

CLINICAL CARE PROFILE AS A TOOL FOR MEDICATION STANDARDIZATION IN A MUNICIPAL PUBLIC HOSPITAL IN THE NORTHERN RIO DE JANEIRO REGION

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Abstract: Medication standardization consists of a medication selection tool that seeks to compose the therapeutic arsenal of hospitals and health units, acting as an ally to pharmaceutical services, promoting improvements in hospital management. The objective was to understand the clinical care profile of a public hospital in the Northern Fluminense Region, in order to propose a medication standardization scheme promoting their rational use based on the hospital's demand. Through a retrospective observational study collected from the RAG - Annual Management Reports made available by the administration of the hospital under study, from April to September 2022, the hospitalization profile of the Medical Clinic (CM) was identified, where 161 patients were counted, 60.87% of whom were male, with an average age of 63.3 years, corresponding to a total of 61.49% of elderly patients. The main reasons for hospitalizations were: Genitourinary System Diseases (29.19%), Respiratory System Diseases (17.39%), and Circulatory System Diseases (12.42%). Circulatory system diseases stand out as the main cause of mortality in the population studied, which is not different from the occurrence in the country, followed by respiratory diseases. The hospital under study has a closed/selective standardization, listed by indication of prescribers, analyzed and made viable by the hospital's pharmaceutical service. Of the medications that make up the hospital's pharmaceutical stock, 88.86% are on the REMUME list. The high percentage of adult and elderly patients in the CM may be directly related to organizational issues at the Primary Health Care levels, which when not well structured can overload tertiary care, directing the management of services. Important elements such as the service profile qualify the proposal for the medication standardization process, encouraging the

creation and implementation of a Pharmacy and Therapeutics Committee (CFT) in the Hospital under study, for qualified and comprehensive interprofessional listening, seeking to meet the needs of the population served, aiming at optimizing the therapeutic arsenal and promoting the Rational Use of Medications in the public sector.

Keywords: Hospital Pharmacy; Medication Standardization; Pharmaceutical Assistance; Rational Use of Medications; Epidemiological Profile.

INTRODUCTION

The Hospital Pharmacy (HPP) is characterized by a clinical unit with healthcare aspects, combining technical and administrative skills, and is coordinated exclusively by a pharmacist, according to Ordinance 4,283, of December 30, 2010, published by the Ministry of Health (MS) (BRAZIL, 2010). As a space for activities related to pharmaceutical care, the HPP is part of the organizational structure of a hospital, and linked to other healthcare units, it is a pillar in hospital financial management (NASCIMENTO et al., 2013). However, even understanding the importance of this service, it is not, and has never been, easy to implement. The first record of pharmacists working in hospitals occurred at Pennsylvania Hospital, located in Philadelphia, United States, in 1752. However, it was only in the 1940s, in 1942, that the American Society of Hospital Pharmacists (ASHP) emerged, a global reference to this day. With its emergence, we have the focus on the user of the medicine and the role of the pharmacist as a clinical professional integrated into the health team (PAUFERRO; PEREIRA, 2010). In Brazil, these professionals were inserted into the hospital area in the 1950s, operating basically in ``*Santas Casas de Misericórdia*`` and gradually achieving expansion and theoretical mastery of

knowledge in this area, which promotes the training of the Hospital Pharmacist (BRAZIL, 1998a; PAUFERRO; PEREIRA, 2010). The strengthening of the activities of the hospital pharmacist was evidenced by the creation of the Brazilian Society of Hospital Pharmacy (SBRAFH) in 1995, bringing a more scientific, humanitarian and cultural focus. This association, linked to the professional councils, documents pharmaceutical activities in the hospital, creating minimum standards for hospital pharmacy and health services (SBRAFH, 2017). It is at this point that the pharmacist becomes essential, since within the scope of the FH, in addition to supporting health actions through the duties of the Pharmaceutical Assistance Cycle, this professional promotes the safe and rational use of medicines, aiming to guarantee better patient adherence to treatment using medicine as an essential instrument (JÚNIOR, 2018).

One of the biggest challenges of the hospital pharmacy is Medication Standardization (MS), as it consists of a tool for selecting medicines that strategically compose the therapeutic arsenal of hospitals and health units. When properly organized, MS is an ally of pharmaceutical services, promoting improvements in hospital management, effectively meeting the therapeutic needs of individuals, considering their characteristics and peculiarities, in a safe and efficient manner (DUARTE; MORAIS, 2021).

