



Analysis of Implementation of Drugs Management Policy in Public & Private Hospitals in the Democratic Republic of Congo

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Authors' contributions

This work was carried out in collaboration between both authors. Author ARR did the typing and logistics. Author LNR contributed with data collection. Both authors read and approved the final manuscript.

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ABSTRACT

Introduction: This study, which was conducted from January 1, 2015 to December 31, 2018, aims to assess the level of compliance with formal drug management standards at the Mangobo General Reference Hospital and the Kisangani Millennium Polyclinic and to verify which of the two medical structures successfully applies formal drug management standards more than the other.

Methods: The study involved 30 randomly selected subjects, 15 at the Mangobo General Reference Hospital and 15 at the Kisangani Millennium Polyclinic, as well as all the agents involved in drug management in these two hospitals in the Democratic Republic of Congo. For data collection, we used the questionnaire and comparative analysis.

Results: After analysis, we found that the formal standards of drug management would be impeccably respected at the Kisangani Millennium Polyclinic compared to the Mangobo General Reference Hospital. Furthermore, 87% of respondents confirmed the existence of the national list of essential and generic drugs at the Mangobo General Reference Hospital and 67% at the

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Kisangani Millennium Polyclinic. 73% of respondents confirmed the logistic cycle of control of drug supply at the Mangobo General Reference Hospital; 40% of the respondents confirmed that the managers of the Kisangani Millennium Polyclinic make greater use of the service criteria used to select medicines; finally, 73% of the managers use the monthly average calculation of the consumption of medicines to calculate the consumption of their medicines at the pharmacy of the Kisangani Millennium Polyclinic.

Keywords: Analysis; implementation; drugs; management; policy; public; private; hospitals.

1. INTRODUCTION

The availability of medicines is an essential element in improving access to healthcare for people in developing countries.

A health policy that would only target the multiplicity of well-structured, well-equipped health centers with highly qualified health professionals would be doomed to failure if it did not integrate the aspect related to the permanent availability of medicines of guaranteed quality and financially accessible to the population served [1].

Drugs remain one of the key components in the production of quality care. Due to their complexity and diversity, they are also considered a double-edged knife. The rules governing them must be applied firmly [2].

Less than 20% of African populations have access to antimalarial drugs, the quality of which is often inferior to that of products sold in developed countries, when it is not counterfeit [3].

As an instrument and an integral part of national health policy, national pharmaceutical policy aims to ensure a regular and sufficient supply of essential generic drugs of good quality, safe, effective and accessible to the majority of the population [4].

Given the importance of medicines and their impact on the health of the population, the problem of drug supply should be one of the priorities of all States.

In Canada, for example, the cost of drugs accounts for 15% of the total health budget and has the highest growth rate for the health component (12 to 15% for both ambulatory and inpatient clients). In Morocco, however, as part of its policy to improve the quality of health care and services, the Ministry of Health has set itself the priority objective of ensuring the availability

and accessibility of medicines and the rationalization of their local management. The development of the list of essential drugs, the sensitization of the prescriber and the training of the manager at the local level are the priority axes of this strategy. In their budget forecasts, health facilities list the expenditure chain in a hierarchical manner, the most important of which are staff expenditures, which are the most important, followed by drug expenditures, operating expenditures, capital expenditures, etc [5].

With regard to our country, DR Congo, the government has been making an increasing contribution to the health budget since 2003. Indeed, the share of the national budget devoted to health was 4.9% in 2003; 5.43% in 2004. In 2005 it fell slightly by 4.2%, in 2009 the budget was 5.29%. However, the implementation rate is still low, and this budget mainly concerns the operation and import exemptions for materials, medicines and equipment. The bankruptcy of the central medical-pharmaceutical warehouse, known as DCMP, in the course of 1980 caused a shortage of medicines throughout the country. This situation had led to the uncontrolled and illegal proliferation of private structures (wholesalers and retailers) that began to supply both public and private health facilities with medicines. Since 2001, the DR Congo has developed a health policy to improve access to good quality essential generic drugs. Since then, it has collaborated with partners such as WHO, the African Development Bank (ADB), UNICEF, UNFPA, Belgian Technical Cooperation (BTC), the Global Fund (GF), SANRU... [6].

With these partners, several activities were carried out, including the rehabilitation of the Kinshasa Pharmaceutical Laboratory (LAPHAKI) for the production of essential medicines, the development and revision of the National Essential Medicines List (NEML) and national pharmaceutical policy, the creation of the National Essential Medicines Supply System and the National Program for the Promotion of

Traditional Medicine; the establishment of regional drug distribution centers and the subsidy of medicines against three diseases that aggravate poverty: malaria, tuberculosis and HIV/AIDS [1].

The optimal functioning of hospitals is conditioned by the acquisition of pharmaceutical products. In accordance with national policy, the establishment of Regional Distribution Centers (RDCs) can only be considered in a given district if it includes areas engaged in a development process [2].

This policy recommends the centralization of purchasing in acquisition and decentralization and then distribution, which results in the creation of FEDECAM. These regional distribution centers cover the health zones, an operational unit of the primary health care strategy.

To date, despite the installation of three regional distribution centers in the dismembered eastern province (CAMEKIS, CADIMÉBU, CAAMENIHU), weaknesses persist in the health zones covered and not covered by regional distribution centers. These problems include: drug stock-outs, inappropriate drug purchases, poor storage conditions, poor dispensations, irrational prescriptions and poor patient compliance.

An unfortunate observation was made in our General Reference Hospitals according to which they hardly benefit from State funding to ensure their harmonious functioning in order to achieve the primary objective: that of providing essential health care to the population. Thus, in the 2014 finance law, the Congolese government devoted a small proportion of 4% of the annual budget to public health [7].

In his book entitled "*Le médicament à l'hôpital*", Monier B. (2003) demonstrated that drug expenditures in a public health facility are enormous and can be around 1/3 of the annual budget. It also demonstrated how drug expenditures in public hospitals have changed over the past six fiscal years.

In the same vein, Leclerc D. [8] had published an article on the "Budget of public hospitals" of a Paris University Hospital Centre and specified that the ranking of hospital expenditure depends on the number of staff and patient attendance. Thus, after staff expenses, drug expenses are

second only to staff expenses. The harmonization of drug management tools in health centers and hospitals should provide unique tools that can be used for all medical products, regardless of category, program and partner. The optimal functioning of hospitals is conditioned by the acquisition of pharmaceutical products. The management of these drugs requires teamwork, supervised by drug professionals such as pharmacists, doctors, senior technicians and pharmacy assistants, nurses, and other health workers.

Simonet D. [9] has demonstrated in its article on "Drug Expenditure in Hospitals" that the top priority for hospital managers is to ensure a supply of drugs to ensure better patient care and this must be done in strict compliance with financial management standards.

Bolembe Litamba [10] also opened a breach on the factors and strategies for the sustainability of drug capital in the Public Health Institutions of the city of Kisangani, thus leading to the results according to which the factors triggering the bottleneck in the drug capital of the public health institutions of the city of free care for the poor, the low level of purchasing power of the population, the low motivation of pharmacy staff, general local basic housing through medicines, poor fund management, irregular supplies, etc.

Certainly, a reading of these previous studies allows us to note that what brings us closer to our predecessors is the issue of drug management in health facilities. However, our particularity in this study lies in the comparative analysis of the management of drug capital between the Mangobo General Reference Hospital, a public structure, and the Millennium Polyclinic, a private structure, in relation to the sustainability of drugs.

Access to essential medicines is one of the priorities of the National Health Policy and more particularly of the National Pharmaceutical Policy in the DRC.

Thus, with the support of the partners, the Government has set up an Essential Drugs Procurement Centre (CAMEG) whose mission is to ensure the regular supply of essential drugs to Socio-Sanitary Districts (CSS) and second reference hospitals. On the basis of the assessment of national drug needs carried out each year, CAMEG should establish a supply

plan that can ensure the constant presence of essential drugs in the care structures.

