CONSTRUCTION AND EVALUATION OF MEDICATION RECONCILIATION INSTRUMENTS FOR PEDIATRIC PATIENTS

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ABSTRACT:

OBJECTIVE: To construct and evaluate medication reconciliation instruments for hospital admission moments and the internal transfers of pediatric patients to the context of Brazilian hospitals.

Methods: Prospective descriptive study was performed from April 2014 to March 2015 in a pediatric public hospital. Four instruments were designed based on international literature to record the primary medication history, participant data and medication reconciliation. The instruments were analyzed by experts in Delphi technique. A pilot study assessed the need for adjustments and the clinical practice application compared to the primary drug history with the best possible drug history. A pilot study evaluated the necessity for adjustments and applicability in clinical practice compared to the primary medication history with the best possible medication history. The Pearson correlation and the Wilcoxon-Mann-Whitney test were used for statistical analysis.

Results: Experts suggested improvements in "Clear language and correct terminology". The pilot study indicated the need for instrument adjustments. Clinical practice identified a significant difference (P <0.05) in the comparison of the pharmaceutical researcher registry with the other professional registry for almost all variables analyzed, except for the information source and the intervention record.

Conclusion: The medication reconciliation forms were valid for pediatric patients in the institution studied and their allocation in a visible and accessible place of the medical records of similar institutions would allow the availability of relevant information about the drugs in use by pediatric patients to all those involved in their care, contributing to a safer care.

Keywords: Patient Safety; Medication Errors; Transitional Care; Evaluation of Research Programs and Tools; Validation Studies.

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INTRODUCTION

During medication use, the occurrence of communication problems can lead to medication errors. This type of error increases in care transition and can cause serious harm to patients.[1] In a review study with pediatric patients, Huynh found that 22-73% of patients had medication errors at hospital admission.[2] Medication reconciliation is considered a vital strategy to improve communication and prevent these errors[1] and increase patient safety.[3-4]

Medication reconciliation is understood as the process by which a complete and accurate list of drugs in use by the patient – including name, dose, frequency of use and route of administration – is obtained from this list. This allows for the adjustment of pharmacotherapy in care transitions from this list. The following moments are considered as care transitions: hospital admission, internal transfer and discharge.[5-6]

The list of medications obtained at the time of hospital admission, known as Best Possible Drug History (MHPM), includes multiple sources of information: patient/family history, patient record, pharmacy records, physician opinion and labels of medicine bottles. It is considered more adequate than the Primary Drug History (HPM), which usually uses only patient/family history data as source of information.[6-7]

However, the *Agency for Healthcare Research and Quality's* (ARQH) points out that the implementation of medication reconciliation remains a challenge in many hospitals.[3,6] The National Program for Patient Safety (PNSP), launched by the Ministry of Health (MS) in 2013, pointing out the reconciliation of medications as one of the strategies for managing drug therapy, did not detail the actions and instruments necessary for its accomplishment.[8-9]

For pediatrics, a population that has its own characteristics, especially in chronic health conditions,[10] elaboration of instruments that consider the context of the services offered in the Public Healthcare System (SUS)[11–14] is mandatory. The objective of this study was to construct and evaluate instruments for the reconciliation of medications for the moments of hospital admission and internal transfer of pediatric patients to the context of Brazilian hospitals.

METHODS

This is a prospective descriptive study held between April 2014 and March 2015, in five pediatric hospitalization units of a teaching and research hospital of the public network, of high complexity, considered as a national reference in the health of women, children, and adolescents and located in the city of Rio de Janeiro. The hospital carries out 4,500

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hospitalizations, with an installed capacity of 131 beds and does not have any electronic prescription system, so it uses manual filling charting to record information about patients. The total of beds in the studied units corresponded to 40% [53] of the existing beds in the hospital.

The construction of the medication reconciliation instruments for pediatric patients considered the handbook on Medication Reconciliation in the Acute Care Getting Started Kit, from the Canadian *Safer Healthcare Now*, the *Medication Reconciliation handbook, from the Joint Commission Medication Resources* and the *Individual Medication Reconciliation Audit Tool*, from the National Institute for Health and Care Excellence (NICE)[6-7,15]. The evaluation was performed through multiple methods, namely: panel of experts, pilot study and application in clinical practice.

