ORIGINAL ARTICLE
DOI: 10.15343/0104-7809.202650e19972026I
ISSN: 1980-3990

# Telepharmacy at hospital discharge: pharmaceutical practice in dehospitalization – a pilot study

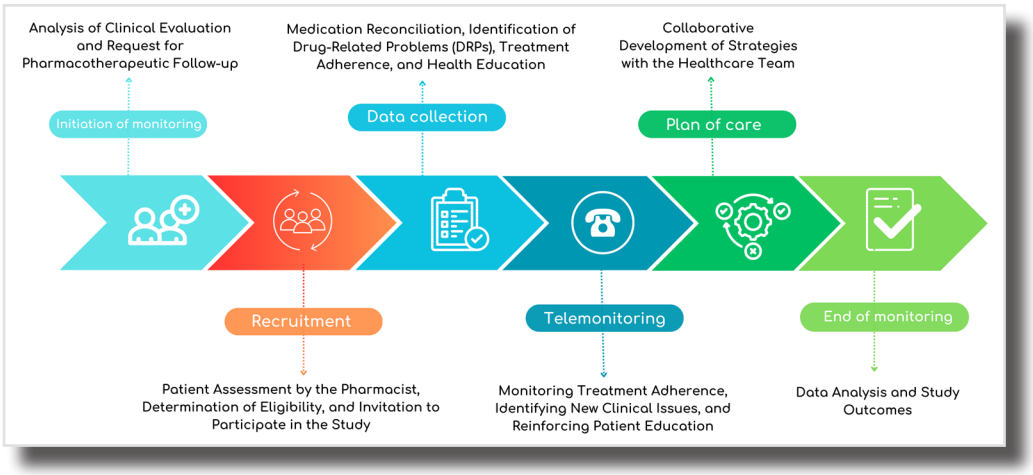
**Julia Talarico Matos**[1] **Ellen Camurça Sampaio Corrêa**[1] **Isabela de Lima Martins**[1]
**Valesca Leitão Costa Gomez**[1] **Andrea Teixeira de Almeida Alves**[1] **Zilda de Santana Gonsalves**[1]

[1]Instituto Nacional de Traumatologia e Ortopedia – INTO. Rio de Janeiro/RJ, Brasil.
E-mail: juliatalarico.farmacia@gmail.com

**Highlights**

- *Pilot study conducted at the national reference institute in traumatology and orthopedics.*
- *Structuring of pharmaceutical services in institutional dehospitalization.*
- *Pharmaceutical telemonitoring as a post-discharge follow-up strategy.*
- *Care transition as a critical point for patient safety.*
- *Integration of the pharmacist in the qualification of multiprofessional care.*

**Graphical Abstract**




**Abstract**

Home Care (HC) is a modality of health care within the Unified Health System (SUS) that enables the continuity of treatment at home. The pharmacist's participation in HC aims to ensure the rational use of medications, optimize treatment adherence, and identify, prevent, and minimize drug-related problems. This pilot study aimed to structure the actions of pharmaceutical services to meet the demands of the Home Care Area (ADOMI) of the Instituto Nacional de Traumatologia e Ortopedia, located in the municipality of Rio de Janeiro, Brazil. This is a longitudinal pilot study with a quantitative approach, conducted between June and October 2025. A total of 22 participants with an active registration in the institution's home care area who met at least two of the following criteria were included: use of four or more medications, presence of associated comorbidities, and/or presentation of adverse drug reactions during the hospitalization period. Data collection was carried out using a semi-structured questionnaire administered individually to participants at the moment immediately prior to hospital discharge, followed by telemonitoring after 15 days, and through analysis of the electronic medical records. The results may suggest the relevance of pharmaceutical practice in care transitions, with emphasis on the identification of 55 drug-related problems. It is suggested that the pharmacist's inclusion in home care may contribute to patient safety during care transitions, potentially qualifying multiprofessional care and strengthening the integrality of health care.