The various evaluations carried out in the pharmaceutical sector have shown the poor performance of management tools, resulting in shortages of medicines sometimes available at the upper level of the supply chain and also sometimes in avoidable lapses. In addition, the Government benefits from the support of partners, through bilateral or multilateral initiatives aimed at improving the availability of medicines. Many partners use specific management tools and procedures with more or less significant results. However, the presence of multiple management tools, sometimes for the same product category, creates additional workloads for drug managers at the peripheral level.

The Drug Management Manual for Reference Hospitals describes all major drug management activities. Each chapter discusses one of these major activities, its place in the process of maintaining a continuous supply of medicines and the recommended standard procedures to be used [11].

Access to essential medicines is one of the priorities of the National Health Policy and more particularly of the National Pharmaceutical Policy.

Hospital information systems for pharmacy and drug circuit management, as well as economic and financial management software, have rarely been designed to optimize the value of fixed stocks of drugs and medical devices. Moreover, few offer the possibility of securing supply by means of a precise statistical calculation, individualized by reference, of management parameters (alert stocks, mini or security stocks), based on the history of movements and consumption (in particular on its variability).

Based on this observation, we want to examine through this study how the Mangobo Reference Hospital (GRH/Mangobo) a public structure manages its drug capital and how a private health structure does so in relation to non-stock outs, and after comparing the two management modes, identify which one is more effective than the other and their determinants.

This study aims to identify the mechanisms for managing drug capital used in public and private health facilities in Kisangani City in order to assess their effectiveness or inefficiency in relation to a hospital's main objective.

To achieve this goal, the following objectives were pursued: first, to evaluate the level of compliance with formal drug management standards at Mangobo General Reference Hospital and the Millennium Polyclinic; finally to check to see which of the two health facilities successfully applies the formal drug management standards more than the other.

In view of the above, we asked ourselves the following questions:

RQ1: Do the Mangobo General Reference Hospital and the Millennium Polyclinic comply with formal drug management standards?

RQ2: Between the two health facilities, which one has a safe and sustainable drug management system?

To answer the questions we are researching, we have formulated the following hypotheses:

Formal drug management standards would not be respected by the Mangobo General Reference Hospital and the Millennium Polyclinic.

Of these two health structures, we believe that the Millennium Polyclinic would apply the principles of management in a safe and sustainable manner.

2. METHODOLOGY

2.1 Framework of the Study

This study was conducted in two different health facilities, one public and the other private. These are the GRH/Mangobo and the Millennium Polyclinic of Kisangani in the Democratic Republic of Congo.

2.2 Methods

Any study must proceed to a method; thus for its realization, we used the analytical method which consisted in grouping all the data and information collected to understand the factors and strategies of sustainability of drug capital in the Public Health Institutions of the city of Kisangani targeted by our research. We also used the statistical method that allowed us to quantify and facilitate the understanding of research results by presenting them in tabular form.

In addition, the comparative method also allowed us to compare the management of these two health facilities under review and determine the result.

We present the study population; the study sample and the working instrument (development, administration, questionnaire processing) and the difficulties encountered in data collection.

2.2.1 Population

The study population consists of 108 medical and paramedical staff working at the GRH/Mangobo and the Millennium Polyclinic targeted by our research, with a total staff of 68 at the GRH/Mangobo and 40 at the Millennium Polyclinic respectively.

2.2.2 Sample

The constitution of a sample is a function of the very nature of the work, the ideal for any research is to work with the whole population. Sometimes the researcher is unavailable to work with the survey universe given his means and time, which is why the researcher is content to work with a sample that is not the total population.

For our study, we used the nonprobability sample. Indeed, to constitute our sample, we opted for an occasional sample. This is justified by the unavailability of the medical and paramedical staff surveyed; thus, we selected for our study a sample of 30 subjects directly involved in drug management, including 15 subjects at the GRH/Mangobo and 15 subjects at the Millennium Polyclinic.

2.2.3 Data collection instrument

All scientific work must be supported by data collection techniques to enable the researcher to make a relevant decision. There are several techniques for collecting research data. In this regard, Piel J. [12], points out that "several authors collect their research data in various forms: sometimes in the form of free descriptions, sometimes in the form of classification into categories or in the form of answers to a questionnaire". This shows that the researcher must make a choice that is not a coincidence in the sense that it must be guided by a good number of criteria, including the very nature of the study, or the objective of the research, the degree of precision desired for the results.

For example, we used the following techniques: literature review and questionnaire. For our study, this technique allows the researcher to consult archives, and was chosen to help us

consult books, journals, memoirs, the website and other documents related to our subject.

1) Questionnaire

According to Tibamwenda A. [13], a questionnaire is a test composed of a greater or lesser number of written questions about opinions, interests, feelings and behavior presented in writing to the subject.

The questionnaire as a strictly standardized instrument both in the nature of the questions and in their order. A questionnaire should therefore appear as a verbal exchange as natural as possible. The most important objective of the questionnaire is to test the hypotheses.

According to Russel S. and Reynolds J. [14], an open-ended question, when the subject formulates his answers with his own materials and a closed-ended question when the subject makes a choice among the answers proposed to him.

With regard to our research, the questionnaire focused on the following main themes:

- On the factors side: allocation of funds by the donor (BTC/ASSNIP), the management of this fund, the way of supply, the housing of funds generated by drug sales, the continuity of drug sales in the structure's pharmacy, the care of the poor and vulnerable groups (pregnant women and children aged 0 to 5), the participation of the population in drug management, the purchasing power for access to the hospital, the motivation of the providers.
- And on the strategic side we have: the receipt of subsidies for vulnerable and destitute groups, donors, facts used with drug revenues, the possession of a bank account by the structures, the assumption of responsibility by the providers with regard to drugs, the existence of a mutual health insurance company, other methods used in the absence of the mutual health insurance company, the release of drugs in the office of the structure, the possession of price lists of the places of supply and the suggestions.

2) Administration of the questionnaire

The administration of the questionnaire consists in having the questionnaires completed by the

subjects selected for the survey. In the way a questionnaire is administered, Russel S. and Reynolds J. [14] distinguish two kinds of indirect administration: Administration to the fact that the subject interviewed notes his or her own answers to questions about the protocol is called self-registration, while in the indirect mode of the interviewer asks questions of the respondent and takes direct note of the answers thus given.

In this study, we used both direct and indirect administrations. Indeed, we went down to the different health facilities where we met our respondents and gave them the questionnaires. After a week, we spent days after days collecting the survey protocols from them. And for other respondents, we preferred to ask them questions by writing the answers from their point of view ourselves.

3) Verification of the questionnaire

Before considering our questionnaires as ready to be administered, we had the advantage of checking all aspects: because respondents are alone in front of their questionnaire, and its content varies from one research to another. This measure is even more essential to us than other data collection tools. Thus, we tested our questionnaires with a few people whose socio-demographic characteristics are similar to those of future respondents whose GRH/Makiso was our pre-test environment. The way we proceeded allowed us to identify weaknesses and gather criticism and improve the wording of some questions.

2.2.4 Data processing technology

After collecting the data, we systematically analyzed the responses provided by the respondents. These responses were classified according to the different variables in the staffing graphs.

To properly process our results, we used the Chi-square test as a statistical method to compare the numbers of quantitative variables in the two groups. The Chi-square test is the exact Fisher test (when one of the numbers was less than 5) were used. The Odds Ratio (OR) and its confidence interval were calculated to look for a causal relationship. To compare two quantitative variables, the Student test was used. The α risk of 95% 1st species was chosen, the differences were considered statistically significant when the value of P was strictly less than 0.05. The data

obtained after calculation have been rounded to the nearest hundredth.

3. RESULTS

As such, we will try to present the results obtained by our survey in the two health structures, one state or public, i.e. the Mangobo General Reference Hospital, and the other integrated private, i. e. the Millennium Polyclinic of Kisangani.