These processes also influence good acquisition and inventory management, resulting in better planning, reduced costs, and promoting convenience in administration, ease in calculating doses, variety in dosage, fractionation, and the choice of pharmaceutical form and presentations (LIMA-DELLAMORA et al., 2014; DUARTE and MORAIS, 2021).

However, the difficulty of this standardization is due to the multitude of medicines available on the market, promoting fierce market competition, in addition to the rapid development and insertion of new technologies in pharmaceutical products and technological equipment for diagnostics, resulting in high costs for the health sectors (CFE, 2011; PELENTIR et al., 2015). The high budgetary costs in this sector can also be related to the aging population, which in fact results in specialized care, with greater attention, including in most cases high-cost medications related to chronic-degenerative diseases and also medications for continuous use (MUNIZ, 2019; MOREIRA et. al., 2020), but also the insertion of new therapeutic procedures, aggravated by the time of the new coronavirus pandemic.

An ally in this system is the National List of Essential Medicines (RENAME), which is one of the guidelines of the National Medication Policy (PNM) (BRAZIL, 1998), and acts as a mediator for the structuring of lists of medicines at both the state and municipal levels, giving rise to the Municipal List of Essential Medicines (REMUME). This, in turn, consists of a list of essential medicines that satisfy the needs of the population of a given municipality, selected based on the epidemiological profile, according to safety, efficacy and costs, optimizing the selection and acquisition of the pharmaceutical cycle (BRAZIL, 2012).

In this sense, according to Duarte and Moraes (2021), in order to execute the drug standardization process, it is necessary to consider three categories, namely: **Open standardization**, which consists of a pre-prepared and defined list, in which the stock can be supplied with unlisted drugs; **Closed standardization** provides high control over the prescriptions and drugs requested, therefore, to include a drug that is not part of

the existing list, there is a need for a special request to the Pharmacy and Therapeutics Commission (CFT); and finally, selective and partially closed standardization, corresponds to an open standardization, however, there are some previously described criteria for the acquisition of unlisted drugs. There are some clinical specialties that are able to prescribe certain drugs, generally of a high cost nature, and these drugs require special monitoring (SILVA, 2020).

To know the needs of the hospital unit, it is possible to make the appropriate choice of the type of standardization, however, for good administrative management it requires the existence or implementation of a Pharmacy and Therapeutics Committee or Pharmacotherapy Committee (CFT) (GRENN et al., 2003), and/or even the preparation of a standardized list of medications based on the epidemiological profile of the hospital unit (PRIMO et al., 2015). Pharmacy and Therapeutics Committees act as strategies to standardize and organize the use of medicines within hospitals and consist of deliberative organizations designated by the hospital's own board of directors, which require the presence of pharmacists, as well as other health professionals such as doctors, nurses, physiotherapists, among others, that is, a multidisciplinary composition capable of regulating and establishing the standardization of medicines, occurring in a concise manner with the reality of the population served by that institution (PRIMO et al., 2015). In this sense, this work aims to understand the clinical care profile of a Public Hospital in the Northern Fluminense Region, in order to develop a scheme for standardizing medicines, promoting their rational use based on the hospital's demand.

MATERIALS AND METHODS

PROJECT OF STUDY

This is a descriptive-observational, retrospective, cross-sectional study, with quantitative and qualitative characteristics, collected from the RAG – Annual Management Reports made available by the administration of the Public Hospital of the Northern Fluminense Region of the State of Rio de Janeiro, from April 2022 to September 2022. In this, we sought to highlight one of the clinics with the highest number of hospitalizations as a tool for developing a hospital care profile; analysis of the hospital's current medication standardization system.

Parameters such as gender, reason for hospitalization, mortality and medications used were evaluated through the analysis of archived institutional documents, including internal reports, acquisition, dispensing and consumable lists from the hospital pharmacy, annual and quarterly reports, REMUME and government websites and later compiled in the Microsoft Excel 2017 program for analysis.

PLACE OF STUDY

The hospital under study is a general horizontal public hospital located in the mountainous region of Northern Rio de Janeiro, serving approximately 40,000 SUS users. At times, it is the only clinical resource in that location and also serves as a practical field in the training of professionals and future health professionals. During the study period, it had a total of 33 beds, divided into: 15 beds for the Medical Clinic (CM), 10 beds for the Surgical Clinic (CC), 3 beds for the Emergency Department, 3 beds for COVID-19, 1 bed for polytrauma, and 1 bed for hypodermia. Furthermore, it is characterized as a Small Hospital which provides care for spontaneous and referred demand, being a reference in Urgent and Emergency care, in addition to

having the following specialties: Allergist, Cardiologist, General Clinic, Gynecologist, Minor Surgeries, Outpatient Dentist, Endocrinologist, Physiotherapy, Orthopedics, Psychiatry, Urologist, and also has support and diagnostic services.

