

# Description of pharmacy service hospital of a Brazilian teaching hospital

## Abstract

In recent years there has been a growth in clinical activities in Hospital Pharmacy, and for the implementation of Clinical Pharmacy services to be effective it is necessary to know the profile of the hospital and its pharmacy service. The objective was to describe the profile of the Hospital Pharmacy Service of a Teaching Hospital. Exploratory descriptive study. The Hospital Pharmacy Service Evaluation questionnaire of the National Health Surveillance Agency was adapted and used as a roadmap for data collection, and information was extracted from the National Register of Health Establishments. Data were grouped by the hospital classification description and the Hospital Pharmacy Service. It was verified that the number of pharmacists is below that recommended for hospital pharmacy activities, making it even more difficult to implement Clinical Pharmacy services that should consider the hospital profile, flow and complexity of the patients. The hospital pharmacist must obtain the necessary training, besides being able to count on physical, organizational structure, and exclusive availability, compatible for the development of clinical services.

**Keywords:** hospital pharmacy service, pharmacists, teaching hospitals, patients, health care

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## Introduction

Hospitals are clinical, social and scientific organizations, whose main purpose is to provide health care, preventive or curative, individual or collective, and serve as training centers for human resources and research. Hospital care, including pharmaceuticals, is modulated by the activities performed and by the level of complexity of the services offered.<sup>1</sup> The Brazilian Pharmacy Hospitalar (FH) is experiencing a moment of progress in its regulatory framework, expansion of pharmaceutical services and increasingly active with the multiprofessional team, producing positive results on the safety and quality of health care of patients.<sup>2</sup> FH is defined as a technical, administrative, care and clinical unit, where activities related to pharmaceutical care are promoted, it must be directed exclusively by a pharmaceutical professional, in addition, it is related organizationally and functionally with the other administrative and care units to the patient in the hospitals.<sup>3</sup>

Clinical Pharmacy activities may be offered in the clinical setting of FH, which is defined as a specialty of the pharmaceutical area related to the services and clinical activities of the pharmacist with the objective of promoting the rational use of medicines through the interaction between pharmacist and patient, providing better monitoring, through the optimization of pharmacotherapy, prevention, identification and elucidation of problems related to medications.<sup>4</sup> In order to do this, it should count on pharmacists and auxiliaries, sufficient for the adequate development of its activities, considering the complexity of the hospital, the services offered, the level of automation, the opening hours, safety for the employee and patient. The technical responsibility of FH is attributed to the pharmacist, enrolled in the Regional Pharmacy Council of its jurisdiction, under the terms of the current legislation. Hospitals should promote continuing education actions for hospital pharmacists, according to the activities developed, stimulating the strengthening of FH's human resources, focusing on the adoption of safe practices in health care and care.<sup>3</sup>

One of the most important activities of FH is to act in the reduction of errors related to medicines. Medication error is defined as an avoidable, actual or potential event, leading to improper use of medications, and risk of injury to the patient. There are many factors that influence the occurrence of medication errors in hospitals, and may be related to professional practice, medication, or the patient. Those related to medications include problems of prescription, labeling, preparation, dispensing, dispensing and administration. The correct choice of the drug distribution system in hospitals, as well as the control of this process, provides a better quality to the drug therapy, ensuring compliance with the prescription, pharmacoeconomics and integration of the pharmacist to the multiprofessional health team.<sup>5</sup> It is observed the scarcity of studies on pharmaceutical services in the hospital scope, requiring greater scientific production on the subject, as well as the training of professionals to act in the execution of these researches. This can contribute to the evaluation and improvement of actions, providing therapeutic benefits to the patient, pharmacoeconomics to the health system and greater professional satisfaction to pharmacists.<sup>6</sup> Based on the above; it was aimed to describe the profile of the Hospital Pharmacy Service present in a Teaching Hospital.