3.1 Acquisition of a National Drug List

The majority of respondents answered favorably to the question, i.e. they claimed to have the national list of medicines, i.e. 60%, including 13 at the Mangobo General Reference Hospital and 5 at the Millennium Polyclinic. On the other hand, 40% of our respondents denied that they did not have the list of drugs, including 2 at the Mangobo General Reference Hospital and 10 at the Millennium Polyclinic.

We noted that 14 of the respondents confirmed the 2017 edition, i.e. 47%, including 11 at the Millennium Polyclinic and 3 at the GRH/Mangobo, while 8 respondents also confirmed the 2014 edition, i.e. 26%, including 5 at the GRH/Mangobo and 3 at the Millennium Polyclinic. 8 others still have no idea, i.e. 26%, including 7 at the GRH/Mangobo and 1 at the Millennium Polyclinic.

3.2 Drug Supply at CAMEKIS

This graph show that 50% of the respondents confirmed the supply from CAMEKIS, including 10 at the GRH/Mangobo and 5 at the Millennium Polyclinic. On the other hand, 50% disagreed with this statement, including 5 at the GRH/Mangobo and 10 at the Millennium Polyclinic.

It can be seen from this graph that 60% of the respondents know the supply logistics cycle, i.e. 9 agents, at the GRH/Mangobo against 40% or 6 agents who do not know any. On the other hand, 73% showed a lack of knowledge of the supply logistics cycle, i.e. 11 agents at the Millennium Polyclinic, compared to 27% who said they were aware of it.

3.3 Drug Selection

From this graph we noted that 33% of the respondents opted for the selection of drugs as a

criterion for the use of services at the GRH/Mangobo, 27% considered it appropriate to use the criteria of affordable cost of drugs and dominant diseases, 13% considered other criteria. On the other hand, 40 of the respondents chose the criteria for the use of services 33% opted for the dominant pathologies, 20% met the criteria for the affordable cost of drugs and finally 7% wanted other criteria and it is at the Millennium Polyclinic.

The results of this graph show that 67% of the respondents, i.e. 20 agents, confirmed the

calculation, which is based on an average consumption of 6 months, 11 of which at the Millennium Polyclinic and 9 at the GRH/Mangobo. On the other hand, 33% of the respondents, i.e. 10 agents, chose the calculation based on the average consumption of 3 months, including 6 at the GRH/Mangobo and 4 at the Millennium Polyclinic.

We find on this graph show that 43% of respondents estimate their drug needs based on patients' attendance at their health facilities, including 7 at the Millennium Polyclinic and 6 at

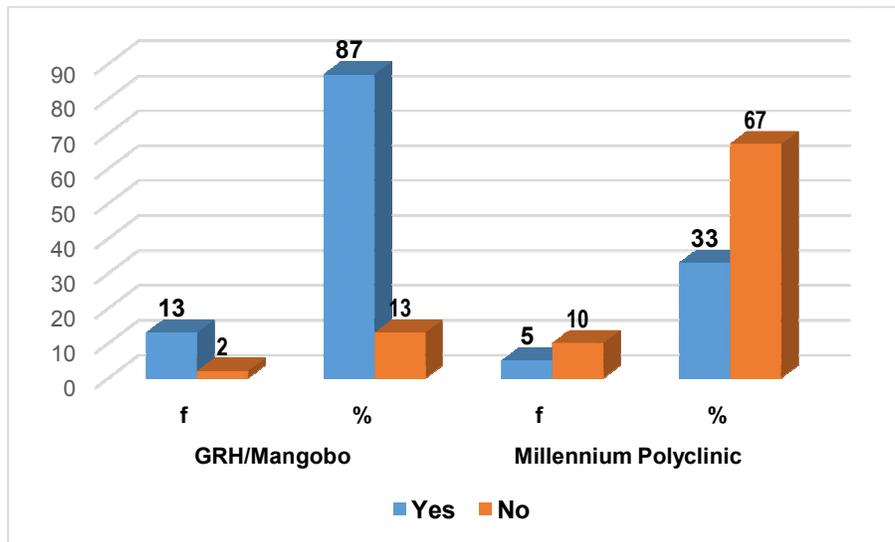


Fig. 1. Distribution of respondents by existence of a national drug list

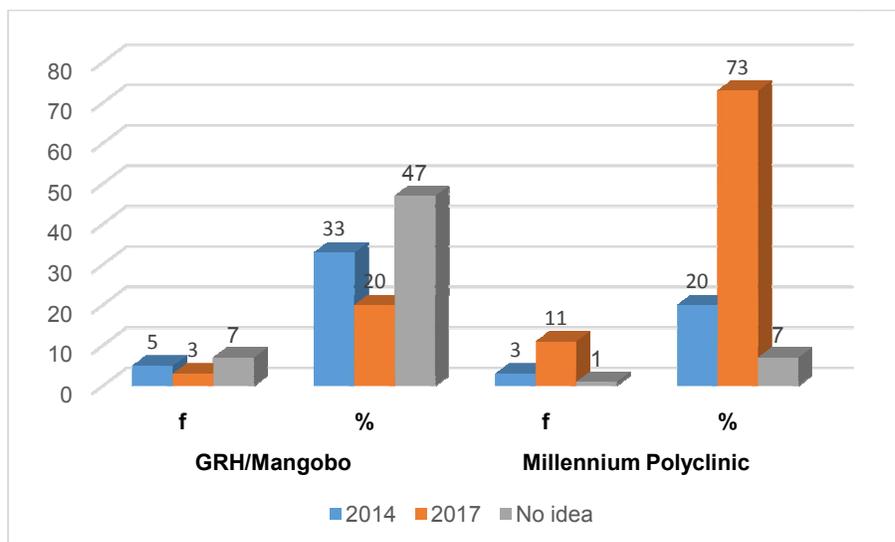


Fig. 2. Distribution of respondents by review development edition process

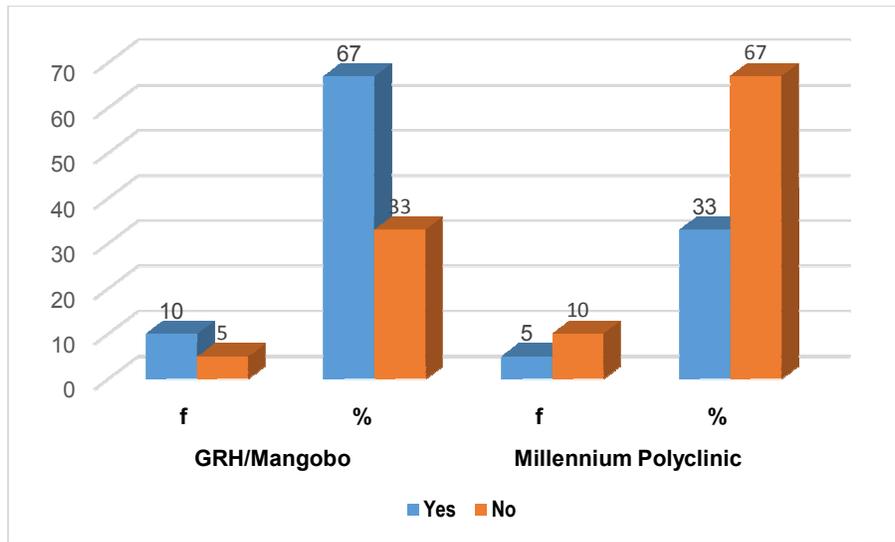


Fig. 3. Distribution of subjects in relation to drug supply at CAMEKIS

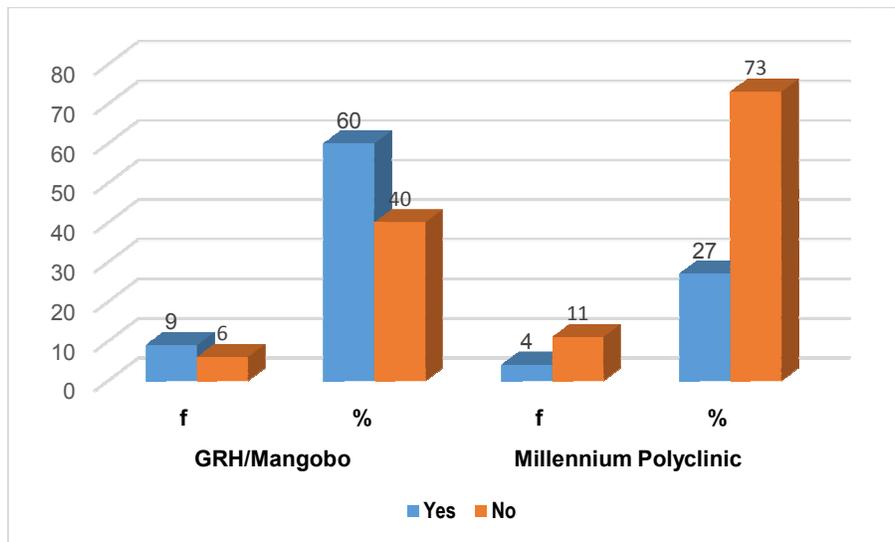


Fig. 4. Distribution of respondents in terms of knowledge of the supply chain logistics cycle

