

MATERIAIS E MEDICAMENTOS COM VALIDADE EXPIRADA, GERENCIAMENTO E DESAFIOS
MATERIALS AND DRUGS WITH EXPIRED DATE, MANAGEMENT AND CHALLENGES
MATERIALES Y MEDICAMENTOS CON VIGENCIA, GESTIÓN Y RETOS

Karla Rona da Silva¹, Elci de Souza Santos², Shirlei Moreira da Costa Faria³, Marina Lanari Fernandes⁴, Mery Natali Silva Abreu⁵

RESUMO

Objetivo: conhecer o gerenciamento de resíduos de serviços de saúde oriundos de materiais hospitalares e medicamentos descartados devido à data de validade expirada, em um hospital universitário. **Método:** trata-se de um estudo quantitativo, descritivo, transversal, a ser realizado em um hospital universitário. Coletar-se-ão os dados por meio de consulta ao banco de dados e formulários restritos do cenário de estudo. Investigar-se-ão as seguintes variáveis: descrição do resíduo; período de destinação final; custo do produto e da destinação final; quantidade e local de geração. Organizar-se-ão os dados em planilhas de *Excel*, analisando-os pelo *software Statistical Package for the Social Sciences*, versão 19. Realizar-se-á o estudo após a aprovação dos Comitês de Ética responsáveis. **Resultados esperados:** pretendem-se obter informações que subsidiem a intervenção por meio de planejamento, monitoramento e avaliação logística de todos os processos da gestão de resíduos de serviços de saúde.

Descritores: Resíduos de Serviços de Saúde; Resíduos; Serviços de Saúde; Almoxarifado Central Hospitalar; Estabilidade de Medicamentos; Equipamentos e Provisões Hospitalares.

ABSTRACT

Objective: to learn about the management of health care waste from hospital materials and drugs discarded due to the expiration date, at a university hospital. **Method:** this is a quantitative, descriptive, cross-sectional study to be carried out in a university hospital. Data will be collected by consulting the database and restricted forms of the study scenario. The following variables will be investigated: description of the residue; period of final destination; cost of the product and final destination; quantity and place of generation. The data will be organized in Excel spreadsheets, analyzing them by Statistical Package for the Social Sciences, version 19. The study will be carried out after the approval of the responsible Ethics Committees. **Expected results:** the aim is to obtain information that subsidizes the intervention through planning, monitoring and logistic evaluation of all the processes of health services waste management.

Descriptors: Health Services Waste; Health Services; Central Hospital Warehouse; Drug Stability; Hospital Equipment and Supplies.

RESUMEN

Objetivo: conocer la gestión de los residuos del servicio de salud a partir de materiales hospitalarios y medicamentos descartados por caducidad, en un hospital universitario. **Método:** se trata de un estudio cuantitativo, descriptivo, transversal, para ser realizado en un hospital universitario. Los datos se recogerán consultando la base de datos y formularios restringidos del escenario de estudio. Se investigarán las siguientes variables: descripción del residuo; período de destino final; costo del producto y destino final; cantidad y lugar de generación. Los datos se organizarán en hojas de cálculo *Excel*, analizados mediante el *software Statistical Package for the Social Sciences*, versión 19. El estudio se llevará a cabo tras la aprobación de los Comités de Ética responsables. **Resultados esperados:** pretendemos obtener informaciones que sustenten la intervención mediante la planificación, monitoreo y evaluación logística de todos los procesos de gestión de residuos de los servicios de salud.

Descriptores: Residuos Sanitarios; Resíduos; Servicios de Salud; Central de Suministros em Hospital; Estabilidade de Medicamentos; Equipos y Suministros de Hospitalares.

¹Federal University of Minas Gerais/UFMG. Belo Horizonte (MG), Brazil.

¹ <https://orcid.org/0000-0003-0495-789X> ² <https://orcid.org/0000-0001-8815-2778>

³ <https://orcid.org/0000-0002-7901-4098> ⁴ <https://orcid.org/0000-0002-9942-6903>

⁵ <https://orcid.org/0000-0002-6691-3537>

*Article extracted from the Master's dissertation research project<< Provisional title: Management of health care waste from medical materials and drugs with expired date, in a university hospital from 2015 to 2019>>. Federal University of Minas Gerais /UFMG), 2020.