DATA ANALYSIS

The data collected were computed and organized in a database using Microsoft Excel and subsequently expressed in graphs and tables. The analysis was performed in three stages: the first stage was the analysis and characterization of the hospital's service profile; the second was the analysis of the medication standardization system and the standardized list used as a basis in the FH; the third stage consisted of developing a methodology as a proposal for medication standardization for the hospital, according to the service profile.

Therefore, during the data analysis, some inclusion and exclusion criteria were implemented for data screening, with the following being used as inclusion criteria: clinic with the highest service rate during the study period and as exclusion criteria: number of outpatients, referring to emergency and elective surgery, as well as number of patients outside the study period.

Regarding the medications used by the FH, the functioning of medication standardization in the institution was observed with the hospital pharmacy team. For the study, we used the hospital's archived documents relating to medications, as well as acquisition and dispensing records and standardized lists, identified according to the following characteristics: a) name of the medication, b) concentration and c) pharmaceutical form, in addition to being classified and organized according to the Anatomical-Therapeutic-Chemical (ATC) system recognized and recommended by

the World Health Organization (BRAZIL, 2022). After gathering all the data previously presented, a comparison analysis was carried out between the medications present in the current REMUME literature and the medications present in the hospital's current list, in order to propose, in the end, a method of standardization of essential medications according to the care profile of the chosen clinic.

The present study carried out secondary data analysis without the involvement of human beings as research subjects, that is, there was no contact with the patients and consequently without the possibility of disclosing their personal data and the institution under study. Therefore, the present study met the bioethical requirements contained in Resolution 196/96 and, as explained, there was no need to forward it for submission to the Research Ethics Committee (BRAZIL, 1996).

RESULTS AND DISCUSSION

SURVEY OF THE HOSPITAL'S SERVICE PROFILE FROM APRIL 2022 TO SEPTEMBER 2022:

According to the data analyzed from the available internal reports, during the study period, the Medical Clinics (MC), Surgical Clinics (SC) and Emergency Department presented 173, 430 and 847 consultations, respectively. Among the three clinics, it is observed that although the Emergency Department and the SC stand out, both were considered, in our methodology, as exclusion criteria. The emergency department, due to the fact that patients use the service according to some clinical condition, generally without progression to hospitalization, and the surgical clinic, in general, is an elective event. Thus, it was decided to give emphasis to the Medical Clinic (MC). Considering that the CM is the

one that provides the most care in relation to the prevention of non-surgical diseases and, considering the services of the specialties offered by the hospital, the importance of this clinic for the population becomes evident, since, in this region, the public hospital represents the gateway to the Basic Care services in the SUS, where the CM appears as an alternative of access, congesting or interfering in the health services provided by public hospital institutions, most likely this situation occurs due to the public's lack of knowledge about the different levels of health care.

The key points to be highlighted in relation to the demand for hospital care for the population are accessibility, resolution and the volume of services provided. A patient's preference for a health service, in most cases, is related to the care and the speed with which their problems are resolved or alleviated, hospitals encompass a set of broader services that are recognized by the user (GHENO, 2012).

Following the list of hospitalized patients, a total of 173 patients were observed, of which only 161 were included in the study, applying the inclusion and exclusion criteria as a data screening tool. According to Table 1, of the 161 patients, 60.87% were male and 39.1% were female, with an average age of 63.3 years. The majority of patients in the study were elderly, corresponding to the age range between 61 and 90 years.

This high prevalence of the elderly population can be explained based on the demographic transition process experienced in the country and in the world. According to the 2010 census, in Brazil, approximately 20.5 million of the population is elderly, that is, approximately 11% of the population as a whole (GHENO, 2012). Thus, the hospitalization process, as well as hospital admissions of this population, trigger a greater need for attention from health professionals

and managers for a care schedule related to the profile of this population. (MORAES et al., 2014)

According to Corgozinho and collaborators (2019), the high percentage of adult and elderly patients in CM may be directly related to organizational issues still at the Primary Health Care levels, since, when this service is not well structured, it can overload tertiary care, making it difficult to manage the services offered. Among the main reasons for hospitalization of the study population, it is observed that the clinics with the highest number of hospitalizations prevailed: Genitourinary System Diseases (GSD) with 29.19% (47), Respiratory System Diseases with 17.39% (28) and Circulatory System Diseases with 12.42% (20).

