

Implementation of the Reverse Drug Collection Point in a Higher Education Institution of the Federal District

Implantação do Ponto de Coleta Reversa de Medicamentos em uma Instituição de Educação Superior do Distrito Federal

Michelle Couto Fernandes¹, Patrícia Francisca Pereira de Sales¹, Rossana Soares de Almeida², Alice da Cunha Morales Álvares²,
Eloísa Elena Cangiani², Lunalva Aurélio Pedroso Sallet²

How to Cite: Fernandes MC, Sales PFP, Almeida RS, Álvares ACM, Cangiani EE, Sallet LAP. Implementation of the Reverse Drug Collection Point in a Higher Education Institution of the Federal District. REVISA. 2019; 8(4): 505-11. Doi: <https://doi.org/10.36239/revisa.v8.n4.p505a511>

REVISA

1. Centro Universitário Planalto do Distrito Federal. Pharmacy Department. Brasília, Federal District, Brazil.

2. Centro Universitário Planalto do Distrito Federal. Pharmacy Department. Brasília, Federal District, Brazil.

Received: 10/07/2019
Accepted: 09/09/2019

RESUMO

Objetivo: proporcionar à comunidade acadêmica e social as práticas corretas de armazenamento e descarte dos medicamentos vencidos, em desuso e/ou inapropriados na instituição de ensino superior no DF. **Método:** A coleta dos medicamentos ocorreu no período de um ano, entre 2018 e 2019. Foi realizada a abertura da caixa de coleta permanente na Instituição de Educação Superior e a contagem manual de todos os medicamentos descartados. Os medicamentos foram relacionados em uma planilha de acordo com a classificação de bioequivalência, vias de administração, formas farmacêuticas, validade, preparação e classe terapêutica. **Resultados:** Desta forma, o ponto ativo fixo de coleta de medicamentos descartados na Instituição de Educação Superior proporciona um grande impacto social e ambiental, colaborando tanto com orientações na sociedade quanto promovendo uma ação permanente de auxílio aos órgãos governamentais a promoverem ações de correto destinação de medicações que tenham sido descartados. No período de 1 (um) ano, de um total de 922 unidades, sendo 84 medicamentos distintos, a predominância foi de medicamentos similares. Dentre as vias de administração, os medicamentos administrados via oral foram os mais descartados. Além disso, observa-se que esse ponto foi instalado há 1 ano, ou seja, em agosto de 2018, e foram contabilizados medicamentos desde 2012, ou seja, a população tem o hábito em armazenar esses medicamentos mesmo vencidos em domicílio. **Conclusão:** Constatou-se a necessidade de melhor esclarecimento sobre o assunto através de campanhas de incentivo e orientação, quanto ao destino adequado para resíduos de medicamentos e promoção ao uso racional de medicamentos, a fim de conscientizar a sociedade a utilização moderada dos medicamentos e a implementação de pontos de coleta acessíveis à população. **Descritores:** Farmácia; Educação Superior; Medicamentos.

ABSTRACT

Objective: To provide the academic and social community with the correct storage and disposal practices for expired, disused and/or inappropriate medicines in the higher education institution in the Federal District. **Method:** The collection of medicines took place within one year, between 2018 and 2019. The permanent collection box was opened at the Higher Education Institution and the manual counting of all discarded medicines. The drugs were listed in a spreadsheet according to bioequivalence classification, routes of administration, pharmaceutical forms, validity, preparation and therapeutic class. **Results:** Thus, the fixed active point of collection of discarded medicines in the Higher Education Institution provides a great social and environmental impact, collaborating with orientations in the society as well as promoting a permanent action of assistance to the government agencies to promote actions of correct destination of medications that have been discarded. In the period of 1 (one) year, out of a total of 922 units, being 84 different drugs, the predominance was similar drugs. Among the routes of administration, the drugs administered orally were the most discarded. In addition, it is observed that this point was installed 1 year ago, that is, in August 2018, and medicines have been counted since 2012, that is, the population has the habit of storing these medicines even at home. **Conclusion:** There was a need for better clarification on the subject through incentive and orientation campaigns, as to the appropriate destination for drug residues and promotion of the rational use of medicines, in order to make society aware of the moderate use of medicines and implementation of collection points accessible to the population. **Descriptors:** Pharmacy; College education; Medicines.