the GRH/Mangobo. 30% of respondents prefer to use the management protocol, including 5 at the GRH/Mangobo and 4 at the Millennium Polyclinic. On the other hand, others chose the dominant pathologies, i.e. 27%, including 4 subjects respectively at the GRH/Mangobo and the Millennium Polyclinic.

It can be seen from this graph that 100% of the respondents stated that they evacuated expired products from the pharmacy, including 15 at the GRH/Mangobo and 15 at the Millennium Polyclinic.

It can be seen from this graph that 70% of the respondents affirmed the purchasing power of medicines by the population compared to 30% who affirmed 53% at the GRH/Mangobo and 7% at the Millennium Polyclinic.

The results of this graph show us that 63% of the respondents supply their structure with drugs monthly from CAMEKIS or commercial depot, including 93% at the Millennium Polyclinic and 33% at the GRH/Mangobo, followed by 27% who supply them quarterly, including 47% at the GRH/Mangobo and 7% at the Millennium

Polyclinic. On the other hand, 10% of the respondents subscribe for a half-yearly supply and 20% of the GRH/Mangobo.

3.4 Management of the Revenue Generated

In the light of this graph, we noted that 70% of the respondents stated that they were renewing

their stocks of medicines, 73% at the Millennium Polyclinic and 67% at the GRH/Mangobo, followed by 20% of the respondents, i.e. 6 subjects, 3 at the GRH/Mangobo and the Millennium Polyclinic respectively, and 10% of the respondents, i.e. 3 subjects, 2 at the GRH/Mangobo and 1 at the Millennium Polyclinic, gave a favourable opinion for the functioning of their health facilities.

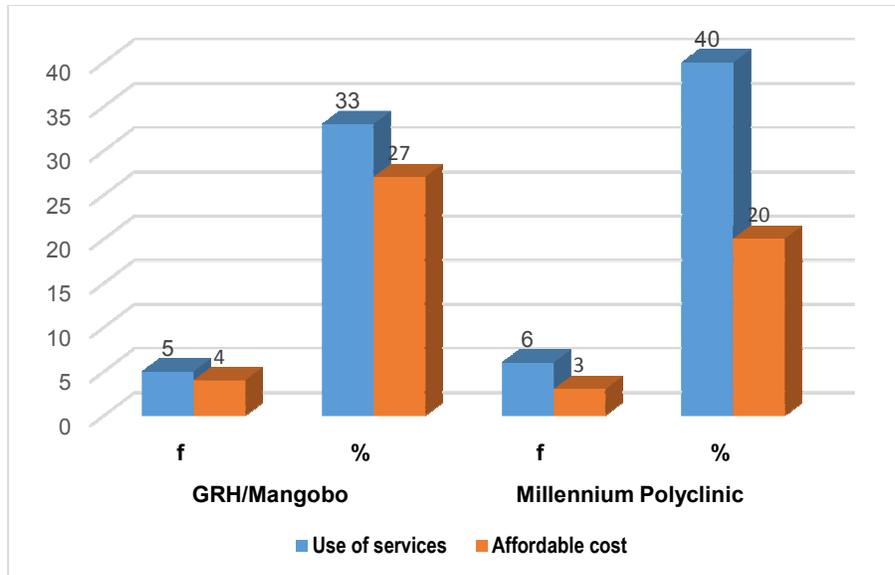


Fig. 5. Distribution of respondents by drug selection criteria

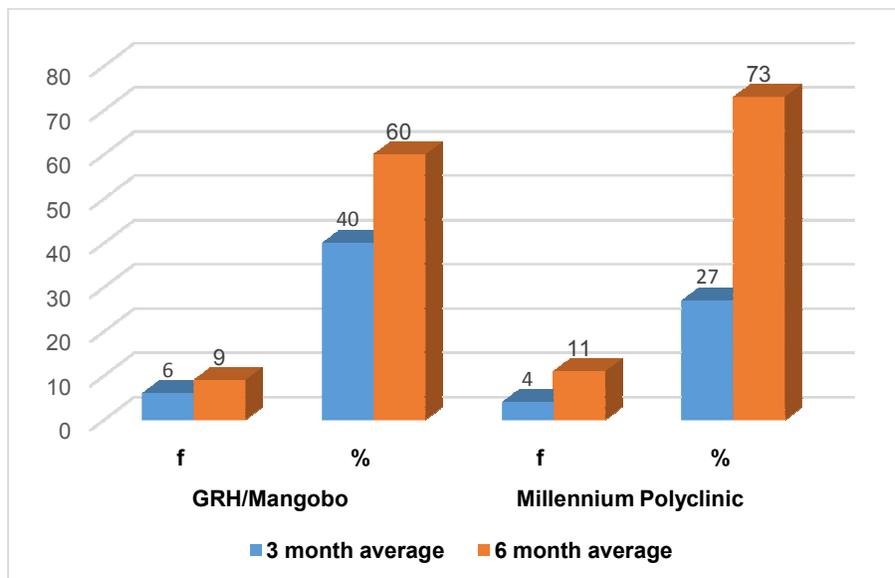


Fig. 6. Distribution of respondents in relation to the calculation of average monthly drug consumption (AMC)

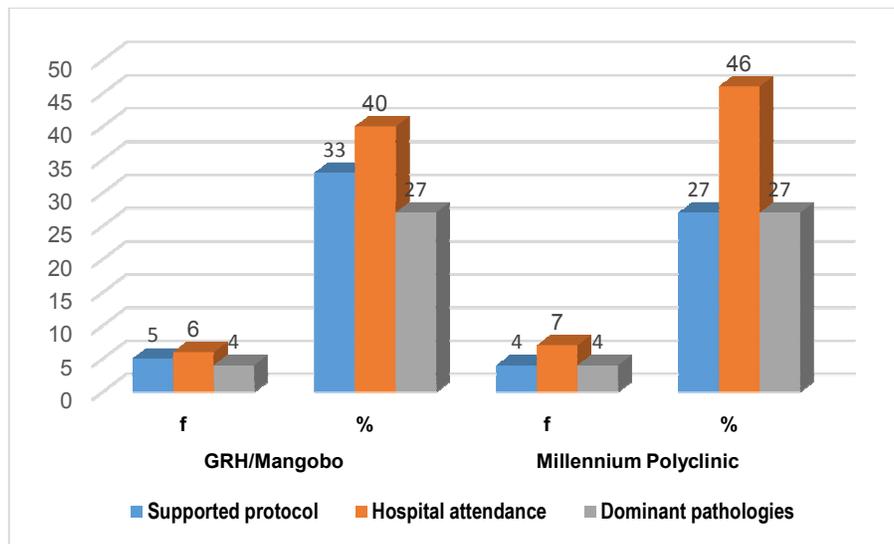


Fig. 7. Distribution of respondents in relation to the methods used to estimate drug needs