The high proportion of Chronic Non-Communicable Diseases (NCDs) for a hospital that mostly has an adult and elderly patient population is an expected reality, on the other hand, cardiovascular and respiratory diseases are considered causes of hospitalization and morbidity and mortality. (CORGOZINHO et al., 2019; OLIVEIRA, 2015) The characterization of the hospitalization profile of CM in hospitals assists in the process of organizing and programming health services, as well as in the levels of health care. In view of this, it is worth highlighting that the clinic with the highest hospitalization rate was that of diseases of the genitourinary system, of which 15.56% corresponded to the male population and 13.61% to the female population, as observed in Table 2, where we can see the percentages for the other diseases. Regarding diseases of the circulatory and respiratory systems and neoplasms, it is observed that hospitalized patients are mostly male and adult age up to 55 years. These data corroborate the history of men's health care, often neglected, on the most diverse fronts and action, discussion

Gender		Age (years)					
	Female	Male	Up to 50	51 to 60	61 to 90	>90	Total
Number	63	98	38	29	89	05	161
%	39,13	60,87	23,60	18,01	55,27	3,12	100%

Table 1: Information on age range and gender of patients admitted to the hospital under study, from April to September 2022.

Source: RAG – Annual Management Report of the hospital under study, data collected from April to September 2022.

Admission profile	CID-10	F	%	M	%
Diseases of the Genitourinary System	XIV	22	13,64%	25	15,55%
Diseases of the Respiratory System	X	12	7,45%	16	9,93%
Circulatory System Diseases	IX	6	3,72%	14	8,69%
Digestive System Diseases	XI	5	3,10%	4	2,48%
Neoplasms	II	2	1,24%	5	3,10%
Infectious and parasitic diseases	I	1	0,62%	6	3,72%
Sum of other health problems.		13	8,07%	22	13,66%
Incomplete data		2	1,24%	6	3,72%
Total		63	39,08%	98	60,85%

Table 2: Distribution of the number of hospitalized patients by gender associated with the reason for hospitalization according to ICD-10 in the period from April to September 2022.

Source: RAG – Annual Management Report of the hospital under study, data collected from April to September 2022.

and commitment to self-care. According to Berbel, 2020, the fragility of men's health is associated with the difficulty of accepting human vulnerability, which could put their masculinity at risk (BERBEL, CHURELLI, 2020; FILHO, et. al., 2021).

In detail, it is observed that among the diseases of the genitourinary system, Urinary Tract Infections - UTIs were recurrent among the hospitalized population for both sexes, of which 24.22% were admitted due to such a complaint, as described in Table 3.

The UTIs also stood out as the main reason for hospitalization among the adult population up to 59 years of age, corresponding to 13 patients, as well as prevailing among the elderly population from 60 years of age, corresponding to 26 patients. These infections of bacterial origin that perpetuate throughout the life of a population, and can affect men and women of any age group, the increase in

cases may be associated both with an incorrect diagnosis and also with inadequate treatment, which can result in a pathology that presents a greater level of aggravation for the patient's condition (ARROYO et. al., 2020). According to the literature, it is observed that the highest frequency of UTI cases affects women and this is due to anatomical and physiological factors such as, for example, the female urethra is shorter, causing it to be closer to the anus, which leads to the spread of bacteria through the urethra, in addition to the bladder being larger, causing urine storage to last longer, hormonal changes, vaginal pH, pregnancy and menopause, these and several other factors favor the vulnerability of women, relating them to the high rates of hospitalization for UTIs. (GHENO, 2012; SILVA et. al., 2021)

Regarding gender, there is a minimal difference in hospitalization for UTI, of the 24.22% of UTI, the male population

represents 13.06% of the involvement by diseases of the genitourinary system and the female population 11.16% (Table 3). As discussed by ARROYO et al, (2020), some factors may be associated with the incidence of diseases belonging to this clinical group, favoring their development, such as sex and age. In this sense, in elderly individuals, aged 65 or over, the diagnosis of urinary infections becomes frequent, since concomitant with the decrease in physiological reserves there is an increase in the prostate that leads to the process of emptying the bladder, that is, there is a prolongation of this event, which favors stagnation of urine and thus the spread of bacteria that contribute to the appearance of male urinary tract infections.

