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STRUCTURED METHOD FOR THE PRACTICE OF MEDICATION CONCILIATION IN AN ONCOLOGICAL HOSPITAL

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ABSTRACT

Medication error is any preventable event capable of causing or leading to the inappropriate use of medication that is under the control of health care professionals, patients or consumers. It is estimated that 46% of medication errors occur at hospital admission and one way to reduce them is by adopting medication reconciliation in a hospital unit. The work was aimed at creating a method for the practice of drug conciliation in a structured manner. An exploratory study was carried out in a large oncologic hospital in Rio de Janeiro/Brazil, using the method to hospitalize patients in the hospital's Gynecology and Oncology Services. The method was applied to 201 hospitalized patients, allowing the measurement of the frequency of drug conciliation instituted. Of the total number of patients interviewed, 89.6% were female; 28.2% were between 61 and 70 years of age and 25.2% were between 51 and 60 years of age (25.2%). The main reason for hospitalization was surgical procedure (69.3%). Through the proposed method, discrepancies were identified; these were recorded according to the classification of Otero. From the proposed method, the drugs used prior to hospitalization can be compared with the medical prescription and the discrepancies analyzed, increasing the quality of care in hospital routine.

Keywords: Medication Therapy Management, Patient Safety, Risk Management, Medication Errors

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1. INTRODUCTION

Health care includes processes directly related to the action of human beings who are known to be subject to error. Among the most frequent failures in health care processes are the so-called medication errors (ME). ME is considered a preventable event with the potential to promote the inappropriate use of medication or harm to the patient while the medication is with the health professional, patient or consumer (NCCMERP, 2019).

The analysis of medical prescription data from patients admitted to three hospitals in the city of Rio de Janeiro resulted in the incidence of 7.6% of adverse events; of these, 66.7% could have been avoided (Mendes *et al.*, 2009). It is estimated that 46% of MEs occur at hospital admission (Nuez, 2010).

The same patient can generate multiple information when entering a health care institution and/or by being cared for by different professionals, which should be organized in such a way as to produce a context that supports decision-making about treatment. When it comes to patient safety, the most important challenge is to avoid harm during care. In this regard, in 2017, the World Health Organization (WHO), recognizing the importance of avoiding harm associated with unsafe drug practices and medication errors, launched its third Global Patient Safety Challenge: Medication without harm. This challenge aims to reduce serious and preventable drug-related harm by 50% worldwide by 2022.

In this regard, WHO has asked countries and key stakeholders to prioritize three areas for strong commitment, early action and effective management to protect patients from harm and maximize the benefit of drug use: i) drug safety in care transitions, ii) drug safety in polypharmacy, iii) drug safety in high-risk situations (WHO, 2017).

Drug discrepancies affect almost all patients who go through transitions of care, as in the example of admission or discharge from hospital. In these contexts, the main strategies to improve drug safety include: (a) building the best possible drug history through patient interview and verification of at least one source of information; (b) reconciliation and updating of drug lists; (c) communication with patients and future health care providers about changes in their medication, and appropriate tools and technology are needed to practice drug reconciliation (WHO, 2017).

The implementation of the drug reconciliation process is advised by international patient safety organizations such as the World Health Organization and the Joint Commission on Accreditation of Healthcare Organization (JCAHO). These entities have recognized that the absence of a safe plan for the use of medications generates avoidable risks (JCI, 2017). The conciliation of medications is a process that consists of preparing a list of medications used by the patient before hospital admission, as well as collecting relevant clinical information throughout their treatment. The list is compared with the medical prescription of admission and the discrepancies found are analyzed and must be justified (Lesselroth *et al.*, 2017).

In view of the safety of drugs in polypharmacy and in high-risk situations, cancer patients are of special interest. Cancer comprises a set of more than 100 diseases, which have disorderly cell growth in common, interfering with the functioning of tissues and organs. By the year 2030 27 million new cases are expected, 17 million of which will result in death. In Brazil, the estimate published by the National Cancer Institute José Alencar Gomes da Silva (Inca), for the biennium 2018/2019, is the occurrence of 600 thousand new cases of cancer, for each year (Inca, 2018).