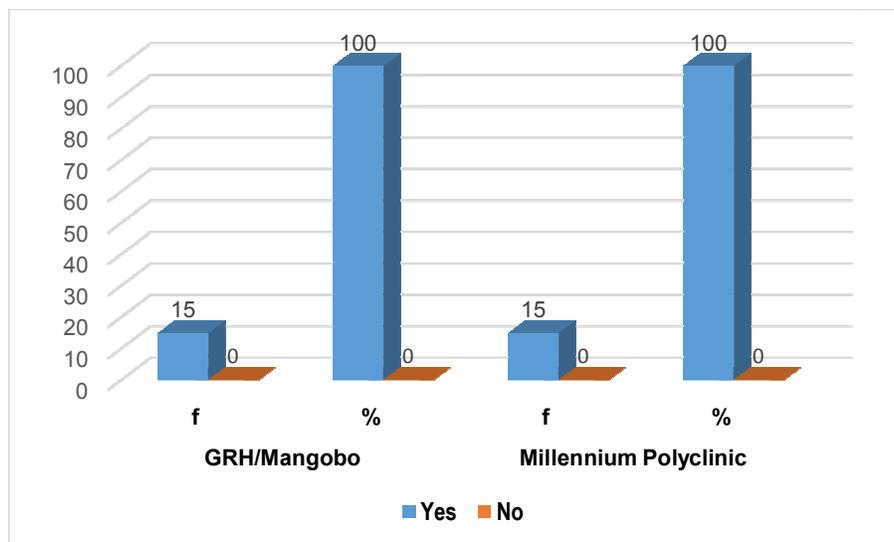


Fig. 8. Distribution of respondents by disposal of expired products from the pharmacy

It can be seen from this graph that 73% of the respondents reversed the motivation of the staff by counting drugs, including 12 at the GRH/Mangobo and 10 at the Millennium Polyclinic. On the other hand, 27% of the respondents, i.e. 8 subjects, confirmed this motivation of the staff by the drug account, including 5 at the Millennium Polyclinic and 3 at the GRH/Mangobo.

It can be seen from this graph that 73% of the respondents denied that the revenues generated by the sale of medicines are used for other purposes, including 11 at the GRH/Mangobo and

the Millennium Polyclinic respectively. On the other hand, 27% of the respondents, i.e. 8 subjects, confirmed this hypothesis, including 4 at the GRH/Mangobo and 4 at the Millennium Polyclinic.

The results of this graph show that 50% of the respondents are personally managed in case of illness, including 9 at the GRH/Mangobo and 6 at the Millennium Polyclinic, followed by 40% of our respondents, i.e. 12 subjects who are managed on credit in case of illness, including 8 at the Millennium Polyclinic and 4 at the GRH/Mangobo, and finally 10% of our

respondents, i.e. 3 subjects, are treated for free in case of illness, including 2 at the GRH/Mangobo and 1 at the Millennium Polyclinic.

It can be seen from this graph that 100% of the respondents, i.e. 30 subjects, confirm the reservation of 70% of revenue related to the drug capital at the cash register to renew their stocks.

It appears from this graph that the majority of respondents, i.e. 70%, confirmed the renewal of

drug stocks by the profit generated by this sale, including 11 at the Millennium Polyclinic and 10 at the GRH/Mangobo, follow-up of 20% of our respondents, i.e. 6 subjects, are motivated by the profit generated by the sale of medicines, including 3 at the GRH/Mangobo and 3 at the Millennium Polyclinic, respectively, and finally, 10% of our respondents, i.e. 3 subjects, support the functioning of the health structure through the profit generated by the sale of medicines, including 2 at the GRH/Mangobo and 1 at the Millennium Polyclinic.

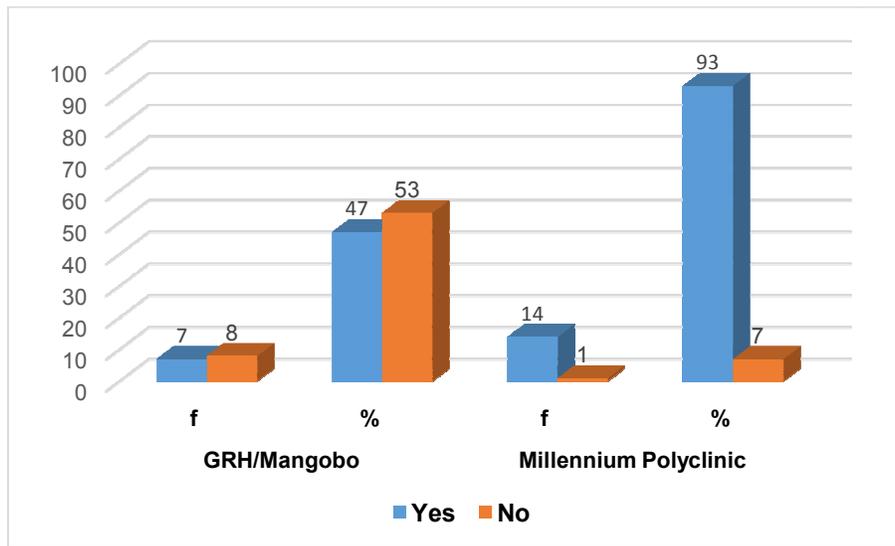


Fig. 9. Distribution of respondents in relation to the purchasing power of the population at the pharmacy

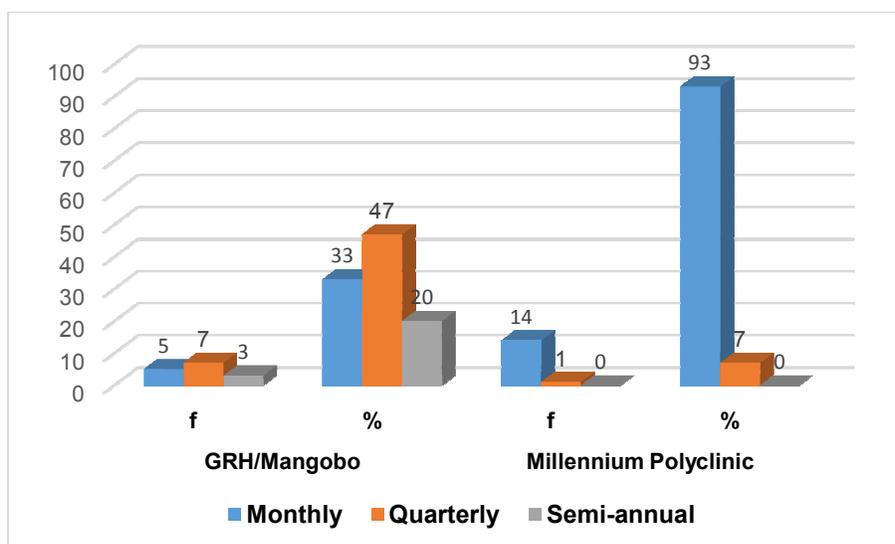


Fig. 10. Distribution of respondents in relation to the frequency of supply to CAMEKIS or the commercial depot

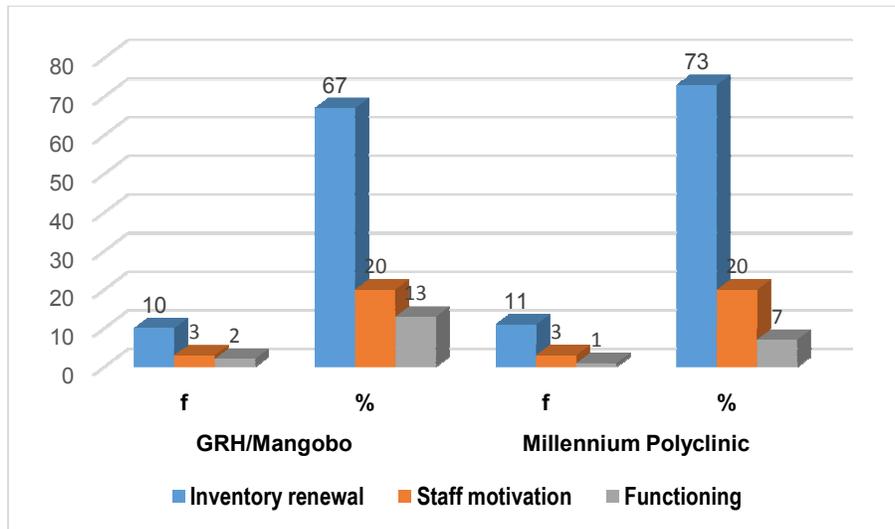


Fig. 11. Distribution of respondents by management of revenues generated by the sale of drugs