Within the clinic of respiratory diseases, the main ones were pneumonia, pulmonary edema and pleural effusion, as shown in Table 3, for the clinic of diseases of the circulatory system the main reasons for hospitalization were decompensated CHF, stroke, angina and PAOD. Cardiovascular and respiratory diseases are part of the NCDs, as are neoplasms, diabetes and diseases of the digestive system, which are considered the most widespread group of diseases in Brazil, mainly affecting the most vulnerable portion of the lower social classes, that is, those with low education and income (BRAZIL, 2021). According to LOYOLA and collaborators (2004), the elderly population had the highest rate of hospitalizations due to the aforementioned diseases. Concomitantly, diseases of the circulatory system stand out as the main cause of mortality among this population in the country, followed by respiratory diseases.

Neoplasms such as lung cancer and head and neck cancer accounted for 0.62%, with prostate cancer being the most common at 1.24%. It is a silent pathology that evolves slowly, manifesting itself through the genitourinary system and that can be directly

related to advancing age. Other neoplasms were presented by the male population, but at lower incidence rates, among them leukemia and renal cell cancer with 0.62%. The female population presented equal percentages for head and neck SCC and metastatic neoplasia, with 0.62%. A decreasing incidence of cancer was observed when compared to the male population. This decrease is the result of public prevention and diagnosis policies (MACAHADO, et al., 2021), in this case mainly in relation to cervical cancer, but it also expands the scope to other categories of neoplasms, since the female population adopts the practice of routine examinations more flexibly.

Regarding the number of deaths, it was observed that during the study period the hospital had a total of 10 deaths, with the month with the highest number of deaths being May, followed by June and August 2022. It is known that the causes of deaths of hospitalized patients are directly associated with the hospital profile, specifically with the incidence of patients with chronic diseases and concomitantly of an advanced age group. The main cause of mortality was acute myocardial infarction with 4 deaths and subsequently, acute respiratory failure with 3 deaths, among which a prevalence was observed in the age group over 70 years old, mainly in men corresponding to 70%, while women aged 61 to 70 years old corresponded to 20% of deaths in this period, according to the Annual Management Report of the hospital under study.

The cardiovascular diseases stand out, reaching first place in relation to the causes of death in Brazil, in the SUS (unified health system) according to GODOY et al. (2007), such diseases in 2002 were the cause of death of more than 1.2 million hospitalizations, which significantly represents 10.3% of hospitalizations (GODOY, et al., 2007).

Injury / Patients	Up to 59 years	%	From 60 years old	%	Number	%
Diseases of the Genitourinary System						
ITU	13	8,70	26	16,15	39	
Pyelonephritis	2	1,24	2	1,24	4	2,48
DIP	2	0,62	0	0	2	1,24
IRC	1	0,62	0	0	1	0,62
Breast lump	0	0	1	0,62	1	0,62
Total					47	29,19
Diseases of the Respiratory System						
Pneumonia	6	3,72	19	11,79	25	15,51
EAP	0	0	2	1,24	2	1,24
Pleural effusion	0	0	1	0,62	1	
Total					28	17,38
Circulatory System Diseases						
Decompensated CHF	2	1,24	4	2,48	6	3,72
AIT	0	0	1	0,62	1	0,62
Stroke	0	0	5	3,1	5	3,1
Angina	0	0	2	1,24	2	1,24
High blood pressure	1	0,62	0	0	1	0,62
Phlebitis	1	0,62	0	0	1	0,62
refractory hypertension	1	0,62	0	0	1	0,62
DAOP	2	1,24	0	0	2	1,24
IAM	0	0	1	0,62	1	0,62
Grand total					20	12,41

Table 3: Distribution of patients within the group of Diseases of the Genitourinary System; Diseases of the Respiratory System and Diseases of the Circulatory System, according to the age parameter.

Source: RAG – Annual Management Report of the hospital under study. Caption: CHF: Congestive Heart Failure; TIA: Transient Ischemic Attacks; CVA: Cerebrovascular Accident; SAH: Systemic Arterial Hypertension; PAOD: Peripheral Arterial Obstructive Disease; AMI: Acute Myocardial Infarction.

In addition, according to WHO data, cardiovascular diseases were the cause of death in approximately 15 million people in 2015, corresponding to a percentage of 26.5% in relation to the total number of deaths in the world (RIBEIRO, et al., 2022). It is worth mentioning that in approximately 5% of hospitalizations it was not possible to obtain complete results for classification according to ICD. This fact can be explained according to the information system of the hospital analyzed, since it, during the data collection period, was not updated in the management reports, making it difficult to diagnose and include them in the study.