**Keywords:** Home Care. Pharmaceutical Care. Medication Reconciliation. Adverse Effects. Remote Patient Monitoring.

**Associate Editor:** Edison Barbieri
**Reviewer:** Thuane Sales Gonçalves
**Reviewer:** Jaqueline Gleice Aparecida de Freitas
Mundo Saúde. 2026,50:e19972025
O Mundo da Saúde, São Paulo, SP, Brasil.
https://revistamundodasaude.emnuvens.com.br

**Received:** 26 march 2026.
**Accepted:** 08 june 2026.
**Published:** 26 june 2026.

## INTRODUCTION

Home Care (HC) is a modality of health assistance aimed at patients whose health conditions can be managed in a home environment. In the 1990s and 2000s, conceptions and experiences in public health units contributed to the evolution of this care modality[1]. Within the Unified Health System (SUS), HC is regulated by Ordinance No. 825/2016, which redefines its guidelines and care modalities, and by Ordinance GM/MS No. 3,005/2024, which provides for the organization and operation of the Home Care Service (SAD) and the Melhor em Casa Program (PMC)[2,3]. This process must be planned in an integrated manner, with coordinated care within a network, encompassing the entire care pathway of the user. This approach contributes to more humanized care, with a focus on health education, hospital bed management, health planning, and the strengthening of patient protagonism in self-care[4].

Dehospitalization constitutes one of the main entry points for HC in the SUS, representing a safe care transition process from the hospital to the home environment, whose purpose is to ensure the continuity and integrality of care following hospital discharge[5]. The dehospitalization process goes beyond the simple anticipation of hospital discharge; it involves prior, strategic, and multiprofessional planning. In this sense, it constitutes an essential link between hospital services and HC, ensuring that the care provided at home is a qualified extension of the care initiated in the hospital environment[1]. Multiprofessional performance in this process is fundamental to ensuring a safe and effective transition. The integration of different health professionals favors discharge planning and continuity of care, where the exchange of practices and knowledge enables comprehensive care. In the dehospitalization process, this integrated work is associated with reductions in length of hospital stay, hospital costs, and readmissions, in addition to improving the quality of care[6].

In the context of multiprofessional care, the pharmacist's actions stand out, whose contribution aims to ensure the safety of medication use. Clear and detailed guidance at the moment of hospital discharge is crucial to mitigate Drug-Related Problems (DRPs) and complications in the patient's clinical outcome[7]. Ideal pharmacotherapy must meet four fundamental criteria: necessity, adherence, effectiveness, and safety. Thus, the patient must use only necessary medications, understand and adhere to the treatment, achieve the expected therapeutic results, and not present problems arising from medication use or worsening of pre-existing conditions[8]. The provision of pharmaceutical care in the dehospitalization process involves a series of measures. Among these, advance discharge planning stands out, including assessment of pharmacotherapy and clinical conditions, guidance on continuity of treatment at home, and the adequacy of necessary resources in the care process. Implementation of remote monitoring strategies and home visits are also essential components to ensure that patients receive the necessary support during home care. These actions must be planned and structured in advance and involve the family in the orientation and preparation process for care transitions. In this scenario, the pharmacist can contribute to reducing risks associated with inappropriate medication use, preventing readmissions, promoting treatment adherence, and managing health conditions appropriately. Thus, the development of structured pharmaceutical services – such as medication reconciliation, pharmacotherapeutic follow-up, health education, and telemonitoring – is fundamental for improving care quality[9].