The oncologic patient presents peculiarities inherent to the degree of severity of the disease and the complexity of the therapy, which usually involves medication for the treatment of the neoplasia and for the management of associated symptoms. Moreover, most neoplasms have a direct correlation with age, which increases the probability that patients have comorbidities (Vega et al., 2016) and consequently use many medications. The large amount of drugs used by these patients increases the possibility of errors and the need for a careful look by the healthcare team.

It has already been demonstrated that the drug conciliation process in a hospital unit promotes a considerable reduction in therapy-related risks (Lesselroth *et al.*, 2017). However, despite the proven importance, structured methods for the drug conciliation process are still scarce in the literature. In this sense, this article presents the elaboration and validation of a method for drug conciliation in a systematized manner, besides being adequate to the needs of cancer patients.

2. METHOD

The study was conducted at the National Cancer Institute - Unit II (INCA-II), Rio de Janeiro, Brazil. The INCA-II is a reference center of high complexity in oncology, belonging to the Unified Health System, specialized in the treatment of patients with gynecological, bone and connective tissue neoplasms, with 89 beds. It was certified by JCAHO in 2008 and the drug reconciliation activity was implemented in 2010, meeting the requirements of Hospital Accreditation. Since then, the drug reconciliation was performed in the hospital, but without a structured method.

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A retrospective, exploratory and descriptive study was carried out to construct the method of drug reconciliation. Data were collected from records of the INCA-II pharmacy service for a period of ten months. Patient profiles, clinical history, and data on drug use in the period prior to hospital admission were analyzed.

The historical data were used for the elaboration of a structured method for the systematization of the pharmaceutical drug reconciliation interview. This method was translated into a form to be applied to patients at the time of admission, in order to obtain as much information as possible about the therapy in use and the therapy prescribed in the hospital.

The form was then validated from its application to patients admitted to INCA II. Patients' clinical data were obtained from: (a) analysis of physical and electronic medical records; (b) evaluation data from teams of doctors and nurses; (c) observation of laboratory tests.

The study population consisted of users admitted for gynecological or connective bone surgery, chemotherapy, examinations and clinical support (during the study period). Patients who reported the use of some medication prior to admission were included in the sample, and patients under 18 years of age were excluded from the sample, without being able to answer the questions.

The method of drug reconciliation was applied by the clinical pharmacy service. All pharmacists who used the method were previously trained. The time spent by the pharmacist during the interview to fill out the form was also observed.

The study was approved by the Research Ethics Committee under protocol number CAAE.26796314.9.0000.5274.

3. RESULTS

During the study period, the method was applied to 201 patients by six pharmacists. The method developed to systematize the process of drug conciliation and pharmaceutical anamnesis was translated into a form, divided into four parts: 1 - Socio-demographic information; 2 - Collection of the patient's clinical history; 3 - Information on the use of medication prior to hospitalization; 4 - Analysis of the medication brought by the patient and its use prior to hospitalization.

This instrument covers the entire process, that is, it identifies the medicines used in the period prior to hospital admission, with indication of the pharmaceutical form, dosage and route of administration. Personal information, such as name and registration, which are relevant only for the internal identification of the patient were not used.

The form presents a field for recording patients' cognitive conditions at the time of the interview, with the record of their ability to interact with the clinical pharmacist and an open field to justify difficulties, such as the use of sedatives. It is also possible to record whether the information was self-declared or if they had the intervention of a caregiver, with or without a kinship degree. This field allows the veracity of the information to be verified.

The average time spent on the instrument was 30 minutes per patient.

Of the total number of patients interviewed, 89.6% (n=180) were female, of which 28.2% were between 61 and 70 years of age and 25.2% were between 51 and 60 years of age (25.2%). The main reason for hospitalization was the surgical procedure (69.3%; n= 139). The hospitalization date and the interview are information of equal relevance, since the interview must be performed as close as possible to the hospitalization. From the representative, 53% of the interviews were carried out on the same day.