ANALYSIS OF THE HOSPITAL STANDARDIZATION SYSTEM DURING THE STUDY PERIOD: APRIL TO SEPTEMBER 2022

During the study period, the hospital pharmacy had a medication distribution system that was characterized by unit dose and collective distribution. However, a CFT had not been established, but the service had a GT (Working Group) made up of pharmacists who worked to adapt to proposed medical requests. This GT held regular meetings to establish and assess the hospital's needs, fundamentally related to the standardization of medications made available for hospital

and outpatient pharmacotherapy, based on the current REMUME and in accordance with RENAME. The meetings also discussed the needs of which medications must be in stock based on bibliographic surveys on studies of efficacy, safety and price (cost-benefit) of the medications to be incorporated. For selection, purchase, storage, stock management and all control of antimicrobials and germicides, the Hospital Infection Control Commission (CCIH) had been established in the hospital, according to Ordinance No. 2,616 of the Ministry of Health of 1998 (BRAZIL, 1998, BRAZIL, 2013).

A total of 341 medications were identified on the hospital list, which were classified according to the 1st level of the ATC as shown in Table 4. Among the group with the highest number of medications, the following stand out: N: Central Nervous System with 18.47% of medications, followed by General anti-infectives for systemic use with 16.71%, A: Digestive system and metabolism with 12.31% and C: Cardiovascular system with 12.02% of medications.

They were then classified based on the 2nd level of the ATC, which corresponds to the main therapeutic groups. In this, it is observed that the main group with the highest index of medications contained in the list was J01: Antibacterials for systemic use, corresponding to 46, C01: Cardiac therapy with 17, N05: Psycholeptics with 16, N01: Anesthetics with 15, S01: Ophthalmological products with 11, N06: Psychoanaleptics and N02: Analgesics with 10 medications.

Groups	Code: ATC/DDD	N	%
Digestive system and metabolism	A	42	12,31
Blood and hematopoietic organs	B	28	8,21
Cardiovascular system	C	41	12,02
Dermatological	D	24	7,03
Genitourinary system and sex hormones	G	12	3,51
Systemic hormonal preparations, excluding sex hormones	H	14	4,10
General anti-infectives for systemic use	J	57	16,71
Antineoplastics and immunomodulators	L	4	1,17
Musculoskeletal system	M	13	3,81
Central nervous system	N	63	18,47
Antiparasitics, insecticides and repellents	P	5	1,46
Respiratory system	R	17	4,98
Sense organs	S	11	3,22
Several	V	8	2,34
Others	*	2	0,58
Total		341	100

Table 4: Hospital medicines organized according to 1st level groups of the ATC/DDD system (main groups/main anatomical group), (WHO, 2022).

Source: Research data. (2022)

Furthermore, of the 341 total medications listed to make up the hospital's pharmaceutical stock, 38 (11.14%) were not included in the REMUME. This percentage can be considered positive, since the hospital does not have an effective medication standardization process. The 38 drugs mentioned above are classified as first and second line, corresponding to the treatment of problems related to the Central Nervous System with 3.22%, the Cardiovascular System with 2.93%, Blood and hematopoietic organs with 0.87%, the Digestive system and metabolism with 1.16%, General anti-infectives for systemic use 0.87% among others, according to Table 5.

The nature of the institution justifies the high quantity of antibiotics composing the therapeutic arsenal, since rates of high

demand for hospitalization were observed for diseases of the urinary tract such as UTIs and the respiratory system, especially pneumonia, of which it is seen according to protocols that the prioritized therapy for health recovery consists of the insertion of the use of antibiotics. (BRAZIL, 2017; PAIXÃO et al., 2022).

Thus, according to a study by Silva et al. (2014), the recommended medications for the treatment of UTIs are antibiotics, which must be incorporated according to the infectious agents, in which in most cases the agent responsible is *Escherichia coli* for the involvement of both sexes. Thus, the related antibiotics are described in Table 6.

Oral antibiotics		
Drug	Dose mg/kg/day	Number of doses/days
Sulfamethoxazole + Trimethoprim	40 + 80 mg	2
Cefadroxil	30 - 50 mg	2
Cephalexin	50 - 100 mg	4
Nalidixic Acid	60 mg	4
Amoxicillin + Clavulanate	40 mg	2
Parenteral antibiotics (EV or IM)		
Ceftriaxone	50 - 100 mg	1 a 2
Gentamicin	7,5 mg	3
Amikacin	15 mg	1 a 2

Table 6: Oral and parenteral antibiotic options for treating UTI

Source: Adapted from SILVA et al., 2014.