According to Resolution No. 727/2022 of the Federal Pharmacy Council (CFF), Telepharmacy is a Clinical Pharmacy activity intercepted by Information and Communication Technology (ICT), performed remotely, in real time (synchronous) or asynchronously, for purposes aimed at health promotion, protection, monitoring, and recovery, as well as for the resolution of pharmacotherapy-related problems. This practice has gained prominence as an innovative strategy for expanding access and continuity of care, due to its capacity to provide pharmaceutical care effectively – with the advantage of ensuring accessibility to a wide range of patients where geographic barriers and functional limitations may compromise in-person follow-up[10,11]. Recent evidence indicates that telepharmacy may contribute to improved clinical outcomes by strengthening the bond between professionals and users and optimizing the use of health resources, consolidating itself as a strategic tool for the provision of pharmaceutical services. This service contributes to patient safety and the qualification of care practices, especially for those residing in remote locations or in situations where in-person contact is not possible[12]. In this scenario, this study aimed to structure the process for providing pharmaceutical services in the context of dehospitalization, including pharmacotherapy review of the discharge prescription, medication reconciliation, pharmacotherapeutic follow-up, and patient telemonitoring after hospital discharge.


Mundo Saúde. 2026,50:e19972026
DOI: 10.15343/0104-7809.202650e19972026I

## METHODOLOGY

***Study design***

This is a longitudinal pilot study with a quantitative approach, focused on the identification of DRPs, pharmacotherapeutic follow-up, and development of health education actions for eligible patients in the Home Care Area (ADOMI) of the Instituto Nacional de Traumatologia e Ortopedia (INTO), between June and October 2025.

***Study setting***

The study was conducted at INTO – a national reference center for orthopedic surgical treatment – located in the municipality of Rio de Janeiro. ADOMI, created in 2004, operates as a home care strategy to ensure the continuity of orthopedic treatment. The service organizes care modalities according to territorial conditions: telemonitoring and multiprofessional teleconsultations for patients residing in risk or conflict-affected areas; home visits for patients residing in locations up to 60 km from the institute. The service team is multiprofessional, comprising administrative staff, physiotherapists, nurses, nursing technicians, and social workers, who work in an integrated manner to support care[4].

***Participant selection and recruitment***

Participants were recruited through the analysis of dehospitalization requests recorded in the SoulMV® hospital management system and through referrals from ADOMI's multiprofessional team indicating the need for pharmacotherapeutic follow-up. Each case was individually assessed by a pharmacist who applied the pre-established inclusion criteria. The first contact took place in person, at the bedside, at the moment immediately prior to hospital discharge, when patients were invited to participate in the study and, upon acceptance, signed the Informed Consent Form (ICF). It is noteworthy that the pharmacist is not formally included in the institutional hospital discharge protocol, which reinforces the relevance of strategies that expand their role in care transitions. On this occasion, the pharmacist provided initial guidance on the correct use of medications, identified possible DRPs, and explained the pharmacotherapeutic follow-up modality to be offered after discharge. Initially, the sample was estimated to comprise approximately 54 participants, based on the average number of home care appointments conducted in 2024 (251 patients), with a projected average of 18 monthly appointments during the recruitment period of the study.

***Inclusion and exclusion criteria***

Participants over 18 years of age who met at least two of the following criteria were included: use of four or more medications (polypharmacy), history of Adverse Drug Reaction (ADR) during hospitalization, and/or presence of associated comorbidities. However, participants who were discharged on weekends, as well as those with whom telephone contact could not be established, were excluded. As a strategy for managing follow-up losses, up to two telephone contact attempts per day were made over a maximum period of two consecutive days. In the absence of response after this interval, participants were classified as follow-up losses.

***Assessment and monitoring***

*First stage – Initial Assessment:* The aim was to assess participants' prior relationship with medication use at home, including aspects related to knowledge, organization, and management of pharmacotherapy. A structured form was used in this phase, adapted from the model proposed by Souza *et al.*[13], with adjustments aimed at the home care context and the needs of pharmacotherapeutic follow-up. The process of constructing and adapting the instrument was also grounded in theoretical references, including adaptation of elements from the Morisky–Green test[14], used to assess adherence to pharmacotherapeutic treatment. The proposed instrument consists of closed questions aimed at collecting information on lifestyle habits, adherence and access to medications, as well as the identification of DRPs[8] and possible difficulties related to home use. The instrument also presents open fields for collecting sociodemographic data, health conditions, and medication storage at home, and is available in Supplementary Material 1 of this study. It is noteworthy that the questionnaire underwent updates throughout the conduct of the study, reflecting the dynamic nature of pharmacotherapeutic follow-up, and future validations are necessary to ensure its consistency and reproducibility.

