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Bank of health prices on acquisition of primary care medicines

Banco de precios de salud en la adquisición de medicamentos de atención primaria

Banco de preços em saúde na aquisição de medicamentos da atenção primária

ABSTRACT
Objective: To compare drug purchases in primary health care before and after the Health Price Bank. Method: Cross-sectional, quantitative study, based on the survey of data available in the information systems for the purchase of drugs in a Social Health Organization in Fortaleza- CE. The source of data collection were information systems for the acquisition of medicines: Gercomp, Bionexo Platform and Publinexo Platform and data available at the Health Price Bank. Data collected from May to November in the years 2016 to 2018. the most purchased drugs in the triennium: Losartana, Omeprazole, Hydrochlorothiazide, Simvastatin and Metformin. Results: After the BPS, there was an improvement in the efficiency of the purchase of medicines, the rate of purchase compared to consumption and a reduction in the rate of shortage in stock. Conclusion: It is believed that the price comparison that the Health Price Bank made possible improved acquisitions, due to the price comparison.
DESCRIPTORS: Primary Health Care; Social Organization; Health Management; Use of Medications.

RESUMEN
Objetivo: Comparar las compras de medicamentos en la atención primaria antes y después del Banco de Precios en Salud. Método: Estudio transversal, cuantitativo, basado en la encuesta de datos disponibles en los sistemas de información para la compra de medicamentos en una Organización Social de Salud en Fortaleza. - CE. La fuente de recolección de datos fueron los sistemas de información de adquisición de medicamentos: Gercomp, Bionexo Platform y Publinexo Platform y datos disponibles en el Health Price Bank. Datos recolectados de mayo a noviembre en los años 2016 a 2018. los medicamentos más comprados en el trienio: Losartana, Omeprazole , Hidroclorotiazida, simvastatina y metformina. Resultados: Después del BPS, hubo una mejora en la eficiencia de la adquisición de medicamentos, la tasa de compra frente al consumo y una reducción en la tasa de desabastecimiento en el stock. Conclusión: Se cree que la comparación de precios que el Health Price Bank hizo posible mejorar las adquisiciones, debido a la comparación de precios.
DESCRIPTORES: Atención Primaria de Salud, Organización Social. Gestión en Salud. Utilización de Medicamentos.

RESUMO
Objetivo: Comparar aquisições de medicamentos na atenção primária á saúde antes e após do Banco de Preços em Saúde. Método: Estudo transversal, quantitativo, baseado no levantamento de dados disponíveis nos sistemas de informação para aquisição de medicamentos numa Organização Social em Saúde em Fortaleza-CE. A fonte de coleta de dados foram sistemas de informações de aquisição de medicamentos: Gercomp, Plataforma Bionexo e Plataforma Publinexo e dados disponíveis no Banco de Preços em Saúde. Dados coletados no período de maio a novembro dos anos de 2016 a 2018. Avaliaram-se os medicamentos mais adquiridos no triênio: Losartana, Omeprazol, Hidroclorotiazida, Sinvastatina e Metformina. Resultados: Após o BPS observou-se melhora na eficiência de aquisição dos medicamentos, taxa atendimento de compra frente ao consumo e redução da taxa de falta no estoque. Conclusão: Acredita-se que a comparação de preços que o Banco de Preços em Saúde possibilitou melhorou as aquisições, devido à comparação dos preços.
DESCRITORES: Atenção Primária à Saúde; Organização Social; Gestão em Saúde; Uso de Medicamentos.

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INTRODUCTION

The World Health Organization (WHO) advocates the highest possible health condition as a citizen's right, and medication is one of the essential inputs to achieve this right. [1] Approved in 2001, the National Medicines Policy is premised on providing the population with access to medicines considered essential, in addition to "guaranteeing the necessary safety, efficacy and quality of these products, promoting rational use and the population's access to those considered essential". For this, this policy seeks to establish the list of essential drugs, reorient pharmaceutical care, encourage the production of drugs and their health regulation. [2]

The distribution of medicines in Primary Health Care (PHC) is part of the process of cure, rehabilitation and disease prevention. The drugs distributed at this level of care are called essential drugs, as qualified by the WHO, as they meet the basic health care needs of the majority of the population. In order for the ABS to be effective, establish a bond and take responsibility for the users, it is essential to guarantee access to quality medicines, at the right time and according to the user's needs. However, one of the reasons that negatively impacts attention at this level is the lack of essential drugs. [3]