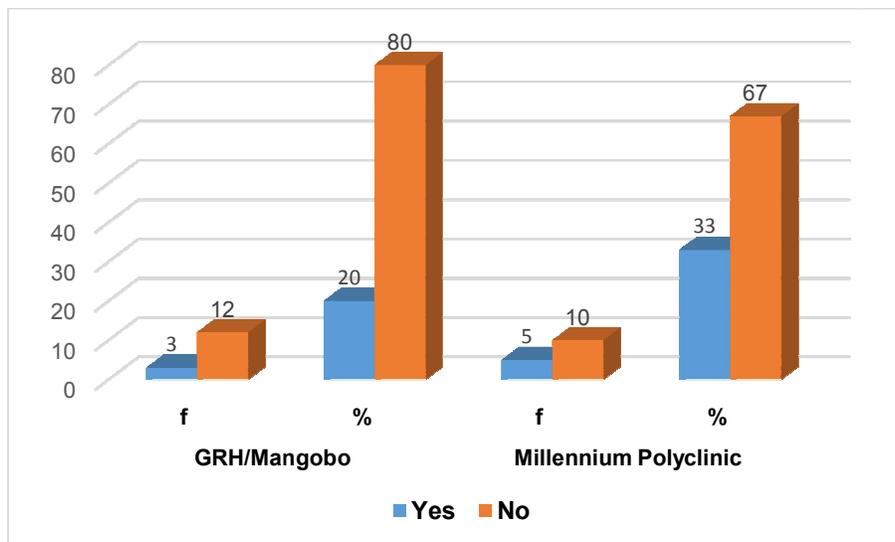


Fig. 12. Distribution of respondents according to the motivation of staff by the drug account

The results of this graph show that 50% of the respondents confirmed the existence of a drug bank account at the Millennium Polyclinic, while the other 50%, i.e. 15 subjects from the HGR/Mangobo, denied the existence of a bank account to keep the proceeds of drug sales.

It appears from this graph that 67% of the respondents confirmed the existence of the mutual health insurance at the GRH/Mangobo, however, this result is not confirmed by our respondents from the Millennium Polyclinic, and i.e. 33% invalidate the existence of the mutual health insurance.

4. DISCUSSION AND COMMENTS

This part leads us to the comments of the different results we have achieved, in order to justify the reliability of the data and their scientific values.

4.1 Acquisition of the List of Essential and Generic Drugs

In analyzing these results we found that 87% of the respondents gave a positive opinion on the existence of the national list of essential generic

drugs at the GRH/Mangobo. This situation is not the same at the Millennium Polyclinic, as 67% of the respondents gave the same solution.

According to the DRC Ministry of Health [4], the national list of essential and generic drugs is a very important tool that can enable a health facility to have a selection of health products and ensure better use of pharmaceutical products. Regarding the year of the publication of this national list of essential and generic drugs, 47% of our subjects confirm that it dates back to 2017, while 27.6% have spoken of 2014, 27.6% others

have no idea about this issue. This is due to the fact that government officials are not very interested in reading and archiving.

4.2 Drug Supply at CAMEKIS or Commercial Depot

The results show that, 67% of our respondents confirm the supply of medicines to the Kisangani Regional Essential Drugs Distribution Centre (CAMEKIS) at the Mangobo General Reference Hospital. This statement is contradicted by 67% of respondents from the Millennium Polyclinic.

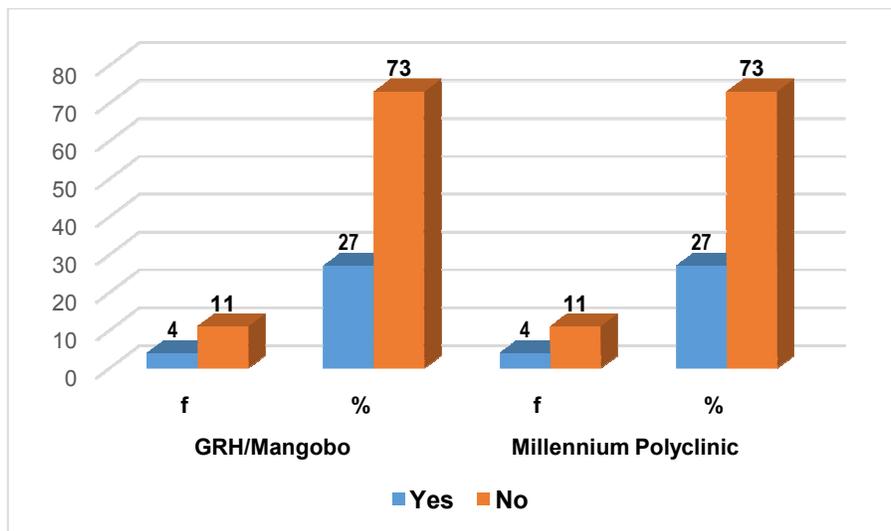


Fig. 13. Distribution of respondents by revenue generated from the sale of drugs used for other purposes

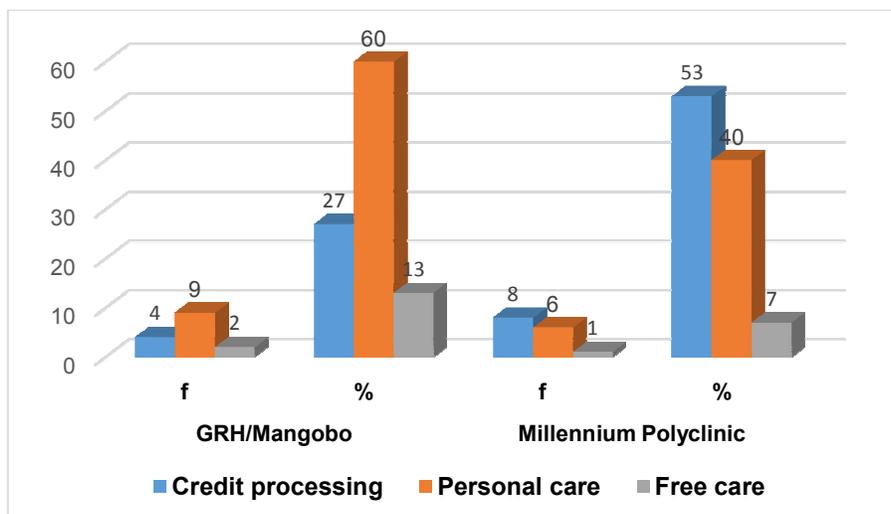


Fig. 14. Distribution of subjects according to the management and service providers of the structure