## Methodology

It is an exploratory descriptive study to characterize the FH service profile of a Teaching Hospital of the Northwest Paulista Region. The National Health Surveillance Agency's FH Service Assessment (ANVISA) script was adapted and used in data collection.<sup>7</sup> Information extracted from the National Registry of Health Establishments<sup>8</sup> was also extracted. The study was initiated only after approvals from the Coordination of the Pharmacy Service, the Hospital Board and the Research Ethics Committee (CEP) of the Union of the Great Lakes College (Unilago), according to opinion number 121/15, aspects recommended by Resolution 466/2012 of the National Health Council regarding the confidentiality of data and the dissemination of results

for scientific purposes only. There was exemption from the Free and Informed Consent Term by the CEP, justified by the collection of exclusive data about FH; and the non-use of medical records, interviews or data of participants. Prior authorization was also granted from the hospital's board of directors to carry out the research.

The analysis was performed through descriptive statistics aiming to characterize the profile of FH. The software Excel/2010 was used for the elaboration of the database, descriptive statistics and preparation of the tables.

## Results

Based on the FH Service Assessment<sup>7</sup> and information extracted from the National Registry of Health Establishments,<sup>8</sup> the data obtained were grouped into tables. Below describes the classification of the Teaching Hospital, then illustrates the classification of the FH Service, and in sequence, demonstrates the activities developed in satellite pharmacies.

## Discussion

In the present research it was possible to describe the FH service of the teaching hospital. According to the Brazilian Society of FH, which established the minimum standards for FH, one pharmacist is recommended for the basic activities of dispensing hospitalized patients and for supply logistics, for each 50 beds.<sup>9</sup> However, it was verified that the Teaching Hospital of the present study has a number of pharmacists below that recommended for FH activities in satellite pharmacies, making it even more difficult to implement Clinical Pharmacy services. Based on clinical activities, the pharmacist contributes to improve pharmacotherapeutic results through follow-up, education and prevention programs, and evidence-based clinical protocols.<sup>6</sup> Resolution No. 585 of August 29, 2013 of the Federal Council of Pharmacy,<sup>10</sup> regulates the clinical attributions of the pharmacist regarding individual or collective health care related to health communication and education, and those related to practice management, production and application of knowledge. However, the success of the attributions described in this resolution is subject to the effectiveness of the actions proposed and the recognition by society of the role of the pharmacist in the context of health.

The aging of the population, the change in disease profiles, changes in the pharmaceutical area, generated the need for the creation of new care models and had an impact on the different sectors of the pharmacy, and in the area of FH there was a migration of a model which focused on the products for a patient-focused service model.<sup>11</sup> To seek the development and the involvement of the employees, in the individual and team aspect is paramount for the success of the FH, expressed by the improvement of results reverberated to the patient and the institution and the satisfaction of internal and external clients. The FH service manager needs to be prepared for new and constant challenges, through the necessary attitudes to promote paradigm shifts.<sup>9</sup> The evolution of the pharmaceutical services stimulates the growth of the scientific production in FH, coming from researches and other technical-scientific works realized in different programs of postgraduate, graduation and in the health services. Increasingly integrated with multidisciplinary teams, the pharmacist has contributed to the improvement of health care, becoming essential to the provision of patient care in hospitals and other health services.<sup>12</sup>

Hospital Pharmaceutical Services are an important structure of healthcare provided in a hospital environment. The hospital pharmacist is responsible for the management, production, storage, distribution

and control of medicines. It also performs important functions in areas such as Clinical Trials, Clinical Pharmacy, Pharmacokinetics, Pharmacovigilance, Pharmaceutical Care, management, teaching, research and participation in Technical Commissions such as Pharmacy and Therapeutics, Hospital Injury, Hygiene and Cleaning and others (3.9 -10). The FH service is responsible for several impact activities in the assistance. The multiple needs of patients require hospital pharmacies to perform a series of organized activities. The functions of the hospital pharmacist require commitment to the results of their clinical services and not only linked to the supply of medicines. There are difficulties presented by Brazilian hospital pharmacies, specifically regarding the results of structure, process and human resources.<sup>1</sup>