How to cite this article
Silva KR, Santos ES, Faria SMC, Fernandes ML, Abreu MNS. Materials and drugs with expired date, management and challenges. J Nurs UFPE on line. 2021;15:e245045 DOI: <https://doi.org/10.5205/1981-8963.2021.245045>

INTRODUCTION

It is known, nowadays, with the advent of the demographic and epidemiological profile change of the Brazilian population, that hospital institutions have been living daily with the increase of demand in hospitalizations in medium and high complexity. This factor is attributed to the increase in the incidence of chronic non-communicable diseases and to various external causes, requiring greater interventions through procedures, pharmacological investment and hospital materials to improve the user's clinical condition.¹⁻²

In this sense, it is inferred that there is a concern of managers with hospital materials and drugs (MAT/DRU) with expired validity, in view of the importance of planning for the acquisition and monitoring regarding the use and final destination of these products. It is also mentioned that the

destination of these MAT/DRU with expired validity has an impact on the allocation and use of financial resources, due to the high cost of their final destination, once they become Health Services Waste (HSW).³⁻⁵

The management of HSW is constituted in a set of management procedures planned and implemented from scientific and technical, normative and legal bases. The objective is to minimize the production, the quantity of waste, as well as to provide its safe forwarding and, consequently, contribute to the protection of workers, the preservation of public health, natural resources and the environment.⁵⁻⁶

The MAT/DRU consist of products for use in health treatment which, according to the purpose and use of the material, may be non-invasive, invasive, active and special, according to criteria recommended by the National Health Surveillance Agency (ANVISA), being the manager's responsibility the Good Storage Practice (GSP), good distribution practices, besides the control, training, codification, safekeeping and registering of these in physical or electronic format.⁷⁻⁸

The drugs are produced in order to avoid the expansion of the pathology, to cure, to be a palliative during the suffering in terminology and for the improvement of medical diagnoses. It is added, however, that they can also be configured as pharmaceutical input or related product. The standardization of the availability of these materials in the institution should be taken into account, having as one of the criteria the expiration date and the complexity of intersectoral actions.⁹

It is important to consider, if there are hospital MAT/DRU losses due to the expiration date, that at some point in the process the structures of acquisition, stock, availability and use by professionals of these resources are not well established. It is understood that it is up to the manager to define new procedures, routines and methods. The standardization of Business Process Management (BPM) has the potential to allow the manager to evaluate, analyze and study the various methods available, identifying, explaining and justifying the limitations, especially the implications and possible results of their uses.⁸

This study is relevant, based on these reflections, because there is no consolidated information on quantification, classification, generating unit and intervention strategies on the target theme. It is noteworthy that products, when managed in a non-compliant manner, become waste, burdening the institution not only with the demand for new purchases, but also with the cost of final destination.

It is expected, from the organizational point of view, that the data collected will provide inputs for the planning of necessary actions in order to develop an intersectoral communication that will contribute to the strengthening of warehouse management and organization of purchasing

processes in order to optimize the distribution of drugs and medical hospital materials, preventing such products from becoming HSW.

This study aims to answer the following guiding question: "How has the management of HSW from MAT/DRU discarded due to the expiration date in a university hospital from 2015 to 2019 occurred?".

OBJECTIVE

To learn about the management of health care waste from hospital materials and drugs discarded due to the expiration date, at a university hospital.

METHOD

This is a quantitative, descriptive, cross-sectional study that will be carried out at a university hospital in the State of Minas Gerais.

Research will be carried out in a health service integrated to the Unified Health System (UHS), which is under the administration of a public company, whose management is federal, with 24-hour care. It is informed that it is a reference in transplants, oncologic treatments and chemotherapy, maternity and high risk nursery, high cost pacemakers, cardiac surgery, among others. The average monthly production is presented as follows: 4500 emergency consultations; 1500 hospitalizations; 36 thousand outpatient consultations; 160 thousand laboratorial exams; 1600 surgeries and 200 births.

It is explained that it is a reference hospital teaching unit in high cardiovascular complexity, high complexity in neurology and neurosurgery, which offers to SUS users outpatient care in the levels of basic, medium and high complexity and medium and high complexity hospital care.¹⁰

For data collection, spreadsheets will be built in Microsoft Office Excel 2010 in order to register the HSW: MAT/DRU generated in the last five years (2015-2019), through consultation in a restricted database of the institution, and documentary analysis of the available forms. This period was chosen due to the fact that the institutional records have been reliably executed in the last five years as a result of internal process improvements. The following variables will be investigated: description of the residue; period of final destination; cost of the product and final destination; discarded quantity and place of generation. In order to calculate the cost with the acquisition and final destination environmentally adequate of these MAT/DRU, only the year 2019 will be considered, which presents updated data on this variable, because, in that year, the registration became mandatory.

The descriptive analysis of the data will be performed through the Statistical Package for the Social Sciences (SPSS), version 19, with calculation of absolute and relative frequencies, measures of central tendency and variability and construction of graphs.

This study was submitted to the respective Research Ethics Committees under CAAE nº 27528919.1.0000.5149.