Relating the drugs listed above with those that make up REMUME, the only one that is not included in it is Nalidixic Acid, which has been included in the market since 1962 and its mechanism is related to the inhibition of DNA synthesis in Gram-positive bacteria, in the study carried out by Machado and collaborators 2019 in Jaraguá do Sul, it was shown that the antibiotic was the second most resistant drug to *E. coli* with 30.2%, behind only Ampicillin, thus justifying its

non-inclusion for treatment in cases of UTI, since there are more active drugs for such therapy as presented. Furthermore, some of the medications listed can also be used in therapies for diseases caused by gram-positive and gram-negative microorganisms, such as Ceftriaxone, including infections of the respiratory system, skin, bones and joints, and urinary tract infections, as analyzed (SOUZA et al., 2022).

This medication, which has different indications, becomes a standardization option for the composition of the hospital's pharmaceutical stock. Furthermore, as this is a hospital unit that offers services in addition to hospitalizations through medical clinics, elective surgery, urgency and emergency services require antibiotics for prophylaxis and analgesia, justifying the high number of ATB options. Central nervous system medications were highly prevalent on the unit's list, which is a warning to the public sector, as there is a frequency in records regarding adverse reactions and administration errors caused by medications belonging to this class, especially related to the population that is more susceptible (ASSUNÇÃO-COSTA et al., 2022; SOURCELES et al., 2009).

Considering that in the hospital environment, medications belonging to the CNS are used as a way of preventing epileptic and convulsive conditions, analgesia and are most often incorporated into polymedication, it is worth noting that in a study carried out by Fochat and collaborators (2023) it was demonstrated that medications belonging to the nervous system were also more prevalent, in addition to being the most administered to the elderly, with 85 of them using drugs belonging to the psycholeptic group, which drew attention to the irrational use of drugs belonging to this class. Medications belonging to the cardiovascular system class are increasingly used in hospitals. This may

Groups	Code: ATC/DDD	N	%
Central nervous system	N	11	3,22
Psychoanaleptics	N06	4	1,17
Psycholeptics	N05	3	0,87
Painkillers	N02	2	0,58
Anesthetics	N01	1	0,29
Antiepileptics	N03	1	0,29
Cardiovascular system	C	10	2,93
Agents acting on the Renin-Angiotensin system	C09	3	0,87
Calcium channel blockers	C08	2	0,58
Antihypertensives	C02	2	0,58
Cardiac therapy	C01	1	0,29
Peripheral vasodilators	C04	2	0,58
Blood and hematopoietic organs	B	3	0,87
Antihemorrhagic	B02	1	0,29
Antithrombotic agents	B01	1	0,29
Blood substitutes and infusion solutions	B05	1	0,29
Digestive system and metabolism	A	4	1,16
Vitamins	A11	1	0,29
Diabetes Medications	A10	1	0,29
Medications for acid-related disorders	A02	1	0,29
General anti-infectives for systemic use	J	3	0,87
Antibacterials for systemic use	J01	2	0,58
Antivirals for systemic use	J05	1	0,29
Musculoskeletal system	M	2	0,58
Anti-inflammatory and antirheumatic	M01	1	0,29
Muscle relaxants	M03	1	0,29
Dermatological	D	2	0,58
Antiseptics and disinfectants	D08	1	0,29
Preparations for the treatment of wounds and ulcers	D03	1	0,29
Genitourinary system and sex hormones	G	1	0,29
Urological	G04	1	0,29
Antiparasitics, insecticides and repellents	P	1	0,29
Anthelmintics	P02	1	0,29
Others	*	2	0,58

Table 5: Distribution of medicines not in compliance with REMUME according to 1st and 2nd levels of ATC/DDD (WHO, 2022).

Source: Research data (2022).

be related to the rates of chronic-degenerative diseases, which are identified as the main reason for hospitalization and which increase as the population's life expectancy increases. These medications, in turn, demand higher costs due to the long period of use, in addition to an adaptation of pharmaceutical services. Even so, this group of diseases stands out as the main causes of death in the country (RIBEIRO, 2020).

The number of 341 medications available for pharmacotherapy at the hospital under study can be considered excessive when analyzed in detail by subgroups, and may not represent a satisfactory coverage of therapeutic needs, which would consequently lead to disruption in meeting the institution's demand, occasionally causing dissatisfaction in the health service, due to a lack of basic medications, accumulation and waste in stock, making it necessary to implement medication standardization for the hospital in question.