Proposed instruments

Four manual filling instruments were built for the reconciliation of medications based on international books, studies, and manuals.[6,15-17] The instruments constructed were: Clinical Audit Report Review (FRPAC); Admissions Medication reconciliation Form (FCMA); the Internal Transfer Medication Reconciliation Form (FCMTI); and the Interview Guide.

FRPAC was used to collect HPM in medical records, such as: the category and specialty of the person responsible for HPM collection; the information recorded on the medications in use by the patient (name, dose, frequency of use and route of administration); the sources of information used in HPM collection; the family relationship of the interviewee in HPM, the interval between admission and HPM collection; drug-related problems; and the interventions recorded by the person responsible for HPM.

FCMA and FCMTI allow for the registration of general patient data, adverse and allergic reactions, medication data (name, dose, frequency of use, route of administration). FCMA records the sources of information used in the collection and date/time of use of the drug before hospital admission for each drug and, in FCMTI, it is recorded if each drug is before or after hospitalization. These forms make it possible to identify whether the drug was prescribed at said time of care transition and the occurrence of discrepancies in medications and drug interactions, facilitating the definition of therapeutic behavior.

The Interview Guide was created to guide the collection of MHPM with questions that help fill out the fields present in the FCMA.

Evaluation of instruments

The four instruments were evaluate through a panel of experts, later by a pilot study and, finally, in the clinical practice. The panel of experts evaluated the terms and concepts used in the construction of the presented instruments, with the help of the Delphi technique. The panel was conducted through a round of questionnaire response, followed by a round of analysis of responses. Following this analysis, a face-to-face meeting was held, followed by a round of analysis of the data obtained and the suitability of the instruments to serve it.[18,13]

In order to participate in the panel, four specialists were invited, who met the following criteria: having at least the title of Master and having experience in hospital services acting in the area of patient safety and/or developing clinical activities. The specialists were recruited through telephone contact and received an official invitation, in word processor form, through electronic correspondence.

After agreeing to participate in the panel, the experts received the questionnaire in word processor form, through electronic correspondence, with the information that they would have one month to analyze the four instruments together. After completion, the specialists also returned the questionnaire through electronic correspondence.

The experts evaluated 340 items by means of at least three of the following: "Initial Approach Good Practice", "Compatible with Initial Approach", "Important for Concomitant Medication", "Relevant for Accompanying Pediatric Patients" and "Clear Language and Correct Terminology". The scores were rated on a scale from 1 to 5, where 1 meant No and 5 meant Definitely yes[19]. Suggestions were solicited from text specialists, specifically when they disagreed or did not fully agree with the translation presented in the item evaluated (Table 1).

Table 1. Example of item evaluated by panel

Clinical audit chart review form
1. Ward in which the patient is hospitalized
1.1. Data 1 is important for the clinical audit of the medication reconciliation process
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1 2 3 4 5

The responses of the specialists were analyzed and items with a mean score equal to or above 3.25 were considered approved[18]. The Pearson correlation coefficient was used to test the correlation between the doubts and suggestions record and the low score values.

A meeting with researchers and experts was conducted to evaluate the items with a grade below 3.25 after receiving a score of less than or equal to two by some of the experts and/or by those who presented doubts or suggestions. At this meeting, each item was discussed openly, until a consensus was reached.

Immediately after they were changed, the instruments were tested in a pilot study to evaluate the applicability in the context of Brazilian hospitals and the feasibility of carrying out the study. It was verified if the instruments made it possible to fill data in its completeness.

Finally, the instruments were evaluated in clinical practice. This application aimed at comparing the collection of the best possible history of medications (MHPM) performed by the pharmaceutical researcher with the collection of primary drug history (HPM). The MHPM collected by the pharmaceutical researcher was compared to HPM collected by physicians, including residents, and nurses.

Patients younger than 18 years of age hospitalized and/or transferred internally to one of the five units included in the study were included in the evaluation in the clinical practice, provided that the person reporting the use of at least one medication prescribed by a physician. Patients who did not use medication at the time of hospital admission were excluded; patients who were hospitalized for less than 24 hours; patients who have undergone a new internal transfer less than 24 hours after an admission or internal transfer; patients who were transferred internally without being included in the study at the hospital admission stage, except for those who were transferred from neonatal wards; patients transferred from another hospital; and patients who went in and out during the weekends.