Knowing if the patient is able to interact with the team helps to check the veracity of the information recorded on the form. Likewise, if the person responsible for the answers is the companion, it is possible to identify his/her degree of knowledge regarding the patient and if he/she is aware of the institutional flows that can help in the care process.

Chart 1. Patient Data

Patient Data				**Presentation Check List**
Name:			Diagnosis: CID	Is the patient able to interact with the team?
Registration:	Ward / Bed:		Data da Hospitalization:	( ) Yes ( ) No Why?
Date of Birth:	Procedure:	( ) Surgery	Date of Interview:	
Age:		( ) Chemotherapy		Responsible for questionnaire responses:
( ) FEM ( ) MALE		( ) Examination		( ) Patient ( ) Companion
		( ) Which clinical support?		Kinship level:

Source: Own elaboration

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The second domain of the method seeks information on the patient's clinical history.

The most complete information possible about the patient's clinical history contributes to a better evaluation of the pharmacotherapeutic profile employed. The systematization of this information can favor the stratification of the data and the delineation of the patient's profile, directing future actions for improving care.

The registration of comorbidities, in turn, helps in the search for information on the use of medicines, because the chronic use in treatments can be forgotten at the time of being reported. This requirement was included at the suggestion of the specialists, when they detected that their absence did not allow them to see whether any medicine was being forgotten in the report, and also the difficulty of finding the information in the medical prescription.

At the third moment of the form, information on the use of medication is sought before admission.

Nursing evaluation in the reconciliation process points to the importance of multiprofessional interaction. One of the filters used in the pharmacist's visit is the nursing evaluation before admission, describing comorbidities and the use of drugs, resulting in a double check of information and strengthening their veracity.

The description of the reasons that made it impossible to collect the drugs is important for the evaluation of the quality of the process.

Chart 4 provides the health care team with an expanded view of medications used prior to hospitalization, making it easier to compare them with the medical prescription prepared within the first 24 hours. Its caption allows visualization of the outcome after the comparison; if there was a need for pharmaceutical intervention and if it was accepted by the prescriber; in addition to the reasons why the drug was not prescribed during hospitalization by medical decision. Finally, the indication of the type of error avoided at the time of data collection allows a more precise classification.

4. DISCUSSION

The fields for filling out the conciliation tool were prepared with clear and objective questions, favoring the spending of less time in the interviews. Initially, the time spent in each interview ranged from 45 minutes to 1 hour. With the most objective instrument, the time was reduced to an average of 30 minutes, which is in accordance with the literature (Karaoui, 2019; Lesselroth *et al.*, 2017).

The quality of the results of a drug reconciliation process is directly related to the quality of the data collected. Thus, an informative and well-structured tool simplifies database design and data validation (Brembilla *et al.*, 2018). A study conducted by Wai *et al.* (2019), in which 138 patients were included, demonstrated that a structured form was able to identify a high rate of discrepancy between the prescription and the drugs used by patients.

Considering that the hospital where the study was conducted is specialized in gynecological, bone and connective tissue tumors, a greater presence of female patients is expected, as observed in research developed by the Inca, which found that 52% of the cases analyzed for cancer were female (Inca, 2018). Regarding age, this same study showed that the median age of patients assisted in Brazil is 56 years, consistent with the values found in the sample of this study (Inca, 2018).

Chart 2. Clinical history of the patient

Clinical History
Have you ever had any Adverse Drug Reactions? ( ) No ( ) Yes Which? _____
Do you use an enteral diet or food supplement? ( ) No ( ) Yes Which? _____
Have you undergone any Antineoplastic treatment? ( ) No ( ) Yes Which? ( ) Chemotherapy ( ) Surgery ( ) Hormone therapy ( ) Teletherapy ( ) Brachytherapy
Comorbidities : ( ) Hypertension ( ) Diabetes ( ) Nephropathy ( ) Hepatopathy ( ) Gastric dysfunction ( ) Cardiopathy ( ) Hyperthyroidism ( ) Hypothyreiodism ( ) Thrombosis ( ) HIV ( ) Others:_____ ( ) Allergy Which? _____
Do you have any symptoms at the time of the interview? ( ) No ( ) Yes Which? _____

Source: Own elaboration

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Lessard's (2006) survey, at a large university hospital in Brazil, noted that drug conciliation is most effective when the interval between the date of admission and the date of the interview is shorter than 48 hours. Reppetto and Souza (2005) affirm that when the records are not made in a systematic and global way, there is interference in the quality of the assistance provided.