Thus, FH must comply with its objectives such as guaranteeing the supply, dispensing, access, control, traceability and rational use of medicines and other health technologies, ensuring the development of clinical and assistance practices that allow monitoring the use of drugs and other health technologies, pharmacoeconomics, and the improvement of health team practices.<sup>13,14</sup> Among the activities developed by FH is the management of technologies, manipulation of master and officinal formulas, parenteral and antineoplastic nutrition, promotion of rational use and guarantee of access to medicines by patients, and mainly distribution and dispensing of medicines and medical-hospital materials.<sup>3</sup>

Distribution is one of FH's most important pharmaceutical activities, enabling the efficient, safe, organized and rational use of medicines through stock control and pharmacoeconomics. The choice of the type of drug distribution system should guarantee the quality of the patient's health care, reducing possible errors, provided that it is implanted according to the physical and administrative structure of the hospital unit.<sup>14,15</sup> In pharmaceutical care in the hospital, the distribution comprises an important activity that allows the safe, efficient, rational and organized use of medicines and medical-hospital materials, through inventory control, pharmacoeconomics, and employing a drug distribution system, essential to ensure the quality of patient health care delivery. The choice of the type of distribution system depends on the hospital profile and available resources. In the present study, the distribution system adopted by the hospital, according to the profile and available resources, is the individualized dose system, where medicines and materials are dispensed in individual packages to each patient in three shifts, from one and the fractionation of solid dosage forms is performed. This type of system has some disadvantages, such as the risk of errors due to exchange, error of preparation and error of administration by nursing, as well as an increase in nursing workload with activities related to separation and preparation of medications.<sup>14</sup>

It is necessary that a system of hospital distribution of drugs and materials be established based on a medical prescription, previously analyzed by a pharmacist. Among these, the unit dose is considered the most rational and safe system for the patient, minimizing errors, besides providing greater post-implantation hospital savings and reducing the nursing time in the preparation of medications, since all pharmaceutical forms are dispensed by the pharmacy ready for use. However, it presents as disadvantages the high cost for implantation by the investment in infrastructure and human resources, being adopted by few hospitals.<sup>15</sup> The activities developed by clinical pharmacists play a key role in patient safety. Among these activities, the revision of medical prescriptions is an extremely important item, since it allows the identification, resolution and prevention of drug-related problems and negative outcomes associated with pharmacotherapy.<sup>16</sup> In addition, the complexity of the parenteral drug delivery process,

involving multiple steps, requires a greater need for adjustments and monitoring over the administration period, increasing the risk of errors. In order to increase safety in the administration of drugs, especially of parenteral drugs, it is necessary to incorporate information technology applied to health through bar code and computerized prescription.<sup>17</sup>

Since 2010, the hospital of this study has used a computerized prescription and barcode system for medicines and materials. The doctor prescribes using his/her username and password, and at the end of the prescription, it is sent via the system to the satellite pharmacy, where an analysis is promoted by the pharmacist, and later the medicines are separated by the technicians, and the inventory control is carried out by means of a bar code. The advantages of the computerized system are the readability of the data and the speed with which the prescription is made and released. On the other hand, it is worth noting that despite the higher quality, the computerized bar code and prescription system is not error-free, so it does not rule out the performance of the pharmacist in the analysis of prescriptions and inventory control.<sup>18</sup>

However, the evaluation of an FH is a complex and difficult practice because it involves structures and services variable according to the characteristics of the hospital, the pharmacy itself, according to its minimum standards and its essential functions: management, infrastructure development, preparation, distribution, dispensing and control of medicines and related substances, information on medicines, promotion of rational use of medicines, teaching and research.<sup>19</sup> It is necessary to construct criteria and indicators for the evaluation of FH, and to produce data regarding the quality of its services, an evolution of the forms of quality analysis for FH, due to the increase of research, is observed. This topic still lacks more comprehensive studies with critical and realistic analyzes in the hospital context.<sup>15</sup>

## Conclusions

The classification of the hospital, the FH service and the activities developed identifies the predominance of administrative activities, and the difficulties of implementing Clinical Pharmacy activities in the study hospital, mainly related to the reduced number of pharmacists active in pharmacies satellites.