*Second stage – Telemonitoring:* This was conducted via telephone contact approximately 15 days after hospital discharge. During this phase, treatment adherence was assessed, new intercurrences were identified, and orientations and additional interventions were reinforced. This interval was established with the aim of ensuring sufficient time for data collection within the stipulated follow-up period.

**Development of educational material**

The educational leaflet was developed by the authors based on technical-scientific knowledge and clinical experience in the field, with the aim of guiding patients on the safe use of medications, promoting treatment adherence, and preventing drug-related problems. The material was directed at patients in the process of hospital discharge, aiming to facilitate understanding of pharmacotherapeutic guidelines.

**Sociodemographic and pharmacotherapeutic analysis**

Sociodemographic analysis was conducted based on data extracted from the Patient Electronic Medical Record (PEP), available in the MVSoul® institutional management system, including variables such as age, sex, comorbidities, and other characteristics relevant to the study. The pharmacotherapeutic history was classified according to the Anatomical Therapeutic Chemical (ATC) classification system[15], which enabled the categorization of prescribed medications according to the system or organ of action, allowing the identification of use patterns and the analysis of the participants' pharmacotherapeutic profile. Data analysis was performed through descriptive statistics, considering the established criteria for the interpretation of results, presented in tables, graphs, and percentages. The study was approved by the Research Ethics Committee of INTO, in compliance with the guidelines of Ordinance No. 466/2012, under CAAE No. 86935125.1.0000.5273 and Opinion No. 7,810,984.

## RESULTS

After applying the inclusion and exclusion criteria and the eligibility analysis conducted by the pharmacist, 22 participants were effectively included in the study. Table 1 presents the sociodemographic profile of participants. The sample was predominantly composed of female individuals (n=18; 81.8%). The age distribution reveals concentration in the 60–79 years age group (54.5%), followed by the 40–59 years and 80 years or older groups (n=6; 27.3% and n=3; 13.6%, respectively), characterizing a profile composed of older adults. Regarding race/ethnicity, the majority of participants self-identified as White (n=14; 63.6%), while n=6 (27.3%) identified as Brown (mixed race) and n=2 (9.1%) as Black. Regarding marital status, the largest proportion were single individuals (n=7; 31.8%), followed by married (n=6; 27.3%), and widowed (n=5; 22.7%). The predominant religion was Catholic (n=10; 45.5%), with the remaining categories distributed among Evangelical (n=6; 27.3%) and Spiritist (n=3; 13.6%). Finally, regarding occupation/employment status, the highest frequency was observed in the employed category (n=8; 36.4%) and among homemakers (n=7; 31.8%), in addition to retirees/pensioners (n=5; 22.7%).

**Table 1 -** Sociodemographic profile of participants seen at a specialized traumatology and orthopedics unit in Rio de Janeiro, Brazil, 2026.

| Variable | Category | No. | % |
|---|---|---|---|
| **Sex** | Male | 4 | 18.2 |
| | Female | 18 | 81.8 |
| **Age group** | 18–39 years | 1 | 4.5 |
| | 40–59 years | 6 | 27.3 |
| | 60–79 years | 12 | 54.5 |
| | 80 or older | 3 | 13.6 |
| **Race/Ethnicity** | White | 14 | 63.6 |
| | Brown (mixed race) | 6 | 27.3 |
| | Black | 2 | 9.1 |
| **Marital status** | Single | 7 | 31.8 |
| | Married | 6 | 27.3 |
| | Domestic partnership | 1 | 4.5 |
| | Divorced | 3 | 13.6 |
| | Widowed | 5 | 22.7 |
| **Religion** | Catholic | 10 | 45.5 |
| | Evangelical | 6 | 27.3 |
| | Spiritist | 3 | 13.6 |
| | Other* | 3 | 13.6 |
| **Occupation / Employment status** | Employed | 8 | 36.4 |
| | Retired/Pensioner | 5 | 22.7 |
| | Unemployed | 1 | 4.5 |
| | Homemaker | 7 | 31.8 |
| | Other** | 1 | 4.5 |

Legend: *Unspecified religions; **INSS benefit (social security disability benefit).
Note: Percentages calculated based on the total number of participants (n=22).