ORIGINAL

Introduction

Incorrect disposal of medicines is a recurrent practice of the population that presents risks to public health. The main ways of disregarding medicines are common waste and sewage networks. Most of the population (86%) discards medicines no longer used and / or expired in household waste, in the sink or in toilets and the waste storage is improperly performed.¹ Health Surveillance has regulated RDC No. 222/20182 which dictates the good practices of Health Services Waste Management (GRSS). It establishes the final route of discarded medicines that must be landfilled with hazardous waste without clarifying the collection and home disposal of these medicines for human and / or veterinary use.

The proper practice of medication disposal can be managed through health education to society. The orientation to the population about the disposal of medicines to reduce the environmental impact is still scarce. Collection takes place in isolation by establishments that make collection points accessible to the population. RDC No. 222/20182 emphasizes the obligation of an active point for the collection of disused and / or expired medicines per 30,000 inhabitants. This point must be identified and transportation to the appropriate treatment site is the responsibility of the pharmaceutical industries.

In this sense, it is necessary to implement an active collection point in the Higher Education Institution considering this Institution's commitment to public policies and health education. The collection point aims to provide the academic and social community with the correct storage and disposal practices for expired, disused and / or inappropriate medicines.

Method

The collection of the drugs took place within one year, from August 2018 to August 2019. The collection box was opened and the manual counting of all discarded medicines was performed. The drugs were listed in a spreadsheet according to bioequivalence classification, routes of administration, pharmaceutical forms, validity, preparation and therapeutic class.

Results and Discussion

The permanent disposal site of medicines and the control of the socio-environmental impact of the Higher Education Institution meets the terms of the correct disposal of drug residues. In Brazil, it is regulated by the Ministry of Health and the Ministry of Environment that the authors involved in activities that generate waste of this nature give the appropriate final disposal.³

Disposal of drugs is warranted in dispensing drugs in excess of the exact amount for patient treatment, stopping or changing treatment, randomly distributing free samples, and improperly managing drug stocks by companies and health services.² The final disposal of medicines is a relevant public health issue due to the different pharmacological properties of medicines, which will inevitably become waste and can no longer be used.³ Most of the population usually accumulates drugs from incomplete treatments in their homes because

they have been used only until symptoms subside, or even as a result of acquiring more than is needed or prescribed for treatment. It is important to highlight that, in Brazil, the disposal of disused, expired or leftover medicines is made by a large part of the population in common waste or public sewage system. Attitudes that cause aggression to the environment, contamination of water, soil and animals, and the health risk of people who may reuse them by accident or even intentionally due to various social or circumstantial factors.²

Thus, the fixed active point of collection of discarded drugs in the Higher Education Institution provides a great social and environmental impact, collaborating both with orientations in society and promoting a permanent action to help the government agencies to promote actions of correct destination of medications that have been discarded.

Figure 1 shows the quantity in units and percentage of discarded drugs classified by reference, generic and similar. In the period of 1 (one) year, out of a total of 922 units, being 84 different drugs, the predominance was similar drugs. Among the drug categories, generics are the most prescribed and sold in Brazil, representing an increase of approximately 63% of prescriptions until the first two months of 2018, according to the Brazilian Association of Generic Medicines Industries (Pro Generics).

The National List of Essential Medicines (RENAME) establishes that prescriptions derived from care via the Single Health System (SUS) are by the Brazilian Common Denomination (DCB), that is, prescription of generic drugs. This is based on the adherence of this category worldwide relying on its bioequivalence and bioavailability tests compatible with reference or ethical drugs.⁴

Health Surveillance shows that the savings on generic purchasing is almost 35% over the value of ethical medicines. Already the similar, have greater savings over generics because bioequivalence tests are not mandatory, inducing lower spending for pharmaceutical industries⁵. The profit on selling a similar drug is higher when compared to the referral and generic.⁵ This may be a hypothesis for the data presented in Figure 1. Since similar drugs have lower costs, the population's access increases and, in addition, generic drugs being prescribed by qualified professionals, the treatment is adequate to the prescription avoiding the generation of single drugs.