The implementation of Clinical Pharmacy services should consider the hospital profile, flow and level of complexity of the patients, with the objective of improving pharmacotherapeutic results and ensuring patient safety. In addition, the hospital pharmacist must obtain necessary training, besides being able to count on physical structure, organizational, and exclusive availability, compatible for the development of clinical services.

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## Conflicts of interest

Author declares that there are no conflicts of interest.

## References

1. Silva MJS, Magarinos Torres R, Oliveira MA. Evaluation of the pharmacy services of the state hospitals of Rio de Janeiro. *Brazil Cien Saude Colet*. 2013;18(12):3605–3620.
2. Neri EDR. Hospital Pharmacy, Health Technology Management and Quality of Care. *R Bras Farm Hosp Serv Health*. 2011;2(3):4.
3. Brazil. Ministry of Health. Ordinance No. 4.283, of December 30, 2010. Approves the guidelines and strategies for the organization, strengthening and improvement of the actions and services of pharmacy in the scope of the hospitals. *Official Journal of the Union*. 2010;1.
4. Pereira LRL, Freitas O. The evolution of Pharmaceutical Care and the perspective for Brazil. *Rev Bras Cienc Farm*. 2008;44(4):601–612.
5. Martins ES, Pereira FP, Silva GB. Unitarization of doses in Hospital Pharmacy. *Infarma*. 2012;24(4-6):9–16.
6. Ventura C, Sousa IF. Pharmacy Services within the scope of Hospital Pharmacy: a literature review. *Salus Institute*. 2011;1(1):1–15.
7. Brazil. Anvisa. National Health Surveillance Agency. *Quality evaluation of a Hospital Pharmacy Service*. 2015.
8. Brazil. Ministry of Health. DATASUS. *National Register of Health Establishments*. 2015.
9. SBRAFH. *Brazilian Society of Hospital Pharmacy. Minimum Standards for Hospital Pharmacy and Health Services Goiania*. 2015:20.
10. CFF. *Federal Council of Pharmacy. Resolution nº585 of August 29, 2013. Regulates the clinical attributions of the pharmacist and gives other measures*. 2015.
11. Bisson MP. A vision about the change of focus of the Brazilian Hospital Pharmacy. *R Bras Farm Hosp Serv Health*. 2012;3(3):4–5.
12. Capucho HC. Scientific Production in Hospital Pharmacy: moving towards excellence. *R Bras Farm Hosp Serv Health*. 2010;1(1):4.
13. Magarinos Torres R, Osorio de Castro CGS, Pepe VLE. Activities of the Brazilian hospital pharmacy for hospitalized patients: a review of the literature. *Cienc Collective health*. 2007;12(4):973–984.
14. Jara MC. Unitization of dosage and patient safety: responsibility of the hospital pharmacy or the pharmaceutical industry? *Rev Bras Farm Hosp Health Serv*. 2012;3(3):33–37.
15. Magarinos Torres R, Pepe VLE, Osorio-de-Castro CGS. Aspects of the Evaluation of Services in the Brazilian Hospital Pharmacy. *Rev Bras Farm*. 2011;92(2):55–59.
16. Kings WCT, Scopel CT, Run CJ. Analysis of the interventions of clinical pharmacists in a tertiary teaching hospital in Brazil. *Einstein (São Paulo)*. 2013;11(2):190–196.
17. Silva AEC, Reis AMM, Miasso AI. Adverse drug events in a sentinel hospital in the State of Goiás. *Brazil Rev Latino-Am. Nursing*. 2011;19(2):1–9.
18. Teixeira TCA, Cassiani SHB. Root cause analysis of falls and hospital medication errors. *Acta paul Sick*. 2014;27(2):100–107.
19. Martins BPR, Vechiato C, Vieira DA. Applicability of two instruments for evaluating services in hospital pharmacy. *Electronic Journal of Pharmacy*. 2008;5(1):83–94.