After collecting the informed consent of those responsible for the participants and the consent of the participants with the ability to understand and assent, for participation in the study, all the charts were reviewed using the FRPAC instrument; to obtain the HPM, an interview was conducted with those responsible study participants using the guide to the MHPM collection interview.

The results obtained by MHPM were compared with the results obtained in HPM, considering the following variables: name of medications, number of medications; number of doses of drugs; frequency of use; number of administration routes, record of PRM and record of interventions. The nonparametric test of paired samples of *Wilcoxon-Mann-Whithey* was used for the comparison.[20]

All ethical requirements established by Resolution 466/2012 of the National Health Council (CNJ) were respected and this study was approved by two Research Ethics Committees (CEP) with the CAAE numbers 24520013.6.0000.5240 and 24520013.6.3001.5269.

RESULTS

After elaboration, the four instruments were sent to the panel of experts in two stages. In the first step, the answers were sent via electronic address. The experts then attended the second panel stage for a consensus meeting. All the specialists were pharmacists, had professional experience in hospital services and developed some clinical activity with the patient, but only one participated in the implementation of medication reconciliation in their service (25%) (Table 1).

Table 1. Characterization of the members of the specialists panel

Characteristics of panel participants	N	%
Gender		
Female	3	75
Male	1	25
Age in years old, mean (range)	38.5 (33-44)	
Formation		
Master's degree	4	100
Doctor's degree	1	25
Professional experience		
Hospital services	4	100
Teaching	3	75
Professional experience time, average (range)	16 (8-24)	
Professional performance		
Patient safety	3	75
Hospital clinical functions	4	100
Pharmaceutical attention	1	25
Pharmacy clinic	3	75
Drug conciliation	1	25
Clinical research	1	25
Pharmacovigilance	2	50
Pediatric practice	2	50

N = Number of participants; % = Percentage

The mean score obtained by all the items evaluated in the panel of experts was 4.40 (standard deviation, SD = 0.30), above the stipulated average of 3.25, which was considered necessary for approving the items. The Interview Guide obtained the lowest mean score among the four instruments evaluated, 4.04 (standard deviation, SD = 0.60). The lowest average score among the evaluated instruments was 3.50 (standard deviation, SD = 1.29) for the item Initial approach good practice in the Interview Guide and the highest was 4.88 (standard deviation, SD = 0.54) for the Important item for medicinal reconciliation, the FRMTI (Table 2).

Table 2. Average score obtained on responses from the first stage of the specialists panel

Instrument/ Question	N	Mean (SD)
FRCPA		
Important for medication reconciliation	40	4.73 (0.78)
Relevant to accompanying pediatric patients	32	4.5 (0.87)
Clear language and correct terminology	28	3.64 (1.62)
Total	100	4.29 (0.57)
FCMA		
Important for medication reconciliation	92	4.63 (1.05)
Relevant to accompanying pediatric patients	80	4.48 (0.93)
Clear language and correct terminology	76	4.61 (1.02)
Total	248	4.57 (0.08)
FCMTI		
Important for medication reconciliation	76	4.88 (0.54)
Relevant to accompanying pediatric patients	64	4.55 (0.97)
Clear language and correct terminology	64	4.69 (1.07)
Total	204	4.71 (0.17)
Interview Guide.		
Initial approach good practice	4	3.50 (1.29)
Compatible with initial approach	4	3.75 (0.96)
Important for medication reconciliation	128	4.69 (1.11)
Relevant to accompanying pediatric patients	128	4.69 (1.18)
Clear language and correct terminology	128	3.59 (1.56)
Total	392	4.04 (0.60)
TOTAL	944	4.40 (0.30)

N = Number of questions; SD = Standard Deviation; FRPAC = Clinical Audit Report Review Form; FCMA = Admissions Drug Conciliation Form; FCMTI = Internal Transfer Medication Conciliation Form.