The correct documentation of the history of drugs in use by patients is fundamental, since most of the errors found are related to failures in obtaining the medical history of hospitalized patients (Gleason, 2010; Salameh, 2018). Failure to perform an evaluation at the time of admission may hinder the conciliation process, in addition to reducing the quality and efficiency of the process (Lessard, 2006).

According to Joint Commission International (JCI), the medicines used by patients should not be near them, thus avoiding self-medication and contributing to patient safety (JCI, 2017). Therefore, it is important to know the reasons that prevented the collection of medicines close to the patients.

Regarding the conciliation interviews, Mandalyn and Rhonda (2006) observed in a study developed in an Intensive Care Unit (ICU) of a general hospital that, when the nursing team participates in the conciliation, through the interview at admission, there is an increase in the accuracy of the list of drugs and greater detection of discrepancies (Mandalyn, 2006)

Classifying the discrepancies found according to the Otero error classification (2008) proved to be an important tool for educational actions with prescribers. However, the systematic review performed by McNab *et al.* (2018) showed different taxonomies used to classify these discrepancies, which makes it difficult to assess the clinical relevance of the interventions performed.

Soler-Giler *et al.* (2011) demonstrated that 86.6% of patients studied in an emergency at a University General Hospital in Spain had some kind of conciliation error. According to Allende Bandrés *et al.* (2013), 866 discrepancies were found in 446 patients, and of these 16.8% had at least one conciliation error. In a study that investigated the drugs prescribed for pediatric patients admitted to a cancer hospital in Porto Alegre, within 48 hours, 485 drugs were reconciled and 41% showed some discrepancy. In 14% (68/485) there was no intentionality, characterizing error. In the group of patients who used more than four medications, 42% revealed error. The most frequent errors observed were: omission of drugs (67.68%); incorrect prescription (16.2%); incorrect dose (10.3%); and incorrect frequency (4.4%). In 69% of the cases, the error did not affect the patient, and in 31% it reached the patient, but did not cause damage (Schuch *et al.*, 2013).

Talebi *et al.* (2018) evaluated drug interaction and medical compliance from the conciliation forms, demonstrating that the structured conciliation process has a positive impact in preventing drug errors. Chart 4, of the method presented here, shows a checklist of drugs used before admission. Huber *et al.* (2017) demonstrated that the implementation of a checklist significantly reduces drug discrepancies at admission, and has positive consequences for patient safety.

Even performing a retrospective analysis, the use of validated data collection forms generates an advantage of homogeneity in the quality of the information obtained. In forms with consolidated internal validation, the research instrument can be applied again in different scenarios or moments, with good use and even comparability of the data obtained (Thomas *et al.*, 2018).

Chart 3. Information on the use of medication before admission

Pharmaceutical Anamnesis				
Does the patient have a Nursing Assessment?	( ) Yes	( ) No		
Does the patient use Medicine?	( ) Yes	( ) No		
Description of drug use in evaluation:	( ) Total	( ) Partial	( ) No description	
Does the patient use any alternative treatment?	( ) No	( ) Yes	Which? _____	
Are the medicines collected by the Pharmacist?	( ) Yes	( ) No	( ) Supplied at the Pharmacy	( ) Non Fractionable Medications
			( ) Manipulated Medicine	
			( ) Delivery Refusal by Patient	

Source: Own elaboration

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Chart 4. Medications brought by the patient and used before admission