Regarding geographic provenance, a predominance of participants from the Metropolitan Region of the state of Rio de Janeiro was observed (n=18; 82%), followed by the Coastal Lowlands (n=3; 14%) and the Costa Verde region (n=1; 4%). No representation of other state regions was recorded.

Table 2 presents the clinical profile and health conditions of the participants. A predominance of participants who underwent hip and knee surgical procedures was observed, both corresponding to 40.9% (n=9) of the sample. Polypharmacy was present in the majority of participants (95.5%; n=21). Regarding comorbidities, 72.7% (n=16) presented three or more associated clinical conditions, while 27.3% (n=6) had one or two associated comorbidities. Among the reported types of comorbidities, systemic arterial hypertension (72.7%; n=16) stood out, followed by type 2 diabetes mellitus (27.3%; n=6), obesity (22.7%; n=5), anxiety and depression (both 18.2%; n=4), rheumatoid arthritis (18.2%; n=4), and dyslipidemia (4.5%; n=1). Other clinical conditions corresponded to 22.7% (n=5), including hypothyroidism, asthma, chronic renal insufficiency, and Parkinson's disease.

Regarding medication access, the majority of participants obtained their medications through a combination of private pharmacy, SUS, and the Farmácia Popular Program (63.6%; n=14), followed by exclusive use of private pharmacy (27.3%; n=6). Exclusive SUS access was observed in 9.1% (n=2) of participants. Regarding hospital readmission, 13.6% (n=3) of participants were readmitted during the evaluated period, while 86.4% (n=19) had no readmissions. The observed readmissions were related to specific clinical events, including falls at home and post-operative infection.

**Table 2 -** Clinical Profile and Health Conditions of participants seen at a specialized traumatology and orthopedics unit in Rio de Janeiro, Brazil, 2026.

| Variable | Category | No. | % |
|---|---|---|---|
| **Surgical specialty** | Spine | 2 | 9.1 |
| | Hip | 9 | 40.9 |
| | Knee | 9 | 40.9 |
| | Elderly Trauma | 2 | 9.1 |
| **Polypharmacy** | Yes | 21 | 95.5 |
| | No | 1 | 4.5 |
| **Comorbidities** | None | – | – |
| | One or two | 6 | 27.3 |
| | Three or more | 16 | 72.7 |
| **Type of comorbidity** | SAH | 16 | 72.7 |
| | DM | 6 | 27.3 |
| | Obesity | 5 | 22.7 |
| | Dyslipidemia | 1 | 4.5 |
| | Anxiety | 4 | 18.2 |
| | Depression | 4 | 18.2 |
| | RA | 4 | 18.2 |
| | Other* | 5 | 22.7 |
| **Medication access** | SUS | 2 | 9.1 |
| | Farmácia Popular Program (FPP) | – | – |
| | Private pharmacy | 6 | 27.3 |
| | Private pharmacy and SUS/FPP | 14 | 63.6 |
| **Hospital readmission** | Yes | 3 | 13.6 |
| | No | 19 | 86.4 |

Legend: SAH: Systemic arterial hypertension; DM: Diabetes Mellitus; RA: Rheumatoid Arthritis.
Other*: Hypothyroidism (2); Asthma (1); Chronic Renal Insufficiency (1); Parkinson's disease (1).
Note: Percentages calculated based on the total number of participants (n=22).

