workers a task which becomes trying by its combination of monotony and need for accuracy, but release them for more productive work such as preparing ointments, syrups and drops. The useful output of the department would be increased.

Two designs have recently been suggested at Dabou: a manual model is currently being tried out, but counts only convex shapes (mainly pills or coated tablets). Its design and materials are so simple that if it works it will be something that anyone could "knock together". The second is still at the design stage and is likely to be taken up as a thesis project by an engineering student. The aim, once the technical aspects are perfected, is to mount a small-scale production of machines for any establishments interested.

The purpose of this communication is therefore: (a) to request details of any past or present experiences in this field, in order to have as complete background information as possible for the second project; and (b) to know what the demand for such a machine might be, if production became feasible.

Mr M Babut, the pharmacist of Dabou Methodist Hospital, would be most grateful to hear from anyone interested in any aspect, and may be contacted at the address detailed above.

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Propharmacies: a problematic means of drug distribution in rural Cameroon

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ABSTRACT
Attention is drawn to two fundamental obstacles to an efficient functioning of government-supported drugstores (propharmacies) in rural Cameroon. These obstacles are mismanagement and high prices. Suggestions are offered as to how the drugstores can be made more efficient.

INTRODUCTION

The public health system in Cameroon distributes drugs free of charge among patients reporting at its health centres. At least, that is the rule. In actual fact, however, rural health centres suffer from chronic drug shortages, and are not able to provide drugs during a great deal of the year. As a result, these centres are severely under-utilized, because patients do not visit centres without drugs.

The shortage of drugs is most commonly attributed to the fact that the annual stock supplied by the Ministry is much too small. This stock is indeed too small, and this is not surprising when we consider that the Cameroon Ministry of Health devotes only 12% of its budget to drugs and materials, as opposed to 78% to personnel expenses. In most third world countries the percentage set apart for drugs is around 25%. The low budget is, however, not the only reason for the shortage. Another reason, as we suggest below, is the high frequency of "private use" by health workers and other personnel of drugs meant for public use.

To solve the problem of drug shortage in health centres the idea was conceived of establishing small drugstores next to these centres. Experiments with such "propharmacies", as the drugstores were called, started around 1968 in the North-West Province. The rules and conditions for the functioning of propharmacies were fixed in Arrête No. 8/A/CGSPP/DS/IPH of 2 March 1970.

A propharmacy sells drugs for the lowest possible price (10–15% above the wholesale price). The small profit margin is used to renew and increase stocks. The first drug order with a value of between CFA 100.000 and 500.000 (£200–£1000) is paid for by the local council; after this the propharmacy is supposed to pay. The propharmacy is run by a health worker with low qualifications, whose salary is paid by the state. The ultimate supervision lies with the medical officer in charge of rural and preventive medicine in the district, but the chief nurse of the local health centre is usually also involved in the supervision.

The purpose of propharmacies is that rural health centres can continue to function even if their drug

supply has been exhausted. The nurse at the health centre simply writes a prescription with which the patient can obtain the necessary drugs in the nearby propharmacy.

Official reports and publications have been quite positive about this solution. Nchinda (1978), who provided more detailed information about its set-up, wrote that the propharmacy proved to be very successful in two main respects: it ensured a continuous supply of drugs and was able to sell them at very low prices. He listed 22 essential drugs stocked in the propharmacies and compared their prices with those paid in the private pharmacy. The prices in the pharmacies were on average, about four times higher. Nchinda concluded: "Although traditionally the tendency has always been to provide free treatment at the rural health centres, it was argued that the advantage of having drugs available all the time at low cost greatly outweighed that of having free treatment occasionally, with drugs being out of stock most of the time. Also, getting the people to participate in their own care by paying modest amounts for their treatment was an important factor to be encouraged".

The only hesitation with regard to the propharmacy which published reports have shown concerns the risk of mismanagement. This reservation was expressed not only by Nchinda (1978), but also by Njikam (1977) and by E Wansi (personal communication). Our research in the south of Cameroon suggests that mismanagement in fact constitutes a formidable obstacle to the good functioning of propharmacies and that, moreover, the prices of drugs are not low.