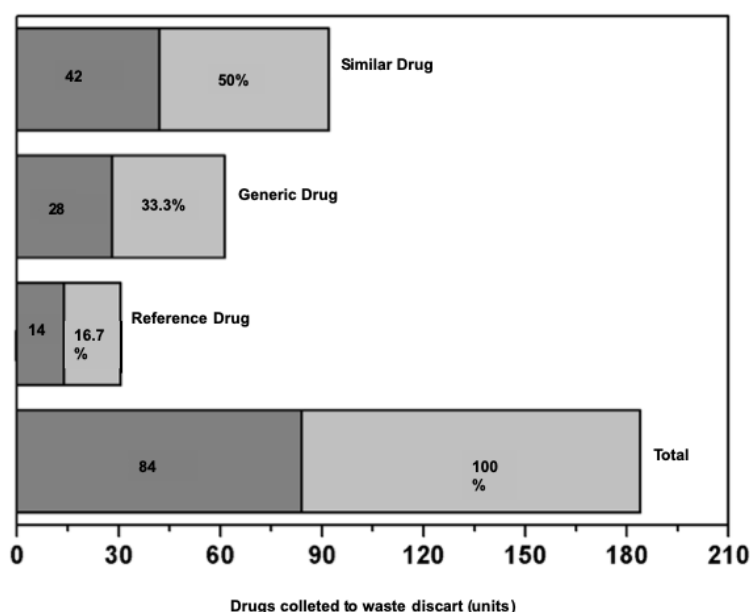


Figure 1- Classification of drugs collected in a HEI of DF for correct disposal.

Among the routes of administration, the oral drugs were the most discarded being presented in tablet, tablet and capsule dosage forms (Figure 2). The reason for this finding is due to the fact that the oral route has a higher number of compatible pharmaceutical forms such as capsules, uncoated tablets, coated tablets, liquid, suspension, among others, besides being a safe and easily adherent route of administration. to treatment.⁶ When safe administration is said, the kinetics by which the drug / drug is subjected to bioavailability is considered. In case of inadequate ingestion, reversal procedures are feasible.⁶⁻⁷ Regarding adherence, the oral route does not cause pain to the patient and, as observed, the pharmaceutical forms that prevent the exploitation of organoleptic properties of drugs predominated (Figure 2).

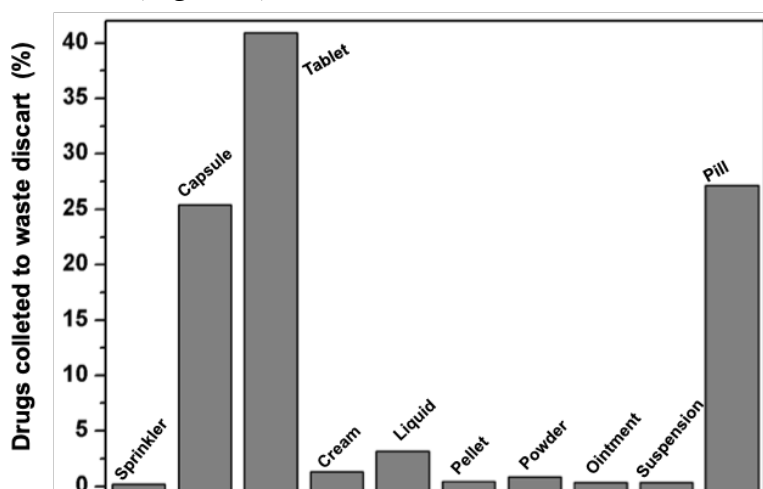


Figure 2- Classification of pharmaceutical forms of medicines collected in a HEI of DF for correct disposal.