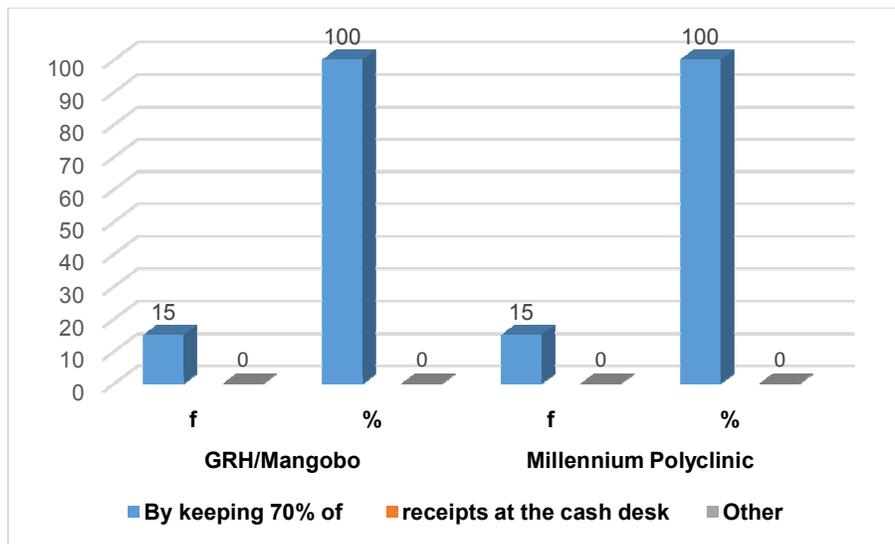


Fig. 15. Distribution of respondents by drug sustainability fund management

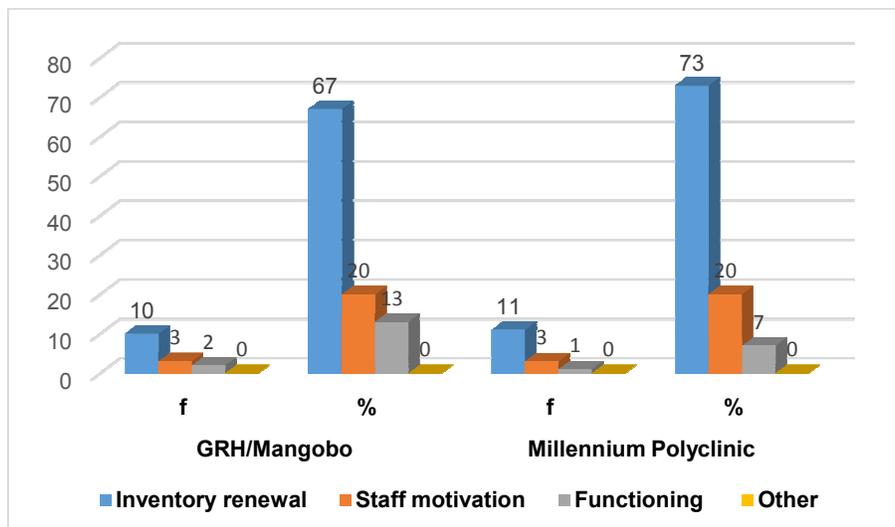


Fig. 16. Distribution of respondents by distribution of profits generated by the sale of medicines

Concerning the method of purchasing medicines, the results of our respondents showed that the two defined health structures pay cash for the medicines either at the depot or at CAMEKIS. In other words, CAMEKIS uses the type of cash payment for drugs.

Compared to the knowledge of the supply cycle, we found that 73% of our respondents master the cycle and practice it at the Millennium Polyclinic and 60% at the Mangobo General Reference Hospital. Thus, we can say that the results are almost similar in the two health facilities.

It should be noted that the logistics cycle is a repeated succession of the phases of management of drugs and other health products to be procured, forecasting and ordering, receipt in store and storage of ordered products, distribution of products and use of pharmaceutical products.

These results corroborated those described by Bolembé Litamba J. 10] in its study on factors and strategies for the sustainability of drug capital in public health institutions in Kisangani, including the Kabondo Referral Health Center (Foyer and Mokela-State Health Center, Boyoma

health center and Peace Health center. According to the DRC Minister of Health [2], the activities of the logistics cycles involved in the process depend on each other as part of an entire system.

It is important to think effectively about the supply system in terms of four games including selection, acquisition, distribution and use. A good pharmaceutical manager must properly master these four sets of activities, which together contribute to the quality of medicines.

Based on knowledge of the criteria for selecting drugs, the use of services seems to be the most commonly used criterion for selecting drugs, 40% of it is applied by the leaders of the Millennium Polyclinic against 33% at the Mangobo General Reference Hospital. These results are almost similar in the two health structures, one state and the other private.

Regarding the calculation of the average monthly consumption of medicines, we noted that 73% of our respondents from the Millennium Polyclinic

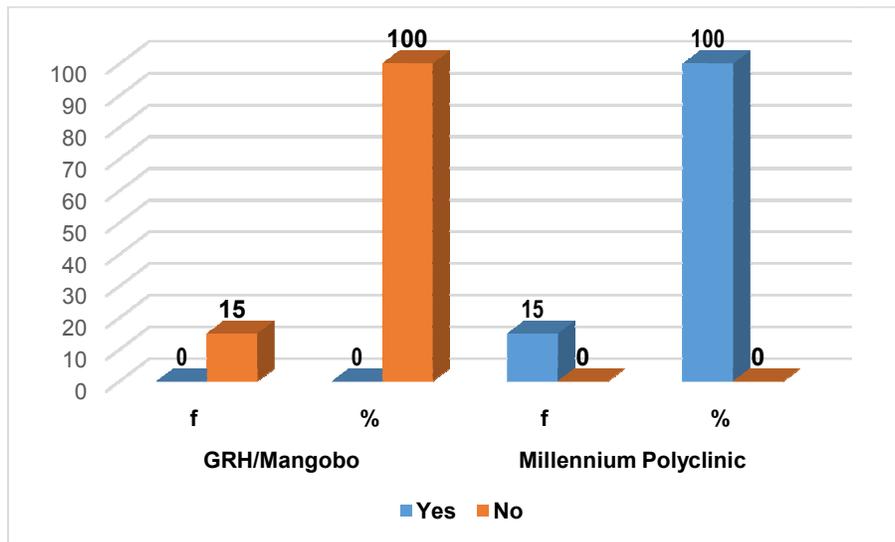


Fig. 17. Distribution of respondents by existence of a drug bank account

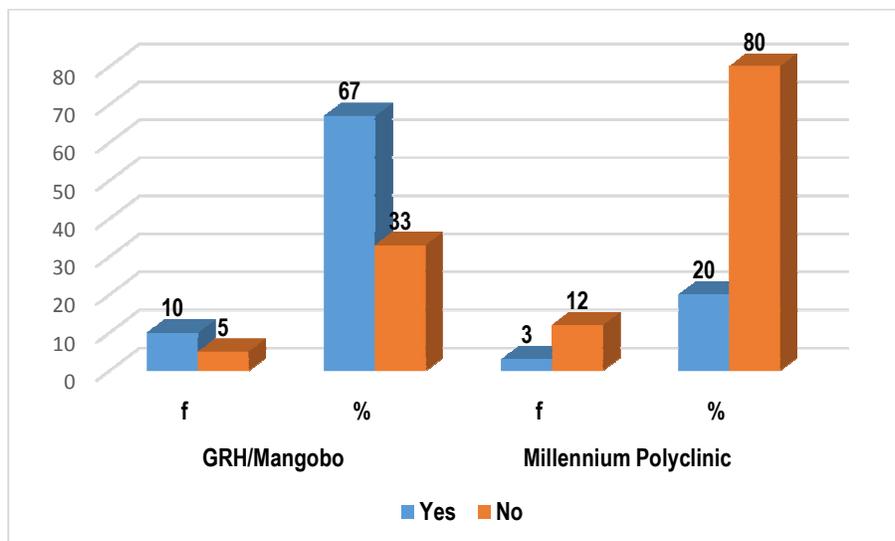


Fig. 18. Distribution of subjects in relation to the existence of a mutual health insurance company in your health structure

opt for the average monthly half-yearly consumption, these results corroborated those of the Mangobo General Reference Hospital, i.e. 20%, yet 40% of our respondents issued a favourable opinion in relation to the monthly consumption at the Mangobo General Reference Hospital and 27% at the Millennium Polyclinic.

The differences in points of view are explained by the fact that there is no qualified personnel in drug management, either at the Mangobo General Reference Hospital or at the Millennium Polyclinic.