PROPOSE AND ENCOURAGE A METHOD FOR STANDARDIZING MEDICATIONS IN THE HOSPITAL PHARMACY

As this is a sector that uses high budgets, it is essential that hospital pharmacies work with managers to develop methodologies for the use of materials and medications that aim at rationality and cost optimization. As mentioned, the hospital institution in the study is based on REMUME and a non-existent standardization process, with the flow of medication selection based on empirical data and occurring through emergency requests and requests from the medical profession.

Seeking to optimize and improve the quality of public services, it is extremely important that pharmacists seek to develop studies on the use of medications in hospitals, as well as to qualify the processes of medication selection and standardization, using epidemiological

indicators that demonstrate the health situation of the institution, since each hospital represents a particular case, with unique peculiarities, profiles and teams (BRAZIL, 2006).

Thus, in the case of public health management, where resources are limited and decisions are made at hierarchical levels, it is necessary to standardize medication in order to provide quality care for spontaneous and referenced demand, adjusted to the reality of the population. In this sense, the model to be proposed can be based on the following competencies (CFF, 2011; RAMIREZ, 2018)

- Firstly, form a standardization committee – the formation of a CFT is recommended, composed of a representative interprofessional health team;
- Then, based on the clinical epidemiological profile of care, the committee will conduct a qualified listening session with the clinical staff in order to optimize the quantity of medicines, reducing costs and ensuring the necessary and safe therapy for patients;
- Preparing the standardized list requires adopting the name, concentration and pharmaceutical form, mapping, grouping the medicines according to the classifications and codifications indicated by the Ministry of Health, in order to restrict the unnecessary stock of medicines.;
- Based on the list of standardized medications, prepare a manual that serves as a guide for consultation for the entire team of healthcare professionals in the institution, that is, that is available to each sector, including prescribing physicians, so that they use this list as a premise to make a prescription that guarantees greater patient safety;

- Finally, it is important to highlight that medications that are not on the standardized list must be requested using forms and with the approval of the CFT. In addition to encouraging continued education for the institution's healthcare team.

Based on this model and taking the care profile of this study as an instrument to characterize the institution's demand, the proposal to be standardized needs to advocate treatments that are better adapted to the elderly population, thus including drugs that are better administered to the patient, including less complex pharmaceutical forms, in order to reduce the levels of administration errors and also adverse reactions, improving the storage and transportation conditions of medications.

The main objectives of implementing a standardization process are to seek to optimize patient care, through the selection of medications, quality in therapy and the prescription of more reliable medications. The inclusion of therapeutic protocols for each pathology reduces the volume of medications that are directed to the same clinical condition, without compromising the pillars of efficacy and safety, optimizing the work of the team as a whole, simplifying the work routines of the pharmacy sector, as well as the activities of selection and acquisition, storage and distribution of medications (CFF, 2011).

CONCLUSIONS AND PERSPECTIVES

The survey of the hospital's main needs based on admissions by the medical clinic was highly relevant for characterizing the profile of diseases treated by the hospital unit, since it is heterogeneous and includes several specialties, which contributed to the analysis of the list of medications taking into consideration, the demand. This way, it was possible to evaluate the qualitative and quantitative characteristics of the medications included in the list presented. It is worth noting that the survey of this profile is necessary as an instrument in the process of standardizing medications in the hospital under study, which facilitates the process of pharmacological education among the unit's health professionals, thus generating critical reflection on their selection and rationalized use, increasing the quality of pharmacotherapy, and ensuring safety in the prescription and administration of drugs.

By analyzing the drug selection process in the present study, it was observed that although a standardization committee or a CFT was not formally established, the work that the WG develops represents a positive and fundamental role for hospital care, but it is still necessary to optimize the selection and standardization of medications to make up the institution's pharmaceutical stock. Thus, the proposed methodology for carrying out medication standardization seeks to ensure quality in medication management as a whole in order to contribute to public policies on Pharmaceutical Assistance by promoting actions that promote, protect and restore health, in addition to raising the level of care provided to the population and, finally, promoting the rational use of medications based on scientific evidence.

The high percentage of adult and elderly patients seen in the CM may be directly related to organizational issues at the Primary

Health Care levels, since when this is not well structured it can overload tertiary care, directing the management of services. Given important elements such as the service profile, the incentive to create, implement and implement a Pharmacy and Therapeutics Committee (CFT) in the Hospital under study

favors the schematization of the proposal for the medication standardization process, in addition to inducing an interprofessional relationship between the health actors of this institution, ensuring the quality of the service delivered to the population, improving their quality of life.

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