Health has in the administration of materials one of the crucial points of unit management. The public sector has shown itself to be concerned with the issue of efficiency, bringing to discussion the importance of professionalizing the actions of medium activities. [4] The acquisition of drugs is one of those activities that aim to offer drugs in quantity, quality and at a lower cost, in order to maintain the regularity and functioning of the system. [5]

In order to collaborate with this activity, the Brazilian Ministry of Health created the Health Price Bank (BPS - Banco de Preço em Saúde), a free online system with open access that provides information on public and private purchases of medicines and health supplies in order to: monitor the behavior of prices in the medicine and health products market;

provide information to the public manager for decision making; provide transparency and visibility in relation to the use of the Unified Health System (SUS) resources for the purchase of medicines and health products and publicize data that can provide social control over public spending on health. Becoming an important tool for health managers to improve negotiations with suppliers, increasing transparency and productivity in the acquisition of medicines and pharmaceutical products. [6]

The search for partnerships with the Third Sector arose at a time of criticism of the bureaucracy of public administration and of new economic, political and social demands placed on the State. [7,8] Its objectives are to make management more flexible and increase control and transparency through the accountability of the public administration for contracting results, with targets, indicators and monitoring and collection instruments defined by the State being agreed upon and enabling greater control. [8]

The city of Fortaleza-CE has some contracts with Social Health Organizations (OSS - Organizações Sociais de Saúde) qualified to manage health services in the city, including the OSS, responsible for managing the macro-processes of logistics and service of the Primary Health Care Units (UAPS). Within the scope of this contract, the OSS is responsible for the acquisition and distribution of medicines defined as priority by the Municipal Health Department. [9]

In the search for the best work format that meets the above requirements, the OSS in question chooses to use acquisition platforms validated by the government, based on the work processes indicated in the bidding law [10] and in other legislations that refer to the acquisition processes. [2,11] In 2017, this OSS started to adopt the BPS values as a comparative reference for drug purchases from the Primary Health Care Units (UAPS) in Fortaleza-CE, in accordance with Resolution No. 18 of the Tripartite Inter-Management Commission. [12]

Until 2016, the BPS was not taken into account in the purchase of medicines from the OSS in question, only the comparison of the purchase price of medicines with the table of the Medicine Market Regulation Chamber (CMED) was used. With the market trend towards the continuous search for efficiency and transparency, in the updating of the institution's acquisition policy, it included a consultation with the BPS in search of savings at the time of acquisition process pricing, using the tool's values as a basis for Lawsuit.

Thus, it is worth analyzing whether the act of referencing the values for the purchase of health products through the BPS can interfere with efficiency as well as in the fulfillment of the objectives agreed between the public entity and the aforementioned OSS, given its nature of contract design management. Thus, the study is based on the following question: Did the use of BPS have any impact on the acquisition of medicines in Primary Health Care in Fortaleza-CE in 2017 and 2018, compared to the year 2016? Therefore, this study aims to compare drug purchases in primary health care (PHC) before and after the use of BPS.

METHOD

This is a descriptive research, with a quantitative approach, based on the survey of data available in information systems for the acquisition of medicines in an OSS in the city of Fortaleza-CE.

The source of data collection were three information systems that operationalize the acquisition of medicines by OSS: Gercomp, Bionexo Platform and Publinexo Platform. Gercomp is OSS's construction and ownership software, which internally manages the acquisition processes in their various phases. The Bionexo and Publinexo platforms are contracted tools that promote the automation of the negotiation phases, increasing the visibility and transparency of information for faster and more assertive decision-making. This cloud for health allows buyers and sellers to meet in the same virtual space, providing negotiation regardless of geographic barriers. [23]

In addition, data available on the BPS portal were used, a computerized platform that aggregates information on the prices of medicines purchased by public and private entities, managed by the Ministry of Health, with free access to consultations by the population, providers and managers. [6]

The data collection process took place from June to August 2020, where data from three different periods were analyzed to enable comparison. The data collected were for the period from May to November from 2016 to 2018, and in 2016 there was no use of BPS in the acquisition process of that OSS. As a criterion for inclusion in the study, it was defined to analyze the process of acquisition of the five items with the highest consumption among the priority items defined by the Municipal Health Department for primary health care for the population of the municipality of Fortaleza-CE. Having as exclusion criteria the drugs that were entered or left the priority list of the municipality in the analyzed period.