Attention was drawn to the disposal of expired drugs from 2016 to 2019 (Figure 3). The low amount of medicines discarded in previous years may be

related to the practice of incorrect disposal by the population.¹ In addition, it is observed that this point was installed 1 year ago, that is, in August 2018, and medicines have been counted since 2012, that is, the population has the habit of storing these medicines even at home.⁸ A close amount among the disposed drugs valid in 2015, 2020 and unreadable date. Disregard for these drugs before expiration may be related to lack of need for use and it was observed that most of these drugs were free.⁹

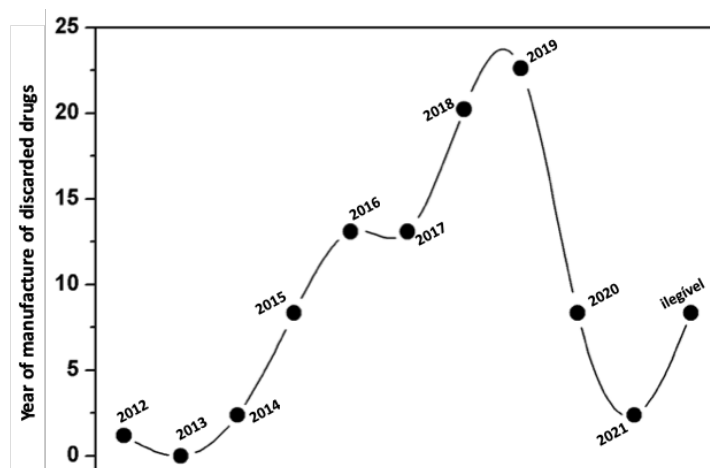


Figure 3- Registration of expiration date of medicines collected in a DF HEI for correct disposal.

Phytotherapeutic and homeopathic medicines were collected despite being a minority and among allopathic medicines, veterinary medicines were also found (Figure 4). Although in Brazil the prescription of allopathic medicines remains in ranking, the adherence of the population to herbal and homeopathic medicines inserted in the National Policy of Integrative and Complementary Practices (PNPIC) and the National Policy of Medicinal and Phytotherapeutic Plants (PNPMF) is increasing.¹⁰⁻¹²

Medicines for internal veterinary use were also collected. This finding was important in relation to the ability of pharmacists to practice pharmaceutical care for domestic veterinary products in veterinary clinics or in domestic pet sales outlets.. This assistance is supported by Law 13.021 / 14 which requires the presence of a pharmacist in any establishments that sell medicines, including veterinary clinics.¹³

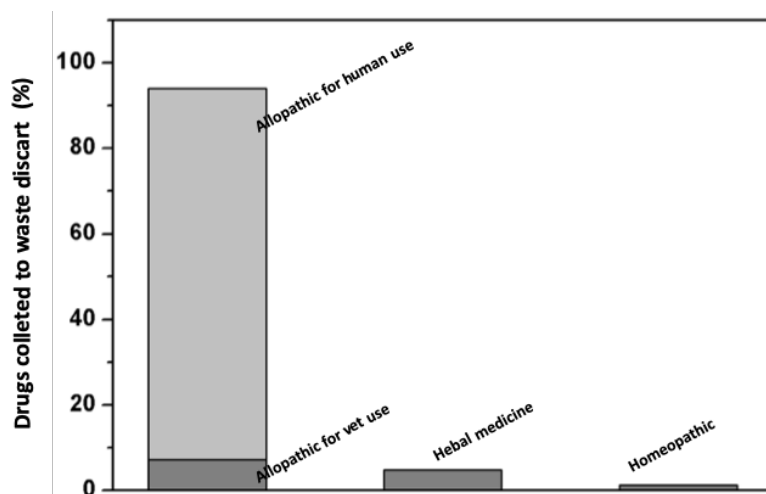


Figure 4- Drugs collected in a HEI of DF for correct disposal from the preparation (allopathic, herbal and homeopathic).

Figure 5 shows the list of drugs collected by therapeutic class. Firstly, polyvitamins were accounted for; second, gastroprotectants such as ranitidine and omeprazole; third, psychotropic; fourth, anti-inflammatory and fifth, antimicrobial. These first two classes may be ranked because of easy access to purchase these prescription drugs. This result is worrying considering that excess vitamin causes health damage.

