



HEALTH RESEARCH IN AFRICA

High Quality Research with Impact on Clinical Care



Original Article

Current State of the Drug Logistics System in Cameroon

État des lieux du système logistique des médicaments au Cameroun

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List of abbreviations

CENAME: Centrale Nationale d'Approvisionnement en Médicament
CNLD: Comité National de Lutte contre la Drogue
CNLS : Comité National de Lutte contre le Sida
CNTS : Centre National de Transfusion Sanguine
DPML : Direction de la Pharmacie ,du Médicament et des Laboratoires
EPI : Expanded Program on Immunization
FEFO : First Expired First Out
FIFO : First In First Out
FOSSA : Formation Sanitaire
FRPS : Fond Régional pour la Promotion de la Santé
GP : Grossiste Privé
HIV: Human Immunodeficiency Virus
LANACOME : Laboratoire National de Contrôle qualité des Médicaments et d'Expertise
LMIS : Logistic Management Information System
LNME: Liste Nationale des Médicaments Essentiels
LSAT : Logistic System Assessment Tool
PEV : Programme Elargi de Vaccination
PNLO : Programme National de Lutte contre Onchocercose
PNLP : Programme National de Lutte contre le Paludisme
PS : Programme de Santé
PTF : Partenaire Technique et Financier
SWOT: Strength, Weakness, Opportunity , Threat
TFP: Technical and Financial Partner

ABSTRACT

Introduction. The logistics system is based on compliance with the six good principles of logistics: "the right products in the right quantities and in the right condition are delivered to the right place at the right time for the right price". This study focused on a situational analysis of the drug supply logistics system in Cameroon. **Methodology.** This was an evaluative analytical study carried out over 14 months, on the health pyramid. Data were collected and analyzed using the LSAT tool. **Results.** 160 pharmaceutical products were identified. The SIGL component involves the most technical and financial partners (PTF). CNLS, PEV and PNLP are the most supported programs, with 4 TFPs. The Centre region receives the most support for supply chain activities. 37.5% of health programs and 60% of health facilities have full-time logistics managers. 75% of health programs have a well-defined, computerized SIGL. 40.9% of facilities use the National Essential Drug List for selection. Poor quality of service in health facilities, high drug prices and the existence of parallel channels each account for 22.22% of obstacles to access to medicines. Cultural and religious aspects each account for 11.11% of barriers to access to medicines. **Conclusion.** Cameroon's drug logistics system is well developed, but requires improvement in all its components.

RÉSUMÉ

Introduction. Le système logistique s'appuie sur le respect des six bon de la logistique « les bons produits dans les bonnes quantités et en bonne condition soient livré au bon endroit, au bon moment pour le bon prix ». Cette étude a porté sur l'analyse situationnelle du système logistique des approvisionnements en médicament au Cameroun. **Méthodologie.** Il s'agit d'une étude analytique évaluative et réalisée durant 14 mois, sur la pyramide sanitaire. La collecte et l'analyse des données ont été faits à l'aide de l'outil LSAT. **Résultats.** 160 produits pharmaceutiques ont été identifié. La composante SIGL implique le plus de partenaires techniques et financiers (PTF). Le CNLS, PEV et PNLP sont les programmes les plus soutenus avec 4 PTF. La région du Centre est la plus soutenue dans les activités de la chaîne logistique. 37,5% des programmes de santé et 60% des formations sanitaires disposent de responsables logistiques à temps plein. 75 % des programmes de santé ont un SIGL bien défini et informatisé. 40,9% des structures utilisent la Liste Nationale des Médicaments Essentiels pour la sélection. La mauvaise qualité de service dans les établissements de santé ; les prix élevés des médicaments et l'existence du circuit parallèle représentent chacun 22,22% des obstacles à l'accès aux médicaments. Les aspects culturels et religieux viennent chacun avec 11,11% des barrières à l'accès aux médicaments. **Conclusion.** Le système logistique des médicaments au Cameroun est bien développé, mais nécessite des améliorations dans toutes ses composantes.



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KEY FINDINGS OF THE STUDY

The issue addressed in this study

The current state of the drug logistics system in Cameroon.

What this study adds to our knowledge

- The SIGL component involves the most technical and financial partners (PTF).
- CNLS, PEV and PNLP are the most supported programs.
- The Centre region receives most of the support for supply chain activities.
- 37.5% of health programs and 60% of health facilities have full-time logistics managers.
- 75% of health programs have a well-defined, computerized SIGL.
- 40.9% of facilities use the National Essential Drug List for selection.
- Poor quality of service in health facilities, high drug prices and the existence of parallel channels each account for 22.22% of obstacles to access to medicines.
- Cultural and religious aspects each account for 11.11% of barriers to access to medicines.