The specialists recorded thirteen (3.8%) doubts and thirty-three (9.7%) suggestions for the 340 items analyzed. The correlation between the doubts and suggestions record and the low score values and the absence of answers by the participants for the items analyzed were tested. For the doubts recorded, correlation was significant for all questions ($p < 0.000$), except for the item "Compatible with initial approach", for which no doubt was registered by the participants. For the record of suggestions, the only significant item ($p < 0.000$) was "Clear language and correct terminology" (Table 3).

Table 3. Correlation between record of doubts and suggestions and low score values obtained by the answers or absence of answers in the first stage of the spealists panel

Question/ Records	Doubts		Suggestions	
	Pearson's Correlation	(2 ends)	Pearson's Correlation	(2 ends)
Initial approach good practice	.a*	0.000	-0.408	0.495
Compatible with initial approach	.a	.	.a	.
Important for medication reconciliation	-0.304**	0.000	-0.075	0.169
Relevant to accompanying pediatric patients	-0.225**	0.000	0.003	0.956
Clear language and correct terminology	-0.229**	0.000	-0.350**	0.000

Pearson's Correlation

**. Correlation is significant at the 0.01 level (2 ends).

* Correlation is significant at the 0.05 level (2 ends).

a. It is not possible to calculate why at least one of the variables is constant.

The consensus meeting with the specialists allowed the improvement of the translated instruments. The main improvement obtained was the change in the item "Clear language and correct terminology" for the different items of all the instruments.

Pilot study

Pilot study took place in April 2014 and lasted nine days, in which instruments FRPAC, FCMA and Interview guide were applied in nine pediatric patients, who were admitted to three hospitalization units, a general pediatric unit, one for infectious diseases and one for pediatric surgery. This stage indicated the need for adjustment in the three instruments evaluated and the FCMTI was modified based on the FMCA.

The FRPAC was readapted and now it has three columns for the HPM registry, given the possibility of registering more than one HPM. There was practical difficulty in the simultaneous use of the interview guide and the FCMA, since the order of the questions were inadequate and did not follow the logic of filling out the FCMA. As a solution, we decided to reorganize the questions in the guide in three subjects: questions about the participant, about each drug and about other medications in order to improve the filling of the FCMA. It was found that unintentional discrepancies and errors were overlapping in FCMA. To resolve this issue, the field for error logging of FCMA and FCMTI forms has been removed.

Clinical practice

FRPAC, FCMA and the Interview guide were applied in clinical practice, over the course of 75 days between May and September 2014. During the study period, 176 patients were admitted to the hospital. Of these, 64 patients did not meet the inclusion criteria. Of the 112 eligible patients, those responsible for them were not present to consent to the participation of seven patients and 25 patients did not consent or withdrew their consent. It was not possible to reconcile medications from 39 patients, since there was an interval longer than one day between admission and the availability of the female pharmaceutical researcher to apply the research.

The study was performed with 41 participants at the time of hospital admission, two of whom had undergone the evaluation of the instruments in the pilot study re-hosted. Participants were admitted to five hospitalization units, of which two were general pediatric units, one for infectious diseases, two intensive units and one for pediatric surgery.

In some cases, more than one HPM has been identified for the same patient. A total of 41 MHPMs were collected with 47 HPM collected. Of these 47 HPM, 46 were collected by physicians, with 38 residents, and one per nurse. The eight non-resident doctors and the nurse were called from the staff.

In the comparison of the results obtained by the MHPM collection with the HPM obtained with the medical category, it was possible to observe a statistically significant difference (P <0.000) for all variables (Table 5).

In the comparison between MHPM with HPM collected by the resident grouping, a statistically significant difference (P <0.000) was observed in the variables of number of drugs, doses, frequency of use, routes of administration, PRM registration and registry of interventions (Table 5).

In the comparison of the results obtained by the MHPM collection with the HPM results obtained by the grouping of *staffs* a significant difference (P <0.05) was found for the variables number of drugs, doses, frequency of use, routes of administration (Table 5).

In the comparison of the results obtained in MHPM with HPM collected by the nursing category, no significant difference was identified for the only item registered: name of medication (Table 4)

Annex 1 shows the forms resulting from any evaluation process.