For the collection of variables, a form was used, built by the researcher through an electronic spreadsheet created in the Microsoft Office Excel 2010® software, fed by the consultation carried out in the Gercomp, Bionexo Platform and Publinexo Platform systems. In 2016, before using the BPS, the data were tabulated observing the purchase category (emergency, direct or scheduled), the quantity purchased and the purchase price. In the same period of 2017 and 2018, noting in addition to the acquisition category used, the quantity purchased and the acquisition value, the average consumption of medicines in the period, the product shortage rate at the Pharmaceutical Supply Center and the percentage of serving consumption through acquisitions.

The results of the acquisition processes analyzed in 2017 and 2018 already consider the reference price of the

product in the BPS for the northeast region, a filter used to minimize the distortion of values between regions in Brazil, seeking in this comparison registered acquisitions that present similarity in the brand, quantity in the geographic region and period analyzed, accepting a tolerance margin of ten percent above the value found in the records, given the difficulty of finding all similarity factors in the comparison, these parameters are definitions of the OSS itself in agreement with the entities contractors.

The periods were chosen taking into account the annual calendar for readjustment of drug prices in the Brazilian market, which takes place in April, the recess of drug laboratories and distributors, which influence the product delivery process, which occurs in the months of December and January and the date of implementation of the method of comparison of acquisitions with BPS, which occurred in May 2017. The variables analyzed were:

- % Closing against requests: it is the ratio between the number of physical units of the drug acquired in the final result of the acquisition process and the quantity requested in the opening of the purchase process. Indicates how much it was possible to acquire compared to what was expected in the opening of the acquisition process;
- % Purchase service against consumption in the period: indicates the relationship between the number of physical units of the item purchased in the period and the demand for the product (in physical units) by the health units in the period. The percentage indicates the capacity to meet consumer demand with its potential for efficiency. It should be noted that the stock volume of items in storage and the temporality of the acquisition processes are factors that influence the supply process of the health units attended.
- % Item out of stock in the period (in days): Lists the number of days the product was out of stock at the Pharmaceutical Supply Center with the total time of availability in the period analyzed, indicating the percentage of time the item was not available for distribution to health facilities.

In the data analysis, the same software, Microsoft Office Excel 2010®, was used, where descriptive analysis was applied, calculating the average and rates described above.

The study in question complied with Resolution No. 510/16, and was submitted to the ISGH's Internal Research Commission and signed a letter of consent by the Corporate Board of the aforementioned institution.

RESULTS

To achieve the objectives proposed in the research within the period of analysis and inclusion criteria, the five items of greatest relevance in terms of volume of acquisitions in 2016, 2017 and 2018 were studied, as they are the most consumed items, they are: Losartana 50 mg cp., Omeprazole 20 mg cp., Hydrochlorothiazide 25 mg cp., Simvastatin 20 mg cp. and Metformin 500 mg cp., as shown in Table 1:

We should consider that there was still a time frame within each year analyzed, to minimize distortions caused by seasonality, change in the official reference price table and the beginning of the analysis of acquisitions comparing the purchase value with the parameters established in the BPS, of this In this way, the indicators of % of purchase fulfillment against consumption in the period and % of item out of stock for the period do not present a cause-effect relationship, as purchases made in the period between December and April of the years analyzed must be considered, these may influence the results presented by this indicator over time.

Global indicators were observed to trace the purchase profile of the items considering the purchase efficiency when comparing the values of purchases made by the OSS with the reference values of the BPS, according to the comparison criteria discussed above.

Table 2 shows the global purchasing indicators for the three-year period in relation to the purchase of the drugs described above, and it is important to emphasize that in 2016 the BPS was not used as a tool to guide the purchase price.

In general, an increase of 33% in the number of open procurement processes between 2016 and 2017 can be seen, but in 2018 there was a 20% reduction in the number of open procurement processes compared to 2016.