INTRODUCTION

Logistics is the activity whose purpose is to manage physical flows, and the data (informative, customs and financial) relating to them, with the aim of making available the resources corresponding to (more or less) determined needs, respecting the economic and legal conditions provided, the degree of quality of service expected, the safety and security conditions deemed satisfactory. The objective of a logistics system is not limited to the effort to ensure that the products arrive at the right place. Ultimately, the goal of any logistics system for health programs is to ensure that customers benefit from product safety. The logistics system is based on compliance with the six GOODs of logistics, i.e. "the RIGHT products in the RIGHT quantities and in the RIGHT condition are delivered to the RIGHT place at the RIGHT time for the RIGHT price", a concept which, if complied with, ensures an efficient logistics system at all levels of the system. The objective of a logistics system is not limited to ensuring that products arrive at the right place. Ultimately, the aim of any logistics system for healthcare programs is to ensure that customers benefit from product safety. Efficient supply chains contribute not only to product safety, but also to the success (or failure) of public health programs [5]. But the frequent absence of adequate infrastructure, standardized processes, trained personnel and harmonization between stakeholders regularly results in an alarming availability of quality medicines at affordable prices for patients. [9]. It is with this in mind that this study was conducted, with the aim of carrying out a situational analysis of the logistical management of drug supplies in Cameroon.

METHODOLOGY

This is an evaluative analytical study, which was carried out over 14 months from January 10, 2021 to March 30, 2022, across the entire health pyramid. The target population included all stakeholders involved in the logistical management of drug supplies. She is made of : DPML, LANACOME , CENAME , the Health programs

, the Private wholesale distributors, Technical and Financial Partners , the FRPS , Public health facilities and Private health facilities. Data collection was carried out by semi-directive interview, using a semi-open, self-administered survey form based on the Logistics System Assessment Tool (LSAT) and the Guidance on Assessment of the Health System and its Core Functions . The analysis of data was carried out using the SWOT analysis which is a strategic analysis tool which aims to establish an overall diagnosis (internal and external) of the current situation of a company, a part of it or of a project. Les variables de cette étude sont les suivantes :

- List of essential medicines
- List of marker drugs
- Therapeutic protocols for health programs
- The various players by health level and component
- Strengths and weaknesses
- Threats and opportunities
- Mapping of partner interventions

RESULTS

1. Medicines from health programs present in the LNME

Just 43% of products used by the national committee to fight cancer are included in Cameroon's national list of essential medicines. Only 14% of CNLD medicines are included in the LNME. 71% of pharmaceutical products used in the response against cancer COVID 19 are present in the LNME.56% of CNTS products are present in the LNME.100% of drugs used in the fight against onchocerciasis are present in the list of essential drugs. Drugs used for the health of the reproduction are 81% present in the LNME.

2. Tracer drugs

Reproductive health has a strong presence in the list of tracer drugs, with a rate of 28.89%. Support for COVID 19 comes in second position with an attendance rate of 4.44% followed by the PNLO which only has a 2.22% attendance rate. Other programs are not represented in this list.

3. Actors in the logistics management of drug supplies

These actors differ by level of the health pyramid.

Table I: Actors by level in the health pyramid

Central	Intermediate	Peripheral
Manufacturers	Regional public health delegations	Health districts
DPML	Regional funds for health promotion	Health facilities from 5th to 7th category
LANACOME	3rd and 4th category health facilities	
CENAME	Community pharmacies	
Health programs		
Private wholesale distributors		
1st and 2nd category health facilities		
Reference hospitals		
Technical and financial partners		

The central level has 9 players, the intermediate level has 4 players and the peripheral level has 2 players involved in the logistical management of health product supplies. The actors can also be broken down by component of the logistics system.