RESEARCH PROJECT

This paper discusses part of a much broader medical-anthropological study in a southern division of Cameroon. The objective was to gain an understanding of problems encountered in the distribution and use of western drugs, and to suggest how these problems might be resolved. The study dealt largely with four different types of drug distributors: public health institutions, private health institutions, licensed pharmacies, and informal drug-vendors. The propharmacy lies somewhere between the public health institution and the licensed pharmacy. It was not intended to obtain statistics about the functioning of health institutions in the whole country. The purpose was rather to make an in-depth study in a limited area. It was hoped that such a case study could reveal some of the more obscure causes of problems with drug distribution. Only after such exploratory research would it be possible to say whether a more general and quantitative investigation were feasible and how this might be carried out.

The scope of the study was limited not by lack of funds but by a deliberate choice. The subject was a delicate one, requiring tact and caution. A large-scale survey geared toward sampling and counting was bound to fail. Research techniques, therefore, included participant observation, open-ended interviewing, collection of case histories, and the study of reports, financial accounts and other files. Although the emphasis of the research lay on distribution at the base (among patients), the distribution chain was followed up to the Ministry of Health and the import agencies. Interviewing and the study of documents took place at all levels of distribution.

RESEARCH FINDINGS AND DISCUSSION

A preliminary report of the total research project (Van der Geest 1981) has been sent to a limited group of people for comment. The main conclusion of the research was that public health institutions which distribute drugs freely often faced drug shortages, whereas private institutions managed to have a continuous supply of drugs. As a result, patients frequently preferred private health services to public ones, although they had to pay for their drugs in the former. Paradoxically, for people in need of medical assistance, obtaining "free drugs" proved more expensive than buying them. "Expensive" here should be understood in terms of time and health, as well as in financial terms.

One suggestion offered in the general report was to improve drug distribution by legalizing and facilitating the informal sale of drugs by petty traders, who proved to be the only agents available throughout the country, including the most remote villages, and whose commercial incentive guaranteed a relatively good service, provided the authorities did not thwart their activities. Another suggestion was a limited and carefully regulated commercialization of the public health sector. In this paper a similar suggestion is made with regard to the propharmacy.

Once again, it should be emphasized that the findings of our research cannot all be applied to the whole of Cameroon, at least not without further study. To what extent some conclusions are likely to be justified more generally will be considered below.

MISMANAGEMENT

The private use of public goods is a general phenomenon which occurs in varying degrees in virtually all bureaucratic states. The difference between rich and poor countries is, however, that the latter are more vulnerable to it, because their resources are more limited. In Cameroon, for example, the private use by health personnel of drugs in public health institutions seriously hampers efficient distribution. It is remarkable, however, that this situation in the public sector contrasts sharply with conditions in the private sector. Private hospitals, dispensaries, pharmacies and even illegal drug vendors seldom run out of drugs. The explanation is not far to seek. For private workers, a constant supply of drugs and the best possible services are imperative if they are to earn their living. For those in public employment this imperative does not exist. To simplify the matter to the extreme: for public employees mismanagement is more advantageous than good management. Their salaries are not affected by the quality of their services and the private use of public resources (both drugs and time) allows them to supplement their (low) income.

This factor was not taken into account in the setting up of propharmacies. Those responsible for the management of propharmacies are dealing with commodities which belong to the community. As a result the inbuilt tendency to abuse remains. This tendency would be eliminated only if the propharmacy were to become a commercial enterprise in which the seller was also the owner, or directly responsible to the owner.

We found that, in the division where our research was done, mismangement was indeed the main factor causing the collapse of propharmacies. We shall draw attention to three frequent forms of misappropriation.

Since the initial stock of drugs is provided by the local council, it is more expedient for those attached to the propharmacy to appropriate the drugs than to sell them; and if they sell them, it is more expedient to take the money than to reinvest it in new drugs. Of course, this is a gross simplification of possible developments. It does not take into account inhibiting factors such as control and personal "honesty". A more elaborate discussion of the exact social processes leading to mismanagement falls outside the scope of this paper. Let it suffice that we concluded that control was often extremely defective (sometimes the "controller" caused the most serious mismanagement because, as a controller, he was in the most favourable position to help himself). We would emphasize that we reject the application of moral epithets, such as "dishonest", to practices of mismanagement, which should be viewed within their total social context. Traditions of strong family obligations and gift-giving customs, paired with poverty and bad health, go a long way to explain what we, in technical terms, have called "mismanagement".