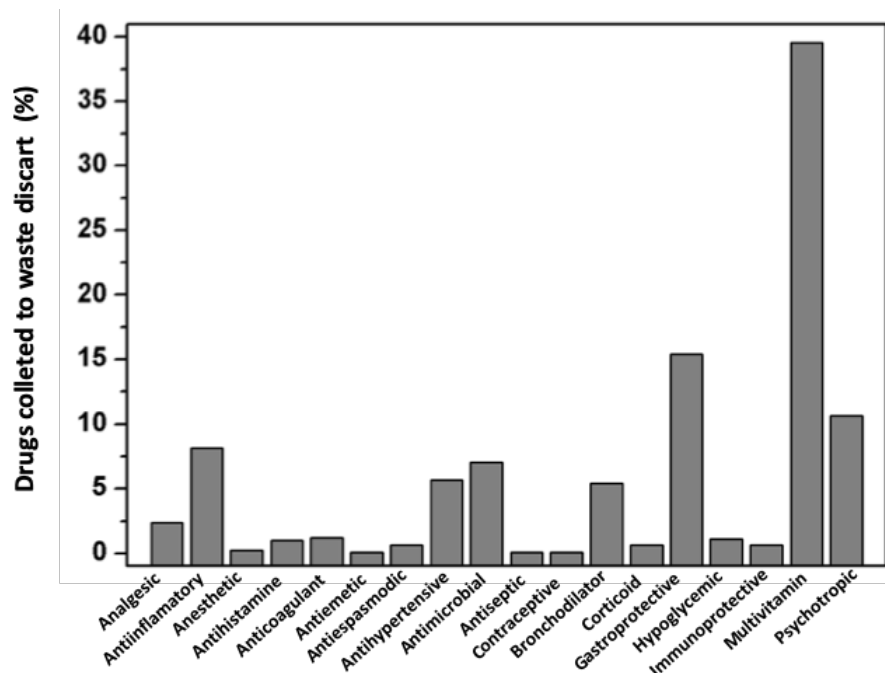


Figure 5- Drug classes collected at a DF HEI for proper disposal.

Discarding psychotropics and antimicrobials suggests treatment discontinuation as well as discarding anti-inflammatories suggests self-medication as it does not require a prescription and is easily accessible to consumers..¹⁴⁻¹⁵

Final Considerations

This research is the result of an extension project developed by academics and teachers of a University Center located in the Federal District. Through the results, it was possible to quantify the most discarded classes of medications as well as to discuss the hypothesis of leftover of these drugs due to the interruption of treatment and / or the practice of self-medication. The aim of this study was to present the conscious collection of expired, disused and / or inappropriate medications in the higher education institution. This study has its importance because most of the population provides the disposal of medicines in common waste and domestic sewage such as sinks, toilets and tank.. Community awareness of proper disposal of accessible language medicines and facilitating access to disposal points is of utmost importance..

References

1. Ramos Hayssa Moraes Pintel, Cruvinel Vanessa Resende Nogueira, Meiners Micheline Marie Milward de Azevedo, Queiroz Camila Araújo, Galato Dayani. Descarte de medicamentos: uma reflexão sobre os possíveis riscos sanitários e ambientais. *Ambient.soc.* [Internet]. 2017 Dec [cited 2019 Dec 04]; 20(4):145-168. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-753X2017000400145&lng=en. <http://dx.doi.org/10.1590/1809-4422asoc0295r1v2042017>.