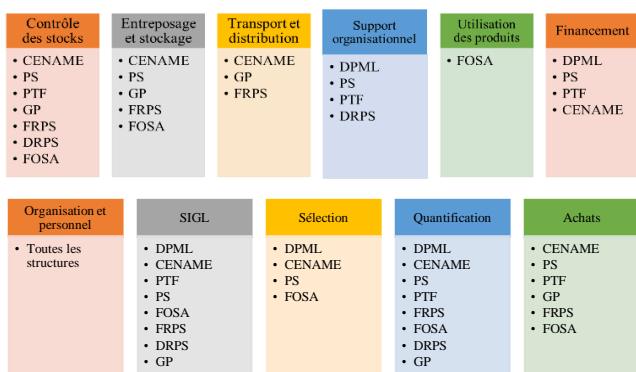


Figure 1 : Actors by component

4. Intervention mapping of the different partners

The LMIS component is the one that involves more PTFs. It is followed by the forecasts. Selection is the component where fewer TFPs intervene. In addition to State support, health programs benefit from support from certain technical and financial partners. Some TFPs choose the regions in which they can implement their activities based on their missions. The central region with 9 TFPs is the most supported in logistics chain activities. It is followed by the regions of the North, Far North, Adamaoua and the Littoral with 8 TFPs. The South and North-West regions benefit from national support from certain TFPs.

5. Indicators by component

a) Organization and staff

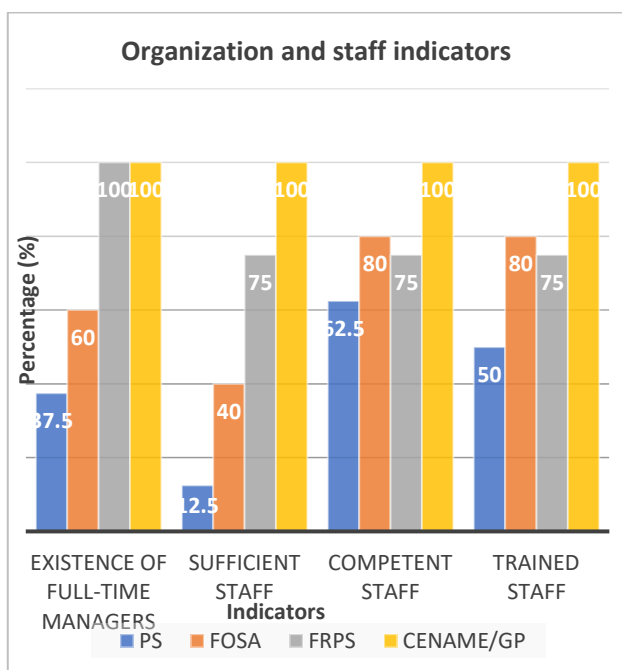


Figure 2 : Organization and staff indicators

100 % of regional funds for health promotion (FRPS) and CENAME/private wholesaler have full-time logistics managers. On the other hand, 60% of health facilities and 37.5% of health programs have full-time logistics managers. 100% of CENAME / private wholesalers have sufficient, competent and trained staff. Health facilities (fosa) have 80% trained and competent staff and 40% sufficient staff. FRPS have 75% of their staff sufficient, competent and trained. Finally, fosa has 50% trained staff, 62.5% competent staff and just 12.5 sufficient staff.

b) LMIS

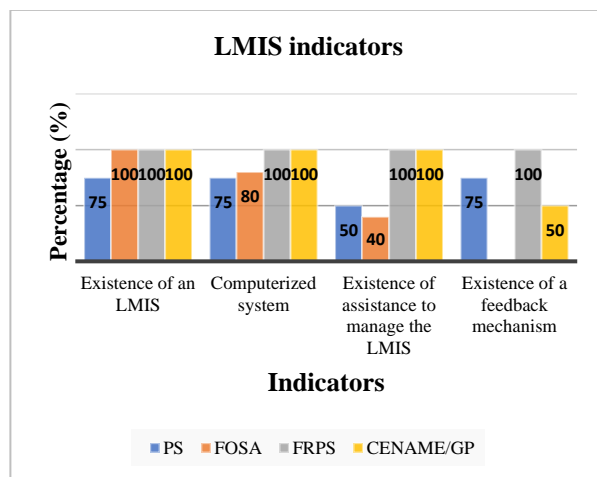


Figure 3 : LMIS indicators

100% of wholesalers have a computerized LMIS and assistance in managing it. 75% of health programs have a computerized LMIS and a feedback mechanism. Just 50% of these health programs have assistance in managing their LMIS. Concerning fosa, 100% have an LMIS, 80% have computerized it and just 40% have assistance to manage this LMIS. 100% of FRPS have a feedback mechanism and only CENAME among national wholesalers has a feedback mechanism.

c) Selection

The national list of essential medicines and management protocols each accounted for 40.9% of pharmaceutical product section sources. Customer needs and average monthly consumption represented 13.63% and 4.54% of the selection sources, respectively.

d) Forecast

Available stock data accounted for 27.27%, followed by consumption and distribution data with 24.24%. Dispensing data followed with 18.18%, and concerned only health facilities.

e) Purchases

For purchases, 50% are by tender, 20% by direct order, 12.5% by purchase from partners and 12. % are donations.

f) Inventory control procedure

FEFO/FIFO policies exist at 100% of the facilities concerned, 87.71% of facilities have maximum/minimum stock control principles, 78.57% of facilities have experienced stock-outs in the last 12 months and just 37.5% have clauses for redistributing pharmaceutical product surpluses.

