France, the facts that public authorities set drug prices and distributors' profit margins, that pharmaceutical marketing by these distributors is restricted and that numerous private initiatives do not contribute to overall pharmaceutical distribution slow down the search for less expensive supply sources that generate high profits for intermediaries.

Conversely, the liberal characteristics of pharmaceutical distribution in Nigeria and Ghana have existed for over three decades. Bringing about diversification of supply sources has the direct effect of reducing the cost of products, creating an overall positive impact in countries where populations' purchasing power is low and the government does not, or barely covers healthcare costs. However, liberal pharmaceutical distribution, which generates flexible access to medicines, can ultimately be harmful to the health of individuals. Some pharmaceuticals (otcs) are available without the supervision of a pharmacist, causing high levels of self-medication that is often irrational given the pressure of the economic logic: financial competition between actors in drug distribution and excessive sales stimulated by advertising strategies directly targeting consumers (Ferguson, 1988; Nichter, 1989; Nichter & Vuckovic, 1994; Goel, Ross-Degnan, Berman, & Soumerai, 1996; Kamat & Nichter, 1998; Tan, 1999; Biehl, 2006). Therefore, liberal pharmaceutical distribution should assume that the relevant requirements for public health are maintained and strictly supervised by proper authorities with effective regulatory capacities. This is not always the case for government implemented liberal systems and is impossible in situations, like in Benin, where liberalization occurs in actuality without any supervision by authorities.

The informal pharmaceutical drug market in Benin reflects these issues. Although its actors get their supply in part from Nigeria and Ghana, a kind of liberalization of the pharmaceutical distribution has occurred in Benin for several years with positive effects (drop in the cost of medicines) and negative effects (access to pharmaceuticals has become too relaxed without any supervision by a licensed pharmacist). Study of the informal market makes it possible to highlight and investigate this tension between public health requirements and economic forces. It raises social issues beyond Benin that will have to be addressed by the governments of the countries involved, whether formally or not, in the liberalization of pharmaceuticals distribution. In addition, the ongoing reorganization of markets and regions in Africa in the current globalized context can be updated, far from the sphere of influence defined by colonization. Future studies should go into greater depth in documenting this neoliberal reorganization of markets in Africa.

In addition, data is needed in various contexts, both in the South and the North, on the links between modes of pharmaceutical distribution that are actually in effect in a country and how this country's inhabitants consume drugs.

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