DISCUSSION

Medication reconciliation is an important strategy for reducing medication errors in care transition.[3] A study in pediatric population has identified insufficient information on the reconciliation of medications and it is known that it may not be appropriate to use medications reconciliation instruments for adults in pediatric patients.[2]

Construction of instruments

The instruments constructed differ from those already in existence, since they present some items related to pediatric patients, such as the options for filling out those responsible for the interviewee, since the interview of pediatric patients occurs, most often with the mother and the father; and the item preparation volume, since many of the medications for this age group are oral solutions or suspensions. In addition, in the proposed instruments the identification and classification of discrepancies occurs in FCMA and FMCTI and not in recording instruments.

Evaluation of instruments

The four instruments constructed were evaluated by a panel of specialists, using the Delphi technique. This panel allowed for advancing the language and for the consequent refinement of the instruments, avoiding, for example, ambiguities. In addition, the specialists contributed to the compatibility of the instruments with the reality of the institutional culture

Table 4. Comparison of the median registry of the best possible history of medications (MHPM) collected by the pharmaceutical researcher and the primary history medications (HPM) collected by different categories and professional groupings

Variables	Researcher Pharmaceutical (n = 41)	Professional category		Professional grouping	
		Doctor (n=46)	Nurse (n=1)	Staff (n=9)	Resident (n=38)
Name of Medication	5.12 (2.78)	2.07 (2.04) *	3 (0.00)	2.00 (1.32)**	2.11 (2.17) *
Number of doses of medications	5.12 (2.78)	1.17 (1.66) *	0	0.33 (0.71)**	1.34 (1.74) *
Use frequency number	5.12 (2.78)	1.17 (1.77) *	0	0.44 (0.88)**	1.32 (1.88) *
Route of administration numbers	5.12 (2.78)	0.09 (0.35) *	0	0.11 (0.33)**	0.08 (0.36) *
Information sources	5.20 (2.82)	0.57 (0.5) *	0	0.22 (0.44)**	0.63 (0.49)
PRM record	2.49 (2.36)	0*	0	0	0*
Register of Intervention	2.00 (1.97)	0.22 (0.42)*	0	0.22 (0.44)	0.21 (0.41)*

Wilcoxon-MammWhithey
a. Test performed from the median of the results and the results are presented by the mean and the standard deviation.
* The difference is significant at the 0.000 level.
** The difference is significant at the 0.05 level.
PRM = drug related problem.

of Brazilian hospitals. A panel of specialists with the Delphi technique was also used in another three studies in the area of patient safety for adaptation of instruments and questionnaires and for the development of indicators.[21-23]

The pilot study, based on national work on medication reconciliation with similar objectives,[24,25] indicated the need for adjustments. The reallocation of the questions in the MHPM interview guide to facilitate its simultaneous use with the FCMA and the increase in the number of columns for HPM registration were examples of modifications made to enable the applicability and completeness of the instruments.[26-27]

An American study concluded that physician-initiated medication reconciliation from HPM was not enough to prevent damage in pediatric and young adult chronic patients[28].

According to the literature, an MHPM, the cornerstone of medication reconciliation, is superior to an HPM because it includes multiple sources of information and the pharmacist is the gold standard of medication reconciliation.[7,29]. In the clinical practice evaluation, it was identified that the MHPM collected by the pharmaceutical researcher at the time of hospital admission presented significant differences in relation to the collection of HPM recorded by the other professionals for almost all variables analyzed. This is consistent with the literature because the superiority of MHPM in relation to HPM was also identified in a study in which 33% of patients (interquartile range 4-56%) had one more drug before hospital admission, not identified by the HPM.[2] Thus, it was considered that the instruments constructed when evaluated in clinical practice were valid for pediatric patients.

The construction of instruments for the conciliation of medications for pediatric patients - population susceptible to medication errors - based on the evaluation by a panel of specialists, a pilot study and the application in clinical practice are important contributions of the present study. Kaushal identified that approximately 6.0% of the medical prescriptions presented medication errors and, in three cases, the prevalence of patients who suffered some AMI ranged from 2.3% to 6.0%.[30] It can also be considered that, when applied in clinical practice, at the moment of hospital admission, the constructed instruments presented significant differences of MHPM in relation to HPM.