The opening of a propharmacy has often been regarded as a temporary chance to acquire some extra profit. Those involved in its management would try to run it in such a way that at least part of the starting capital was used to their own advantage. This was mainly done in two ways: (1) by taking drugs for private use (including gifts to relatives and friends); and (2) by taking the proceeds of drugs sales. It is no wonder then, according to an informant at the Ministry, that a large number of propharmacies have had a short existence of one or two years, until all resources were exhausted. Usually a long period of inspection and negotiation followed, during which representatives of the local community attempted to persuade the authorities to reopen the propharmacy. If they succeeded the same process of mismanagement would repeat itself.

A third form of mismanagement was the following. The presence of a propharmacy next to a dispensary was a unique chance to clandestinely sell drugs from the dispensary through the propharmacy. This implied that drugs meant for free distribution were sold to the public. Such a practice was not easily noticed, but seemed to occur quite frequently. A famous example was a case in the north-west province, where dispensary and propharmacy drugs were mixed and sold together at an enormous profit.

DRUG PRICES

It is doubtful whether propharmacies have often been successful in providing drugs at low prices. However, before expressing our views, we need to explain two aspects of the wholesale supply of drugs in Cameroon. First, there are three types of wholesalers: the Ministry, Church organizations, and commercial companies. Drug prices are low in the first two but much higher in the last (see Table 1). Secondly, drugs packed for the retail trade and intended for individual use are in general much more expensive than the same drugs packed for the wholesale trade and intended primarily for use in hospitals. The fact that most drugs supplied through commercial importers are packed for retail makes their prices especially high (Table 1).

Drug prices in the propharmacies obviously depend largely on which wholesaler supplies them. Because the propharmacy is a nonprofit institution, one would expect it to be permitted to order drugs from the two cheap nonprofit wholesale organizations; but this was not the case. As already mentioned, most of the drugs provided by commercial firms are sold in retail packing, and are more than four times as expensive as drugs provided by the Ministry. Propharmacies have therefore been unable to supply cheap drugs to the villages, even by keeping strictly to the 10–15% profit margin. As a result, propharmacies, whose only purpose is to provide cheap medicines, and whose running is completely financed by the public authority, have been forced to sell drugs for higher prices then Church institutions which have to finance themselves, often mainly through the sale of drugs. Putting it differently: drugs sold with a profit of 15% in propharmacies are more expensive than drugs sold with a profit of 400% in Church institutions (Tables 2 and 3).

Table 1. Differences in average wholesale price for 47 drugs at three drug suppliers (percentages only)

Ministry of Health	100%
Church organizations	135%
Commercial import firm (Groupement des Pharmaciens du Cameroun):	
Drugs in wholesale packing	316%
Drugs in retail packing	539%

Moreover, some propharmacies were not prepared to sell drugs at such a low profit, and were in fact functioning as ordinary private pharmacies, making about 50% profit. Ironically, it seems that propharmacies which adopted this system have been the most viable and have functioned best. This observation suggests that an improvement of the situation (which does not function as it should because of mismanagement and too high prices) should be sought in a twofold solution which may at first sight seem contradictory: commercialization of propharmacies and reduction of their prices.

CONCLUSIONS AND RECOMMENDATIONS

The purpose of propharmacies, as defined by law, is to provide cheap medicines in regions where the population has few financial resources. In this paper we have argued that in one area of Cameroon this purpose is not fulfilled, mainly for two reasons. Mismanagement leads to the speedy collapse of propharmacies, and those propharmacies which do function do not provide cheap medicines because

Table 2. Average price differences for 22 drugs sold to patients by eight distributors (percentages only)

Catholic health centre, Bimengue	57%
Presbyterian hospital, Enongal	75%
Catholic health centre, Minkan	84%
Propharmacy, Mvangane	94%
Private pharmacies (official prices)	100%
Private pharmacy, Ebolowa	110%
Propharmacy, Ambam	112%
Presbyterian health centre, Olamze	113%

Table 3. Prices in CFA of 10 frequently used drugs sold to patients in three different institutions (in parentheses: expressed as percentages of pharmacy prices)