Patient attendance or the use of health care services would be the most commonly used method for estimating drug needs, with 46% of respondents from the Millennium Polyclinic, on the other hand, 40% giving similar results at the Mangobo General Reference Hospital.

The results of this study show us that all of our respondents evacuate expired drugs from the pharmacy by drawing up a report duly signed by the witnesses (Medical Director and Administrator Manager) as proof of this evacuation.

We also found that the reason they are able to meet this standard is because they have been trained and whenever there is supervision, they are briefed.

As we have said, the DRC Ministry of Health [2] "removes expired and poor quality drugs from the pharmacy because they present risks".

When asked whether the population's purchasing power is sufficient to obtain medicines, ideas diverge: 93% of respondents stated that the population's purchasing power is sufficient to obtain medicines, while 53% gave contradictory opinions at the Mangobo General Reference Hospital. With regard to the periodicity of supply of essential and generic drugs, it should be noted that the majority opt for a monthly supply of 93% to the Millennium Polyclinic compared to 33% to the GRH/Mangobo, followed by a quarterly supply of 47% to the GRH/Mangobo compared to 7% to the Millennium Polyclinic, while others opt for a half-yearly supply of 20% of the subjects to the Mangobo General Reference Hospital.

According to the Minister of Health of the DRC (2008), the objective of the national pharmaceutical policy was to raise pharmaceutical coverage of essential and

generic drugs (EGDs) to a satisfactory level by supplying, improving local production and fairly structured distribution of regional distribution and other pharmaceutical establishments, to enable health facilities to be easily supplied.

With regard to the above results, 73% of respondents use the revenues generated by the sale of medicines to renew the stock of medicines at the Millennium Polyclinic. However, 67% of these results are confirmed by GRH/Mangobo subjects.

When asked whether staff are motivated by the drug account, 33% of respondents confirmed this at the Millennium Polyclinic, which is a private and integrated health facility, compared to 20% of respondents at the GRH/Mangobo. On the other hand, 80% disagree with this statement at the GRH/Mangobo compared to 67% of respondents at the Millennium Polyclinic.

We confirm, however, that the revenues generated by the sale of drugs are used for other purposes. This statement was made by 27% of respondents from both the GRH/Mangobo and the Millennium Polyclinic, while 73% of respondents expressed opposing and divergent opinions.

Concerning the management and service providers of the health facilities in question, 60% of the respondents testified to individual care at the Mangobo General Reference Hospital, compared with 40% at the Millennium Polyclinic, followed by 53% of treatment to be credited in the event of illness at the Millennium Polyclinic, 27% at the Mangobo General Reference Hospital and 7% free at the Millennium Polyclinic.

In order to ensure the sustainability of the drug capital, all respondents, i. e. 100%, confirmed that 70% of these revenues are held in cash registers. Our results corroborate those of Bitoko Litule A. [15], in its study on the issue of the cost to health facilities of renewing the stock of drugs, found the same result as we did.

When asked about the way in which the profit generated by the drug capital is distributed, the majority of respondents, 73%, confirm in the first place the renewal of drug stocks at the Millennium Polyclinic against 67% at the Mangobo General Reference Hospital. These results appear to be similar. This was followed by the motivation of the staff at 20% of the subjects, both at the Mangobo General Reference Hospital

and the Millennium Polyclinic, and finally 13% at the Mangobo General Reference Hospital and 7% at the Millennium Polyclinic, which is a private but integrated health structure.

About keeping a bank account to keep the proceeds of the sale of medicines, it appears that 100% of the respondents from the Millennium Polyclinic confirmed that they have an account at the bank. This means the efficiency of this system in a private health structure compared to that of the public, i.e. at the Mangobo General Reference Hospital where 100% of the subjects invalidate the system or do not maintain a bank account for the sale of medicines.

With regard to the existence of a mutual health insurance scheme in the targeted health facilities, it appears in our study that the majority of respondents confirm the presence of this scheme in 67% of subjects at the Millennium Polyclinic. On the other hand, the opposite reverses this statement at the Mangobo General Reference Hospital.

5. CONCLUSION

This study focused on the "Diagnosis of Drug Management in public and private health facilities. A study that we conducted simultaneously at the Mangobo General Reference Hospital and the Kisangani Millennium Polyclinic from January 1st, 2015 to December 31st, 2018", with the following objectives:

Evaluate the level of compliance with formal drug management standards at Mangobo General Reference Hospital and Millennium Polyclinic;

Check to see which of the two health facilities successfully applies the formal drug management standards more than the other.

Our sample consisted of 30 subjects randomly selected, 15 of whom were at the Mangobo General Reference Hospital and 15 at the Millennium Polyclinic, i.e. all the agents involved in drug management in these two hospitals. For data collection, we used the questionnaire and comparative analysis.

At the end of our analyses, we arrived at the following results:

- 87% of respondents confirmed the existence of the national list of essential

and generic drugs at the GRH/ Mangobo and 67% at the Millennium Polyclinic;

- 67% of respondents confirm the supply of medicines from CAMEKIS to the GRH/Mangobo and commercial depot for the Millennium Polyclinic;
- 73% of the respondents confirmed the control of the logistics cycle of drug supply at the GRH/Mangobo;
- 60% of respondents confirmed that the leaders of the Millennium Polyclinic use more drugs compared to 33% at GRH Mangobo;
- 40% of respondents confirmed that the leaders of the Millennium Polyclinic use more service utilization criteria to select drugs, compared to 33% at the GRH/Mangobo;
- 73% of respondents calculate the average monthly drug consumption to calculate the consumption of their drugs at the Millennium Polyclinic pharmacy;
- 93% of respondents at the Millennium Polyclinic opt for a monthly supply compared to 33% at the GRH/Mangobo;
- 73% of respondents use the revenues generated by the sale of medicines to renew the stock at the Millennium Polyclinic compared to 67% at the GRH/Mangobo;
- 60% of the respondents confirmed that the management and service providers are taken care of individually at the GRH/Mangobo compared to 40% at the Millennium Polyclinic;
- 100% of the respondents confirmed that 70% of the revenues generated by the sale of medicines are housed at the cash register in order to ensure the sustainability of the GRH/Mangobo and the Millennium Polyclinic;
- 73% of respondents confirmed that the renewal of drug stocks depends on 70% of the revenues generated at the Millennium Polyclinic compared to 67% at the GRH/Mangobo;
- 100% of respondents confirmed that there is a bank account for the sale of medicines at the Millennium Polyclinic;
- 100% of the respondents confirmed that the wall thermometer did not exist in both health facilities.

In conclusion, we found that Implementation of Drugs Management Policy is better met at the

Millennium Polyclinic of Kisangani, the private hospital.

hospitals rather than by the personal efforts of the authors.

In view of these results, we suggest:

➤ **To the Congolese State:**

- to broaden the drug capital approach throughout health system policy, including private structures;
- to subsidize the operation of health facilities, including the adequate care of managers and service providers in the event of illness;
- to assign trained pharmacists to the two health facilities concerned;
- ensure monitoring and evaluation;
- provide funding at all levels to enable providers to provide quality care to the population;
- to motivate staff in a decent or stimulating way to enable them to work efficiently and effectively.

➤ **To managers of health facilities:**

- to rationally manage the 30% profit linked to the sale of medicines to motivate staff;
- the wall thermometer is available in each determined sanitary structure;
- to respect the principle of fixity and durability of medicines;
- to comply with the guidelines for the management of medicinal products, i.e. to house the revenue relating to the sale of medicinal products, in particular 30% of the revenue, in a bank account.

➤ **To researchers:**

- To broaden this theme by addressing a study on the impact of the mutual health insurance scheme on the functional organization of public health institutions.

DISCLAIMER

The managers of the Mangobo General Reference Hospital and the Millennium Polyclinic of Kisangani, as we do not intend to use this information from the both hospitals as a means of recourse for any litigation but for the advancement of knowledge. Moreover, the research was not funded by the two

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline written and informed respondents' consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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