Medicines Used by the Patient										
Medication / Dose	Posology	Was it brought to the hospital? (Y/N)	Reconciled (Y/N)	Was intervention necessary? (Y/N)	If not necessary, what is the reason?	In case of intervention, was it accepted? (Y/N)	If so, what intervention was performed?	If not, what's the reason?	Since when is the medication used?	Was any medication error avoided? (Y/N) Which?
		( )	( )	( )	( )	( )	( )	( )		( ) ( )
		( )	( )	( )	( )	( )	( )	( )		( ) ( )
		( )	( )	( )	( )	( )	( )	( )		( ) ( )
		( )	( )	( )	( )	( )	( )	( )		( ) ( )
		( )	( )	( )	( )	( )	( )	( )		( ) ( )
		( )	( )	( )	( )	( )	( )	( )		( ) ( )
		( )	( )	( )	( )	( )	( )	( )		( ) ( )
		( )	( )	( )	( )	( )	( )	( )		( ) ( )
		( )	( )	( )	( )	( )	( )	( )		( ) ( )
		( )	( )	( )	( )	( )	( )	( )		( ) ( )
		( )	( )	( )	( )	( )	( )	( )		( ) ( )

Does the patient self-medicate? ( ) No ( ) Yes Which? _______________

Description of the reasons:	(1) No contact was made with the doctor	(2) Replacement with standardized medicine	(3) Clinical condition of the patient
(4) No medical justification	(5) Surgery	(6) Dose adjustment	(10) Medical Procedures
(7) Dosage adjustment	(8) Inclusion of medication	(9) Medication exclusion	(11) Does not apply
Types of Errors Avoided	A. Wrong medicament	B. Dose or medicine omission	C. Wrong dose
D. Wrong administration frequency	E. Wrong pharmaceutical form	F. Wrong route of administration	G. Wrong administration time schedule
H. Wrong patient	I. Wrong treatment duration	J. Insufficient treatment monitoring	K. Lack of patient compliance

Source: Own elaboration

According to Thomas *et al.* (2018), health research tools are essential for gathering information from individuals representing a given population. Likewise, they should be clear and functional, in order to enable the response to the study objectives. The design of an instrument is an extremely important aspect to ensure that data are collected accurately and that the results are interpretable and generalizable.

The most relevant aspects in designing an instrument are: considering the type of question (whether objective or subjective), adequate language for the population to be studied, clear and easy to understand questions, adequate planning of the research instrument to minimize possible biases and errors in conducting studies (Thomas *et al.*, 2018; Bryson *et al.*, 2012).

Vega *et al.* (2016) demonstrate the importance of implementing reconciliation in cancer patients, since their study revealed that the medication errors found are similar to other populations.

Mekonnen *et al.* (2016), in their systematic review, did not demonstrate conclusively and consistently the effectiveness of interventions at different levels of care, as well as the review conducted by McNab *et al.* (2018). Thus, the need for future studies to identify patients who will benefit more from the practice is reinforced.

5. CONCLUSION

During the application of the method, it was verified that the objectivity of the information collection facilitates its registration, speeding up the pharmaceutical intervention and minimizing recurring errors.

The method allowed measuring the frequency of drug reconciliation instituted in patients hospitalized for oncologic treatment or surgery, helping to identify the critical points of the medical prescription during hospitalization. In addition, it allowed an interaction between drug reconciliation and medication error classification.

The medications used prior to admission are now compared with those prescribed during hospitalization and the discrepancies analyzed within the institution. Pharmaceutical interventions will be classified according to the intervention reason, namely: dose adjustment, posology adjustment, surgery, drug inclusion, drug exclusion, substitution by standardized drug. The interventions not accepted will be classified as: (a) no medical contact has been made, (b) the patient's clinical condition, (c) no medical justification, and (d) medical conduct. The medication errors avoided will be classified according to the Otero classification (2008), considering the flaws that involve the medical prescription process.