2. Agência Nacional de Vigilância Sanitária (ANVISA). Resolução RDC nº 222, de 28 de março de 2018. Regulamenta as boas práticas de gerenciamento dos resíduos de serviços de saúde e dá outras providências [site na internet]. 2018 [acessado 2019 Abr 08]. Disponível em: http://portal.imprensaanacional.gov.br/web/guest/consulta?p_p_id.
3. Falqueto Elda, Kligerman Débora Cynamon, Assumpção Rafaela Facchetti. Como realizar o correto descarte de resíduos de medicamentos?. Ciênc. saúde coletiva [Internet]. 2010 Oct [cited 2019 Dec 04]; 15(Suppl 2): 3283-3293. Available from: <http://dx.doi.org/10.1590/S1413-81232010000800034>.
4. Brasil. Lei nº 9.787 de 10 de fevereiro de 1999. Altera a Lei nº 6.360, de 26 de setembro de 1976, que dispõe sobre a vigilância sanitária, estabelece o medicamento genérico, dispõe sobre a utilização dos nomes genéricos em produtos farmacêuticos e dá outras providências. Diário Oficial da União, Brasília, 11 de fevereiro de 1999.
5. Sousa Caissa Veloso e, Mesquita Jose Marcos Carvalho de, Lara José Edson. Análise da decisão de compra de medicamentos frente à existência de produtos substitutos: um estudo no município de Belo Horizonte, Brasil. Ciênc. saúde coletiva [Internet]. 2013 Nov [cited 2019 Dec 04]; 18(11): 3311-3320. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232013001100021&lng=en. <http://dx.doi.org/10.1590/S1413-81232013001100021>.
6. Arrais PSD, Fernandes MEP, da Silva Dal Pizzol T, Ramos LR, Mengue SS, Luiza VL, et al. Prevalência da automedicação no Brasil e fatores associados. Rev Saude Publica. 2016;50(supl 2):13s.
7. Donaldson, LJ, Kelley, ET, Dhingra-Kumar, N, Kieny, M-P, Sheikh, A. medication without harm: WHO's Third global patient safety challenge. Lancet. 2017;389:1680-681.
8. Silva, J. M., & Geron, V. L. M. G. (2018). Avaliação de armazenamento de medicamento em domicílio em um bairro de ariquesmes / RO. Revista Científica Da Faculdade De Educação E Meio Ambiente, 9(edesp), 491-499. <https://doi.org/10.31072/rcf.v9i2edesp.609>
9. Giselle Margareth Pilla Blankenstein1 Arlindo Philippi Junior. Descarte de medicamentos e a Política Nacional de Resíduos Sólidos. R. Dir. sanit., São Paulo v.19 n.1, p. 50-74, mar./jun. 2018
10. Brasil. Ministério da Saúde (MS). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. *Práticas integrativas e complementares: plantas medicinais e fitoterapia na Atenção Básica* 2012. [acessado 2013 Set 09]. Disponível em: http://189.28.128.100/dab/docs/publicacoes/geral/miolo_CAP_31.pdf
11. Ministério da Saúde. Secretaria de Ciência, Tecnologia e Insumos Estratégicos. Departamento de Assistência Farmacêutica. Política Nacional de Plantas medicinais e Fitoterápicos, 2006. Site: <http://www.saude.gov.br/acoes-e-programas/programa-nacional-de-plantas-medicinais-e-fitoterapicos-ppnprmf/politica-e-programa-nacional-de-plantas-medicinais-e-fitoterapicos/projetos-apoiados>
12. Bruning MCR, Mosegui GBG, Vianna CMM. A utilização da fitoterapia e de plantas medicinais em unidades básicas de saúde nos municípios de Cascavel e Foz do Iguaçu – Paraná: a visão dos profissionais de saúde. Cien Saude Colet 2012; 17(10):2675-2685.
13. Brasil. Presidência da República. Lei nº 13.021, de 8 de agosto de 2014. Dispõe sobre o exercício e a fiscalização das atividades farmacêuticas. Disponível em: http://www.planalto.gov.br/ccivil_03/_Ato2011-2014/2014/Lei/L13021.htm
14. Mello AF, Soares LSS, Areda CA, Blatt RC, Galato D. Uma abordagem econômica de processos judiciais de medicamentos impetrados contra um município do sul do Brasil. J. Bras. Econ. Saúde. 2016;1:39-46.
15. Cruz MJB, Azevedo AB, Cruz HL, Bodevan EC, Araújo LU, Santos DF. Descarte de medicamentos em municípios do Vale do Jequitinhonha, Minas Gerais, Brasil. Vigil Sanit Debate 2017; 5(1):84-90.

Correspondent Author

Alice da Cunha Morales Álvares
Centro Universitário Planalto do Distrito Federal
Pau Brasil Avenue, Lot 2. Águas Claras, Federal District, Brazil.
pharmalice@gmail.com