Among the limitations of the study is the reduced number of participants due to losses. In addition, the study had the fact that patient was not included in the study at the hospital admission stage as one of the exclusion criteria at the time of internal transfer. Due to this exclusion criterion, at the time of internal transfer, participants were not admitted to the pilot study and, in clinical practice, the number of participants was low, so it is not possible to evaluate the instruments at this time. Therefore, in the pilot study, the modification of record overlap of unintentional discrepancies and errors in the FCMTI performed was executed based on the change made in the FCMA.

Hospital discharge was not contemplated by this study, since this transition moment of care presents a large possibility of loss of participants, since there is no discharge planning in the hospital studied. It would be interesting to construct and "evaluate the instruments for this moment of care.

Finally, the instruments for the reconciliation of drugs were constructed and evaluated in a single specialized hospital with pediatric patients, so their outcome may not be generalizable. It would be interesting to construct and evaluate the instruments for reconciling medications in other services, contexts and groups of patients.

CONCLUSION

The forms of reconciliation of medications were constructed anevaluate for pediatric patients in the studied institution. Their allocation in a visible and accessible place in medical records of similar institutions would allow the availability of relevant information about the medications in use to professionals involved in the care of hospitalized children.

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Contributors

DDCG and WVMJR: Conception of project or analysis and interpretation of data. DDCG, WVMJ and SCGJR: Article writing or critical review of the relevant intellectual content. DDCG, WVMJ and SCGJR: Final approval of the version to be published. DDCG: Responsibility for all job information, ensuring the accuracy and integrity of any part of the work. WVMJR (deceased)

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Conflicts of Interest

The authors declare no conflicts of interest.

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Medical Record Review Form for Clinical Audit

Research: Evaluation of discrepancies in medication reconciliation in pediatric patients in a specialized public hospital in the State of Rio de Janeiro

Medical Record Review Form for Clinical Audit

Participant's Initials: _____ Registration number in the research: _____ Participant's ward: _____

Admission and base diagnosis: _____

Admission: Date: ___/_____/_____and Time: _____ HPM collection: Date: _____/_____/____and Time: _____

Collection of primary history of medications participants are using (HPM)				
No.	Data	Type		
1	Professional category/Specialty of the person collecting the history of medications use			
No.	**Data**	**Number**		
2	Number of medications participant is using before admission (prescribed and prescription-free)			
3	Information recorded on medications participant is using before hospitalization:			
3.1	name			
3.2	doses			
3.3	frequency of use			
3.4	administration route			
No.	**Data**	**Check**		
4	Information source used by the person collecting the history of medications use: participant's chart doctor in charge records of ambulatory pharmacy labels of medication bottles person responsible for the participant and/or their companion	(NA)	(NA)	(NA)
5	Period after admission when collection of primary history of medications use was done <4h 4-8h 8-24h >24h	(NA)	(NA)	(NA)
6	Interviewee relationship: mother father other absent	(NA)	(NA)	(NA)
No.	**Data**	**Yes/No**	**Yes/No**	**Yes/No**
7	Any medication related issue (MRI) was recorded?			
7.1	If so, which one?			
No.	**Data**	**Yes/No**	**Yes/No**	**Yes/No**
8	Any intervention done with the participant was recorded?			
8.1	If so, which one?			

Medical chart review: Date: _____/_____/_____ and Time: _____ Researcher: _____

Admission Medication Reconciliation Form (FCMA)

Research: Evaluation of discrepancies in medication reconciliation in pediatric patients in a specialized public hospital in the State of Rio de Janeiro

Admission Medication Reconciliation Form (FCMA)

Participant's initials: _____ Registration number in the research: _____ Admission and base diagnosis: _____

Participant's ward: _____ Date of birth: ____/____/____ Gender: _____ Weight: _____ Height: _____ Body surface: _____

Relationship of the respondent*: In HPM: _____ In MHPM: _____ Name/Telephone number of the physician in charge: _____

Adverse reaction prior to hospitalization: ( ) No ( ) Yes. Which one(s): _____

Allergy prior to hospitalization: ( ) No ( ) Yes. Which one(s): _____

Medication (name, presentation, pharmaceutical form, prescription volume)	Dose used (mg/mL/Drops)	Route	Frequency of use	Date/Time of use before admission	Source**	Prescribed in transfer	Discrepancy			Drug interactions		Resolution
						Yes/No	Yes/No	Class***	Class****	Yes/No	(medicaments involved*** / degree*****	
Prescribed medications												
Discontinued medications												

* Relationship: mother, father, others or absent; ** Source: medical records (1); pharmacy (2); physician (3); visits (4); and/or responsible/accompanying person (5); *** Intentional classification (1); undocumented (2) or unintentional (3); **** Classification: omission (1); action (2); dose difference (3); track difference (4); difference in frequency of use (5) and/or different drug (6); ***** Classification: Mild (1); Moderate (2) or Severe (3); ****** Significance: notifiable (1, 2 and 3); (4 and 5).