The method also allows simple and easy monitoring of chronic diseases, which are not the main focus of admission to an oncologic hospital, but can intervene in the response to treatment. In addition, it records in a sequential manner the interventions performed and the resulting medical conduct, if it is shown to be an effective tool for systematizing the process of drug reconciliation. This will allow better records for later analysis of the data and can be used in any other hospital that wants to develop the reconciliation activity in a systematized way and with easily applicable tools. As a consequence, it increases the chances of adherence, both for the team of pharmacists and the patients involved.

Considering the population of the service, which is high risk, future studies are needed to determine which group of patients will benefit most from the reconciliation practice.

REFERENCES

Allende Bandrés, M.A.; Arenere Mendoza, M.; Gutiérrez Nicolás, F. et al. (2013), "Pharmacist-led medication reconciliation to reduce discrepancies in transitions of care in Spain", International Journal of Clinical Pharmacy, Vol. 35, No. 6, pp. 1083 1090.

Brembilla, A.; Martin, B.; Parmentier, A.L.; Desmarets, M.; Falcoz, P.E.; Puyraveau, M.; Mauny, F. (2018), "How to set up a database?—a five-step process", Journal of Thoracic Disease, Vol. 10, Suppl 29, S3533 S3538.

Bryson, G.L.; Turgeon, A.F.; Choi, P.T., (2012), "The science of opinion: survey methods in research". Canadian Journal of Anesthesia, Vol. 59, No. 8, pp. 736 742.

Gleason, K.M.; McDaniel, M.R.; Feinglass, J.; Baker, D.W.; Lindquist, L.; Liss, D.; Noskin, G.A. (2010), "Results of the Medications at Transitions and Clinical Handoffs (MATCH) study: an analysis of medication reconciliation errors and risk factors at hospital admission", Journal of General Internal Medicine, Vol. 25, No. 5, pp. 441 447.

Huber, T.; Brinkmann, F.; Schroder, C.; Stekhoven, D.J.; Marti, W.R.; Egger, R.R. (2017), "Implementation of an IT-guided checklist to improve the quality of medication history records at hospital admission", International Journal of Clinical Pharmacy, Vol 39, pp. 1312 1319.

Instituto Nacional de Câncer José Alencar Gomes da Silva (2018), "Estimativa 2018: Incidência do Câncer no Brasil", Coordenação de Prevenção e Vigilância - INCA, Rio de Janeiro.

Joint Comission International (2017). "Hospital Accreditation Standards [edited by] the Brazilian Consortium of Accreditation of Health Care Systems", Rio de Janeiro, Vol 6, pp. 296.

K araoui, L.R.; Chamoun, N.; Fakhir, J.; Ghanem, W.A.; et al. (2019). "Impact of pharmacy-led reconciliation on admission to internal medicine service: experience in two tertiary care teaching hospitals, BMC Health Services Research, pp.19:493.

Lessard, S.; DeYoung, J.; Vazzana, N. (2006), "Medication discrepancies affecting senior patients at hospital admission", American journal of health-system pharmacy: AJHP: official journal of the American Society of Health-System Pharmacists, Vol. 63, No. 8, pp. 740 743.

Lesselroth, B.; Adams, K.; Tallett, S.; Ong, L.; Bliss, S.; Ragland, S.; Tran, H.; Church, V. (2017), "Naturalistic Usability Testing of Inpatient Medication Reconciliation Software", Studies in Health Technology and Informatics, Vol. 234, pp. 201 205.

MANDALYN, S. R. N; RHONDA, W. R. N. (2006), "Medication Reconciliation: Developing and Implementing a Program", Critical Care Nursing Clinics of North America, Vol. 18, No. 4, pp. 503–507.

McNab, D.; Bowie, P.; Ross, A.; MacWalter, G.; Ryan, M.; Morrison, J. (2018), "Systematic review and meta-analysis of the

effectiveness of pharmacist-led medication reconciliation in the community after hospital discharge", BMJ quality & safety, Vol. 27, 4, 308 320.