EXPECTED RESULTS

It is expected to contribute to decision making aiming at better planning, monitoring and logistic evaluation of all processes, in an intersectoral and multidisciplinary way, in order to avoid and/or decrease HSW coming from MAT/DRUs that have evolved to the final destination due to the expiration date, without previous use.

REFERENCES

1. Cortez ACL, Silva CRL, Silva RCL, Dantas EHM. General aspects about the demographic and epidemiological transition of the Brazilian population. *Enferm Bras* [Internet]. 2019 [cited 2019 Aug 10]; 18(5):700-9. Available From: <https://portalatlanticaeditora.com.br/index.php/enfermagembrasil/article/view/2785/pdf>
2. Chudasama R, Rangoonwala M, Sheth A, Misra SKC, Kadri AM, Patel UV. Biomedical waste management: a study of knowledge, attitude and practice among health care personnel at tertiary care hospital in Rajkot. *J Res Med Dental Sci* [Internet]. 2013 July/Sept [cited 2019 Aug 10]; 1(1):17-22. Available from: https://www.researchgate.net/publication/259335628_Biomedical_Waste_Management_a_study_of_knowledge_attitude_and_practice_among_health_care_personnel_at_tertiary_care_hospital_in_Rajkot
3. Hariz HA, Dönmez CÇ, Sennaroglu B. Siting of a central healthcare waste incinerator using GIS-based multi-criteria decision analysis. *J Clean Product*. 2017 Nov; 166:1031-1042. DOI: 10.1016/j.jclepro.2017.08.091
4. Zajac MAL, Fernandes RO, David CJ, Aquino S. Logística reversa de resíduos da Classe D em ambiente hospitalar: monitoramento e avaliação da reciclagem no Hospital Infantil Cândido Fontoura. *Rev Gestão Ambiental e Sustentabilidade* [Internet]. 2016 Jan/Apr [cited 2019 Aug 10]; 5(1):78 -93. Available from: <https://dialnet.unirioja.es/servlet/articulo?codigo=5454553>
5. Urioste A, Zajac MAL, Aquino S, Ribeiro AP. Reverse logistics of surgical explant in a philanthropic hospital: implementation of a new ecoefficient model of management hospital waste. *Rev Gest Sist Saúd* [Internet]. 2018 Sept/Dec [cited 2019 Aug 10]; 7(3):257-73. Available from: <http://www.revistargss.org.br/ojs/index.php/rgss/article/view/415/240>

6. Makhura RR, Matlala SF, Kekana MP. Medical waste disposal at a hospital in Mpumalanga Province, South Africa: Implications for training of healthcare professionals. S Afr Med J. 106(11): 1096-102. DOI: 10.7196/SAMJ.2016.v106i11.10689
7. Zimmerman K. Microwave as an emerging technology for the treatment of biohazardous waste: A mini-review. Waste Manag Res. 2017 May; 35(5):471-9. DOI: 10.1177/0734242X1668438
8. Ministério da Saúde (BR), Agência Nacional de Vigilância Sanitária. Resolução da Diretoria Colegiada nº 222 de 28 de março de 2018. Regulamenta as Boas Práticas de Gerenciamento dos Resíduos de Serviços de Saúde e dá outras providências [Internet]. Brasília: Ministério da Saúde; 2018 [cited 2019 Aug 10]. Available from: http://portal.anvisa.gov.br/documents/10181/3427425/RDC_222_2018_.pdf/c5d3081d-b331-4626-8448-c9aa426ec410
9. Lei nº 5.991, de 17 de dezembro de 1973(BR). Dispõe sobre o Controle Sanitário do Comércio de Drogas, Medicamentos, Insumos Farmacêuticos e Correlatos, e dá outras providências. Diário Oficial da União [Internet]. 1973 Dec [cited 2019 Dec 17]. Available from: http://www.planalto.gov.br/ccivil_03/leis/l5991.htm
10. Ministério da Saúde (BR), Secretaria de Atenção à Saúde, Cadastro Nacional de Estabelecimento de Saúde. Institucional. Brasília: Ministério da Saúde; 2019 [cited 2019 Dec 28]. Available from: <http://cnes.datasus.gov.br/>

Correspondence

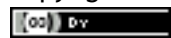
Karla Rona da Silva

Email: karlarona0801@gmail.com

Submission: 17/04/2020

Accepted: 19/01/2021

Copyright© 2021 Journal of Nursing UFPE on line.



This is an open access article distributed under the CC BY 4.0 Assignment [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by/4.0/), which allows others to distribute, remix, adapt and create from their work, even for commercial purposes, as long as they give it due credit for the original creation. It is recommended to maximize the dissemination and use of the licensed materials.