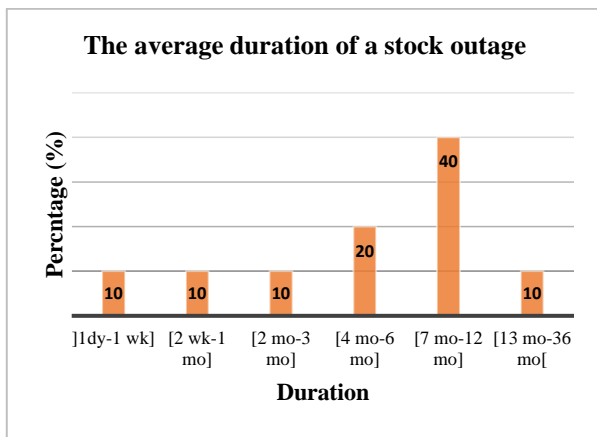


Figure 4: The average duration of a stock outage

40% of facilities experienced stock-outs of between 7 and 12 months, 20% experienced stock-outs of between 4 and 6 months. Antibiotics accounted for 14.81% of stock-outs, followed by analgesics and anti-inflammatories at 11.11% each. Oral contraceptives account for 7.4%. Out-of-stock situations and unpaid supplier invoices are the most frequent causes of stock shortages, with a rate of 13.63. Loss of customer confidence accounts for 26.66% of the consequences of stock shortages, while 20% of the consequences are represented by a drop in sales.

g) Organizational support

Supervision is in place at 75% of the facilities concerned, and 50% of these have an established schedule for supervision. 37.5% of supervisions take place every six months, 25% every year and 12.5% as soon as possible. Financial constraints and lack of transport are the main obstacles, each accounting for 33.33%, followed by insufficient resources and reluctant facilities, each accounting for 16.66%.

h) Warehousing and storage

72.72% of facilities have storage procedures and cold chain requirements. Concerning storage capacity, 81.81% of facilities have sufficient storage capacity to cover all their needs.

i) Transportation and distribution

This component concerns CENAME, private wholesalers and FRPS.

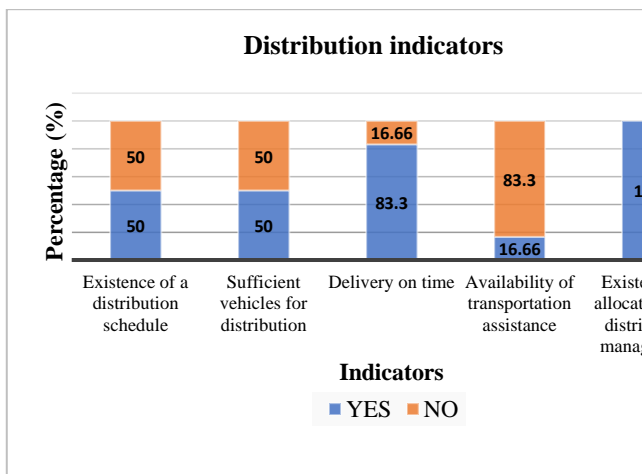


Figure 5: Distribution indicators

100% of structures concerned have allocations to manage distribution in terms of vehicle purchase, fuel for distribution, vehicle maintenance and drivers' salaries. 83.3% of structures deliver on time; 50% have distribution calendars and a sufficient number of vehicles for distribution, and just 16.66% benefit from assistance in transporting their products. On-site deliveries are carried out by all distribution structures, but 83.33% of structures were involved in direct collection from customers.

j) Use of products

This component is only reserved for health facilities.