Mekonnen, A.B.; McLachlan, A.J.; Brien, J.-A.E. (2016), "Pharmacy-led medication reconciliation programmes at hospital transitions: a systematic review and meta-analysis", Journal of Clinical Pharmacy and Therapeutics, Vol. 41, No. 2, pp. 128 144.

Mendes, W.; Martins, M.; Rozenfeld, S.; Travassos, C. (2009),"The assessment of adverse events in hospitals in Brazil", International Journal for Quality in Health Care: Journal of the International Society for Quality in Health Care, Vol. 21, No. 4, pp. 279 284.

NCCMERP (2019). National Coordinating Council for Medication Error Reporting and Prevention. "What is a medication error?" (https://www.nccmerp.org/about-medication-errors, acessado em 25 de novembro de 2019).

Nuez, C.R. (2010), "Conciliación de la medicación: una herramienta necesaria para garantizar la continuidad asistencial y mejorar la seguridad del paciente", Buttletí d´informació terapèutica, Vol. 22, No. 4, pp.19-26.

OTERO, López; M. J.; CASTANO, Rodriguez B.; PÉREZ, Encinas M.; CODINA, Jane C.; TAMÉS, Alonso M. J.; SÁNCHEZ, Muñoz T. Actualización de la calssificación de errores de medicación del grupo Ruiz-Jarabo 2000. Farm. Hosp. 2008; 32(1):38-52.

Reppetto, M.A; Souza, M.F. (2005), "Evaluation of nursing care systematization through the phases of nursing process performance and registration in a teaching hospital", Revista Brasileira de Enfermagem, Vol. 58, No. 3, pp. 325 329.

Salameh, L.; Abu F., R.; Basheti, I. (2018), "Identification of medication discrepancies during hospital admission in Jordan: Prevalence and risk factors", Saudi Pharmaceutical Journal, Vol. 26, No. 1, pp. 125 132.

Schuch, A.Z.; Zuckermann, J.; Santos, M.E.F.; Biancho, J.K.M.; Mahmud, S.D.P. (2013), "Medication reconciliation at admission to a pediatric oncology unit", Revista Brasileira de Farmácia Hospitalar e Serviços de Saúde, Vol. 4, Nº. 2.

SOLER-GINER, E; IZUEL-RAMI, M; VILLAR-FERNANDEZ, I; REAL, C. J. M; CARRERA, L. P; HERNANDEZ, M. J. (2011), "Calidad de la recogida de la medicación. The home en urgencies: discrepancies en la Conciliación". Hospital Pharmacy, Vol. 35, No. 4, pp. 165 – 171.

Talebi, M.M.; Forougha, A.S.; Esfahanib, P.R.; Ekandaria, R.; Haghgooa, R.; Fahimia, F. (2018), "Medication Interaction and Physicians Compliance Assessment through Medication Reconciliation Forms in a University Affiliated Hospital", Iranian Journal of Pharmaceutical Research, Vol. 17, pp. 159 167.

Thomas, D.B.; Oenning, N.S.X.; Goulart, B.N.G., (2018), "Rev. CEFAC. 2018 Set-Out; 20(5):657-664", Revista CEFAC, Vol. 20, No. 5, pp. 657 664.

Vega, T.G.C.; Sánchez, J.F.S; Bautista, M.J.A.; Martín, F.G.; Carrascosa, F.S.; Cañada, J.M.B. (2016), "Medication Reconciliation in Oncological Patients: A Randomized Clinical Trial", Journal of Managed Care & Specialty Pharmacy, Vol. 22, No. 6, pp. 734 740.

Wai, A.; Salib, M.; Aran, S. Edwards, J.; Patanwala, A. E. (2019), "Accuracy of patient self-administered medication history forms in the emergency department, American Journal of Emergency Medicine, Vol. 13, pp. 735 757.

World Health Organization (2017), WHO Global Patient Safety Challenge: Medication Without Harm, WHO, Geneva. Available at: http://apps.who.int/iris/bitstream/10665/255263/ 1/ WHO-HIS-SDS-2017.6-eng.pdf?ua=1&ua=1 (Accessed 14 Feb 2019).

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