In the stratification of open purchasing processes, there was a 40% reduction in the period analyzed in the number of scheduled purchases, with a slight increase between the periods. Regarding direct purchases, there was a drastic reduction in the number of purchases be-

Table 1 – Absolute consumption of medicines between the years 2016 and 2018.

MEDICINE	2016	2017	2018
Losartana 50 mg cp.	12.287.250	14.947.785	24.058.215
Omeprazole 20 mg cap.	10.497.876	10.002.786	10.398.236
Hydrochlorothiazide 25 mg cp.	7.865.720	9.047.520	11.529.945
Simvastatin 20 mg cp.	5.592.445	7.967.270	11.627.400
Metformin 500 mg	4.712.350	14.066.460	21.077.883

Source: Prepared by the author.

tween the years 2016, 2017 and 2018, and in 2018 no purchase requests were registered in this modality between the months of May and November. On the other hand, a substantial increase (900%) in the number of emergency purchases between 2016 and 2018, with the peak of launching this type of purchase in 2017.

In relation to failed purchases in the triennium, the year 2016 drew attention as it was noted that in 2016, of the 15 open purchase processes, 09 failed, that is, the efficiency of acquisitions in the period was only 40%. Of the 09 purchases that failed, 06 of these were launched in the direct purchases category and 03 in the scheduled purchases category. When listed by item, we have the following distribution, Table 3:

With the 2016 crisis, health policy experienced a moment of uncertainty and inconstancy due to the worsening of the political crisis, which led to the temporary removal of the President of the Republic, followed by her impeachment by the Federal Senate in August. [24] And as can be seen in the results presented in the year in question, 2016, the worst results of the triennium can be seen, with the highest number of failed purchases, the lowest purchase efficiency rate, lowest purchase service rate compared to the consumption of the period and the highest stockout rate of the item in the period, resulting from a year of scarcity of financial resources.

It should be noted that in the year with the highest incidence of failed acquisition processes, there was still no comparison between the values practiced in the market and BPS records. Regarding the only failed purchase request in 2018, this fact occurred due to the pending solution with the supplier of another acquisition process that presented a delay in the delivery of the product, thus generating this emergency request, not related to the impossibility of closing the acquisition for lack of adequacy to the parameters of comparison with the BPS.

The cancellation of 01 acquisition process in 2016 should not be considered in the efficiency analysis, as it occurred due to a deliberate administrative demand by OSS, since the canceled request had been opened due to delay in the delivery of the product by the supplier of a previous purchase, thus regularizing the situation before the closing of this purchase request, there was an administrative decision to cancel it.

In 2017, 04 acquisitions were registered with partial closing, where the number of requested items was not fully met in the final result of the acquisition process, with 03 cases in emergency purchases and 01 occurrence related to direct purchase. Partial receipts affected purchases of Omeprazole 20 mg cap. (02 occurrences), Metformin 500 mg cp., (01 occurrence) and Losartan 50 mg cp. (01 occurrence).

The reasons that led to the partial closing of the purchases were the lack of availability of the total quantity of the item for prompt delivery in the request (03 incidents) or adjustment of the quantity purchased in relation to the request, due to the effective delivery of the item from another request during the purchase process (01 incidence). It is also noted that the reasons for the partial closing of purchases are not related to impediments arising from the process of comparing prices with the BPS table.

Regarding the efficiency of the acquisition process in the period, 3 rates described in the method can be analyzed, where the purchase efficiency rate increased after using the BPS, the purchase service rate by consumption in the period had an increase in 2017 and then a decrease in 2018. And finally the rate of the time the item was unavailable to the population, where in the first year of the comparison with the BPS 2017 there was a small drop and in 2018 this rate was close to zero, indicating that the units during 2018 they were supplied, as shown in the following chart:

Table 2 – Indicators of OSS acquisitions between 2016 and 2018.

STRATIFICATION OF OPEN PURCHASING PROCESSES	2016	2017	2018
Number of Scheduled Purchases	5	6	3
Number of Direct Purchases	9	3	0
Number of Emergency Purchases	1	11	9
Number of open purchase processes	15	20	12
Number of failed purchases (total)	9	0	1
Number of purchases with partial closing (total)	0	4	2
Number of canceled purchases (total)	1	2	1
Total completed purchase processes	5	18	10

Source: Prepared by the author.