Admission of participant: Date: ___/____/____ and Time: ____ Reconciliation: Date: ___/____/____ and Time: ____ Researcher: _____

Internal Transfer Drug Reconciliation Form (FCMTI)

Research: Evaluation of discrepancies in medication reconciliation in pediatric patients in a specialized public hospital in the State of Rio de Janeiro

Internal Transfer Drug Reconciliation Form (FCMTI)

Participant's initials: ____________ **Registration number in the research:** ______ **Admission and base diagnosis:** ____________

Participant's ward: ____________ **Date of birth:** ___/___/___ **Gender:** ______ **Weight:** ______ **Height:** ______ **Body surface:** ______

Adverse reaction prior to hospitalization: ( ) No ( ) Yes. Which one(s): ____________

Allergy prior to hospitalization: ( ) No ( ) Yes. Which one(s): ____________

Type of* Medication	Medication	Dose used	Route	Frequency/ of use	Prescribed in transfer	Discrepancy			Drug interactions		Resolution
					Yes/No	Yes/No	Class**	Class***	Yes/No	[illegible]	

* Type: prior to hospitalization (1) or after hospitalization (2); ** Classification: intentional (1); undocumented (2) or unintentional (3); *** Classification: omission (1); action (2); dose difference (3); route difference (4); difference in frequency of use (5) and/or different drug (6); **** Classification: Mild (1); Moderate (2) or Severe (3); ***** Significance: reportable (1, 2 and 3); (4 and 5).

Transfer of participant: Date: ___/___/___ **and Time:** ______ **Reconciliation: Date:** ___/___/___ **and Time:** ______ **Researcher:** ____________

Guide to the MHPM Collection Interview

Search:

Evaluation of discrepancies in medication reconciliation in pediatric patients in a specialized public hospital in the State of Rio de Janeiro

Guide to the MHPM Collection Interview

Interview Introduction

Hi, my name is ***Diana Graça***, I am a pharmacist and hospital employee and Master student. I am working to learn about the medications that children use at home before coming to the hospital. Present the Informed Consent Form (ICF)

Interview Questions

About the Participant

Did you bring medications from home? Can I see them?

What is his/her birth date, weight, height, body surface?

Did you go through an interview about the medications? What is the date and time of the interview?

Is his/her doctor from the institution? What is the name and telephone number of the treating physician? (if not institution)

Did he/she have any problems with any medications? If yes, what happened when he or she used the medication?

Is he or she allergic to any medications? If yes, what happened when he or she used the medication?

About each medication

What medications does he or she use?

What is the name of the medication (brand or generic name), presentation, pharmaceutical form and volume of preparation?

How much does he or she use? (dose, the number of tablets, capsules, and so on)

Did the medication work?

Did the medication cause any problems? Which ones?

How many times and when does he or she use it?

When was the last time he or she used it?

About other medications

Does he or she use medications on his/her own which were not prescribed by the doctor? Which ones?

Does he or she take any vitamin? Which ones?

Does he or she drink any tea/natural product? Which one and what for?

Does he or she take any food supplements? Which ones?

Does he or she use patches or products to get through the skin? Which ones?

Does he or she have medications implanted? Which ones?

Does he or she use any eye drops or ear drops? Which ones?

Did any doctor tell he or she to stop taking some medication before this procedure? (if the intern participant to do any surgery (procedure)

Does any medication have a deadline? (Antibiotics, corticoids)

About used medications when needed:

How often does he or she use the medication?

In what situations is it necessary to use the medication?

Conclusion of the Interview:

Do you have anything to add that you have not been asked and that you think it is important to talk about?