	Private pharmacy Ebolowa	*Propharmacy Mvangane*	*Protestant Hospital Enongal*
Alcopar 5 g sachet	434 (100)	450 (104)	150 (35)
Aspirine 0.5 g	7 (100)	5 (71)	5 (71)
Auréomycine 3% tube	301 (100)	230 (76)	150 (50)
Bipéni	208 (100)	170 (82)	200 (96)
Chloroquine 100 mg	10 (100)	7 (70)	10 (100)
Extencilline 1.2 m. amp.	370 (100)	400 (108)	250 (68)
Flavoquine 200 mg	27 (100)	10 (37)	15 (56)
Notézine	40 (100)	22 (55)	15 (37)
Pénicilline 1 m. amp.	245 (100)	250 (102)	100 (41)
Quinimax 0.4 g amp.	137 (100)	200 (150)	150 (109)
Average price differences	(100)	(85.5)	(66.3)

government regulations do not allow them to obtain drugs at low wholesale prices.

To what extent do conditions in this division of South Cameroon occur in other parts of the country where propharmacies have been erected? It is clear that the problem of high drug prices exists all over the country, since the rules of supply and pricing apply everywhere. The question is more difficult with regard to mismanagement. Interviews and cursory conversation with well-informed sources in other regions and the Ministry of Health suggest that the conditions observed in South Cameroon exist throughout the country. On the other hand, Dr T C Nchinda (personal communication) reports that he knows over thirty propharmacies in five divisions which have been in existence for ten years. Exact figures for the whole country are lacking. We can only say that our impression is that mismanagement occurs quite commonly in Cameroon. Therefore our first recommendation is for a general investigation of the functioning of propharmacies throughout the whole country. This is the more needed because – in contrast with early optimistic reports – people seem well aware that there is something wrong with many propharmacies.

If our observations apply more generally, what recommendations can be derived from our case study? If we are correct in our view that the inbuilt tendency to mismanagement and the high wholesale price of drugs constitute the main obstacles to the efficient functioning of propharmacies, recommendations should tackle precisely these two factors. Concrete suggestions for an amelioration of the situation would be as follows: (1) The propharmacy should be turned into a private enterprise. The seller of the drugs must become the owner of the drugs. This change would provide an inbuilt check against mismanagement. (2) The owner should be allowed to increase his profit from 15% to about 40%. (3) The owner should be allowed to purchase drugs for much lower prices than at present. A reduction to one-third of the present wholesale price should be feasible. If these proposals were put into practice, drugs would become considerably cheaper despite an increased profit margin, and a continuous supply of drugs would be guaranteed.

We were particularly motivated to write this paper and to show the negative aspects of the propharmacy system because it seems that the problematic character of the system is not sufficiently recognized by certain decision-making bodies in the health service. An ambitious national health project, which has now been shelved, was to be grafted onto the propharmacy system. The project aimed at changing the present free distribution of drugs into a system where drugs would be made available at low prices. The vehicle through which the drugs were to be distributed was the propharmacy. Although the project proposed some important improvements in the propharmacy, it did not alter its inbuilt tendency to mismanagement. By this we mean the fact that the drugs being sold do not belong to the seller. If in future the project were accepted without changing this aspect of the propharmacy, the project would be likely to fail.

In conclusion, this paper gives only a simplified portrait of the situation. A more complete discussion of problems and suggestions with regard to propharmacies in Cameroon is contained in our preliminary report (Van der Geest 1981).

Our proposals constitute a threat to the commercial interests of licensed private pharmacists. An improvement of the public system of medicine distribution would be disadvantageous to them. Their enterprises flourish at present because the public system fails. It is therefore to be expected that they would oppose the changes which have been suggested in this paper. Since they also have considerable political influence, the most realistic solution might be to let them profit from the proposed changes by allowing them an intermediary role in the distribution chain.

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NOTE

We want to make clear that the critical tone of this paper is meant as a constructive contribution to the solution of health problems in Cameroon. We wish to emphasize that the delicate information presented here was only acquired thanks to the genuine wish of Ministry officials, health workers and patients to improve health conditions in the country. It should be borne in mind that problems of mismanagement were repeatedly raised in unpublished ministerial documents which we were allowed to study.

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