Table 3 - Failed purchases by item between 2016 and 2018.

ITEM	2016	2017	2018
Omeprazole 20 mg cap	0	0	0
Hydrochlorothiazide 25 mg	4	0	0
Metformin 500 mg	5	0	0
Losartana 50 mg	0	0	1
Simvastatin 20 mg cp.	0	0	0
Total failed purchases	9	0	1

Source: Prepared by the author.

DISCUSSION

Comparing the acquisition of medicines in the PHC before and after using the BPS in Fortaleza-CE, there was an improvement in the acquisition process after the implementation of the use of the BPS and this fact is related not only to the use of the BPS, but also to the changes in the country's political and economic scenario.

Universality has led to an expansion of the population's access to health services, and the government, in order to meet this SUS principle, has been strengthening the ABS, which has assumed a priority position through the reorientation of health policies at the local level, seeking to strengthen the "gateway" of the healthcare system. [3] As a place where essential drugs are distributed, that is, those that meet the basic health care needs of the majority of the population, selected according to their relevance in public health, evidence on efficacy and safety, as well as comparative cost-effectiveness studies. [1,3] A study on the use of medicines by SUS PHC users in Brazil, which evaluated 8.803 people from 272 municipalities, concluded that Losartan, Simvastatin, Omeprazole, Hydrochlorothiazide and Metformin are in the ranking of the most used medicines, in that sequence, by the population. [14] This fact corroborates the findings of the study in question, where the PHC in the city of Fortaleza - CE in the 2016-2018 triennium pointed to the same drugs as the Brazilian study, with alternating positions in the ranking of highest consumption between years (Table 1).

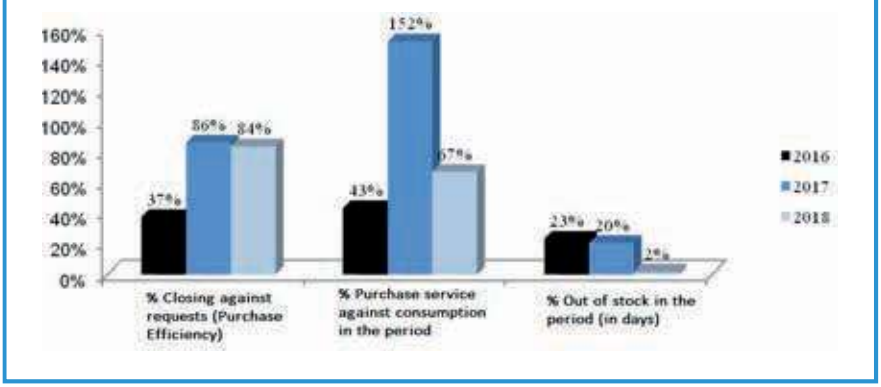
A study carried out in the PHC of Blumenau - SC evaluated the user's perception in relation to access to medication, showing that about 25,0% of the participants did not obtain all the prescribed medication, of which 77,2% did not have access to at least a drug having as one of the main causes of non-acquisition the "absence of the drug in the pharmacy stock" (40,7%). [25] Inventory management is a challenge for health, due to the specificities and variety of products needed, so it is necessary to maintain effective inventory management, with reliable data, [26] as inventories mean an idle resource, the manager must seek to maintain an adequate level for consumption, and this avoids immobilized financial resources. The important thing in stock management is not to generate excessive quantities of stored products, nor to let them go missing, which causes a failure in the patient's therapeutic plan. The variety of products needed and the risk of shortages can lead to excessive inventories, disrupting processes both in terms of control logistics and its physical organization. [27]

The purchase of drugs requires the dialogue of pharmaceutical assistance with the administrative and legal areas, as, in addition to financial issues, ensuring the quality of the drug is essential in this process. [10] Understanding this importance, access to medicines remains a concern, as it is still affected by the low availability of essential medicines in public health units in Brazil, [15] contradicting this national reality, the APS of the municipality of Fortaleza-CE presented in 2017 a percentage of purchases above the need, which was marked by the decrease in 2018. Despite the drop in 2018, there was no shortage, as analyzed by the rate of lack of the item in the period.