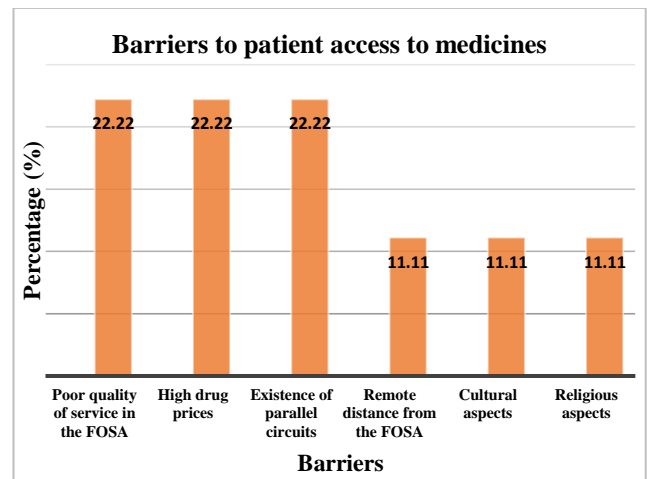


Figure 6: Barriers to patient access to medicines

100% of health facilities had guidelines on standardized treatments. Poor quality of service in health facilities, high drug prices and the existence of parallel channels each account for 22.22% of obstacles to access to medicines.

DISCUSSION

Despite the number of cancers which continues to increase over time and given the very high incidence and lethality that are increasing, Cameroon does not have national guidelines for the management of the most common cancers. The fight against drugs has a predominantly private supply circuit despite the existence of treatment protocols. The EPI and the PNLO follow WHO requirements. As for the CNTS, only the reagents are in the LNME but not the labile blood products because on the one hand their production is not systematic but rather at the request of the prescribing doctors and on the other hand several prescribers are unaware still have the possibility of having them or are not trained in their prescription. The percentage of reproductive health products present in the LNME can be explained by the commitment made by the Government with the support of development partners to improve the availability of quality contraceptive products following frequent shortages of stocks of contraceptive products observed at all levels of the health pyramid. The low rate of representation of health programs in the DPML list of tracer drugs may be due mainly to the absence of a clear logistics management information system. The LMIS involves the greatest number of technical and financial partners and this may be due to the major and primordial importance given to the heart of the logistics system which is data (the type of data and the quality of the

data). Without data no reflection can be undertaken, nor no decision can be made. Regarding the intervention of TFPs by health program, this can be explained by the different missions and objectives or specifications of each TFP, but also given the high mortality rate from malaria, HIV, maternal health and the increasing challenges of vaccination [9]. About the intervention of TFPs by region, this can be explained by the different missions or specifications of each PTF and the fact that the Central region brings together the majority of strategic structures involved in the reflection, development and implementation of policies.

Most of the health programs concerned have novice staff, who lack training or are not sufficiently trained in the logistical management of health inputs. Also these health programs are not integrated into the training cycles offered by certain partners. Feedback is only effective at the level of the FRPS, health programs and CENAME. This is explained by the fact that these structures are each involved at their own level in the management of stocks from entry into the country to the point of use. There is also a need and need to share information with other players in the logistics system.

In selection, the results may be due on the one hand to the non-updating of the LNME since 2017 when good practices would require it to be updated at least every two years, on the other hand the LNME is unavailable or not sufficiently disclosed in certain structures and also there is an absence of inputs from certain programs in the LNME.

In the purchases, according to the Ministry of Finance on the execution of finance laws, monitoring and control of the execution of the budget of the State and other public entities; acquisitions of goods and services are made in Cameroon in three forms, namely by box (purchases of less than 500,000 CFA francs); by administrative purchase order (purchases between 500,000 fcfa and 4,900,000 fcfa) and by procurement (purchases greater than 5,000,000 fcfa). And in procurement, Cameroon prioritizes calls for tender [14].

Concerning stock shortages, the results about antibiotics, probably due to overconsumption with the advent of the COVID 19 pandemic.

The supervisions were carried out but not in all structures due to financial constraints, the absence of means of transport, insufficient resources or even refractory structures.

The results about distribution can be explained by orders that do not arrive at the same time, making it impossible to have a well-established and respected distribution schedule. However, there are possibilities to make grouped deliveries. The low assistance is explained by the weak involvement of TFPs in distribution. In relation to the use of products, despite the existence of directives on standardized treatments in health facilities, there is a lack or insufficiency of staff training, poor organization of services, medicines not approved and not in the LNME leading to prices that are difficult to regulate, multiple stock shortages, poor road conditions and insufficient awareness among the population.

CONCLUSION

At the end of our study aimed at conducting a situational analysis of the logistics management of drug supplies, it emerged that 160 pharmaceutical products were identified and distributed among the seven health programs. The LMIS component is the one that involves more technical and financial partners (TFPs). The CNLS, the Expanded Vaccination Program and the PNLP are the most supported health programs with 4 technical and financial partners. The central region with 9 TFPs is the most supported in logistics chain activities. In each component of the logistics system, there are strengths, but also weaknesses and threats that weaken the system. However, there are also several opportunities for strengthening or improvement.

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