This result is guaranteed by the integrated management of the supply chain, from the planning stage, with study and definitions on the best acquisition modality, the quantity to be acquired, monitoring of price variations, search for new suppliers, patent release, etc. , going through the acquisition process itself and monitoring the receipt of the product, analyzing the purchase conformity and the supplier's qualification, providing feedback to the pharmaceutical supply cycle. [28] A case study carried out in Botucatu - SP showed that the OSS in question purchased supplies and medicines with greater agility and lower cost, demonstrating the management of work processes. [29] A fact that is repeated in Fortaleza-CE, since in 2018 the rate related to the time the item was out of stock was 2%, this low rate reflects the autonomy, flexibility, purchasing power and management that OSS represents.

In Brazil, drug price regulation is carried out by the Medicine Market Regulation Chamber (CMED - Câmara de Regulação do Mercado de Medicamentos), created in 2003, with the purpose of promoting and expanding pharmaceutical assistance in the country, through price control rules, in addition to use mechanisms that "stimulate the supply of medicines and the competitiveness of the sector". [11,17] In order to increase bargaining power, through research and price comparison at national, regional and local levels, the Ministry of Health has developed a tool called the Heal-

Graph 1: Efficiency of the acquisition process between the years 2016 to 2018.



Source: Prepared by the author.

th Price Bank (BPS), which is a system in which agencies and public or private institutions can voluntarily notify their purchases of medicines and health products and, therefore, make them available for consultation. Created in 1998, the main objective of BPS is to publicize and transparent public expenditures, as well as to improve the management and efficiency of purchasing processes. In order to complement the information entered, BPS also makes available information on health purchases made by all direct, local and foundational Federal Public Administration obligatorily registered through the Integrated System of General Services Administration (SIASG - Sistema Integrado de Administração de Serviços Gerais). [6,18] According to the Price Analysis and Consultation Manual using the BPS, some aspects should be taken into account for the comparison, such as: item description; supply unit; Unit price; quantity traded; purchasing institution; provider; manufacturer; type of purchase; purchase mode; market concentration; patent term; notice requirements and contracting conditions; qualification of the purchasing institution; and supplier qualification.[6]

Despite the BPS and CMED, the drug market is marked by significant price differences in public sector purchases. And one of those responsible for this scenario is the uncertain estimate of reference prices. [18] This lack of assertive estimate becomes a difficulty for those responsible for purchasing at the OSS, as despite being a private company, it deals with public money and this leads them to respect the precepts of public purchases to acquire the medicines, but in June 2017 it became mandatory for the states, municipalities and the Federal District to supply BPS, and with this the price survey for the tool has become increasingly more reliable and expressive. [30]

In the search for the best acquisition, the OSS in the study uses these two tables, BPS and CMED, as a guide for its purchasing processes, but the final price is defined through the electronic auction, where the lowest price in the market will win, guaranteeing the quality and delivery of the product within the estimated period, if the auction values do not reach the values marked by the BPS and CMED, the purchase is considered a failure and a new process must be opened, which did not happen in 2017 and 2018. It is noteworthy that OSS follows the recommendation of the Federal Court of Accounts [18] in relation to the use of the CMED table, as the reference prices presented are not constructed to reflect market values, but to regulate drug prices and constitute parameters for the definition and adjustment of prices.

Also according to the Federal Court of Accounts, [18] among the benefits of the electronic auction is the expansion of competition, since companies headquartered in any federative unit can participate in the event. This is a fact that OSS can experience, as it has been able to negotiate not only with local distributors or from other states, but also directly with the manufacturers of pharmaceutical ingredients.

CONCLUSION

After using the BPS, there was an improvement in the efficiency of drug acquisition, purchase service rate compared to consumption in the period, and a reduction in the out-of-stock rate of the item. It is noteworthy that the use of BPS in the process of purchasing medicines from the PHC in the city of Fortaleza-CE was one of the important factors for improving the process of purchasing an OSS, as it brings to light the possibility of price comparison between all health care entities in Brazil.

However, the political-economic issues of the period must be taken into account, which influenced the capacity of the government to react to the population's increasingly growing and qualified needs, thus reflecting on the dynamic interaction between the State and the Market in public-private relations and in the capitalist system.

The theme in question is not exhausted in this article, this subject must be exhaustively explored in order to ensure the best use of public money in the search for quality health care for the population. ■

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