Table 3 presents the distribution of medications used by participants prior to hospital admission, as well as medications prescribed at hospital discharge, organized by therapeutic group according to the ATC classification. A total of 144 medications used before hospitalization and 82 prescribed at discharge were recorded. Among the medications used prior to hospitalization, a predominance of Group C medications – Cardiovascular System (33%) was observed. Group N – Nervous System medications (29%) also stood out, which may be related not only to the treatment of neurological or psychiatric disorders, but also to the frequent use of medications for pain management, such as analgesics including opioids and neuromodulatory adjuvants.

**Table 3 -** Pharmacotherapeutic Profile of participants seen at a specialized traumatology and orthopedics unit in Rio de Janeiro, Brazil, 2026.

| Therapeutic Group | Pre-discharge N/% | At discharge N/% |
|---|---|---|
| A – Alimentary tract and metabolism | 27 / 19% | 3 / 3.7% |
| B – Blood and haematopoietic organs | 6 / 4% | 26 / 31.7% |
| C – Cardiovascular system | 47 / 33% | 5 / 6.1% |
| G – Genitourinary system and sex hormones | 1 / 1% | – |
| H – Systemic hormonal preparations, excluding sex hormones | 2 / 1% | – |
| J – Antiinfectives for systemic use | 2 / 1% | 4 / 4.9% |
| L – Antineoplastic and immunomodulating agents | 6 / 4% | – |
| M – Musculoskeletal system | 4 / 3% | – |
| N – Nervous system | 42 / 29% | 44 / 53.7% |
| R – Respiratory system | 4 / 3% | – |
| S – Sensory organs | 3 / 2% | – |
| **Total** | **144 / 100%** | **82 / 100%** |


Mundo Saúde. 2026,50:e19972026
DOI: 10.15343/0104-7809.202650e19972026I

Regarding the medications prescribed at hospital discharge – among the 82 medications prescribed – Group N – Nervous System stood out at 53.7% (n=44). The use of Group B – Blood and hematopoietic organs medications was also relevant at 31.7% (n=26), suggesting frequent use of anticoagulants, antianemics, or hematological function-related medications in the context of orthopedic conditions. The remaining groups had lower representation in the total medications used: alimentary tract and metabolism 3.7% (n=3), cardiovascular system 6.1% (n=5), and antiinfectives for systemic use 4.9% (n=4).

During pharmacotherapeutic follow-up, 55 DRPs were identified, with 39 identified in pre-discharge monitoring (home use) and 16 in telemonitoring. In pre-discharge monitoring, a higher frequency of DRPs related to "Adherence" (DRP 7) was observed, corresponding to 35.9% (n=14) of the total identified at this stage. The "Necessity" category represented 33.3% (n=13) of DRPs, with predominance of DRP 2 – unnecessary drug therapy, accounting for 25.6% (n=10), followed by DRP 1 – need for an additional medication, identified in 7.7% (n=3) of cases. DRPs related to "Safety" corresponded to 25.6% (n=10) of the total in the pre-discharge period, all classified as DRP 5 – presence of adverse drug reactions. No DRPs associated with the "Effectiveness" category were identified during this period.

**Table 4 -** Distribution of Drug-Related Problems (DRPs) in pre-discharge and telemonitoring of participants seen at a specialized traumatology and orthopedics unit in Rio de Janeiro, Brazil, 2026.

| DRP Monitoring | | | Pre-discharge | Telemonitoring |
|---|---|---|---|---|
| **Category** | **DRP Type** | **Classification** | **No./(%)** | **No./(%)** |
| **Necessity** | DRP 1<br>DRP2 | Need for an additional medication<br>Unnecessary drug therapy | 3 / (7.7%)<br>10/ (25.6%) | 3/ (18.8%)<br>1/ (6.3%) |
| *Subtotal* | - | - | **13/(33.3%)** | **4/ (25.0%)** |
| **Effectiveness** | DRP 3<br>DRP 4 | Ineffective medication<br>Medication with low dose | - | 2 (12.5%)<br>- |
| *Subtotal* | - | - | **-** | **2/ (12.5%)** |
| **Safety** | DRP 5<br>DRP 6 | Presence of adverse drug reactions<br>Medication with high dose | 10/ (25.6%)<br>- | 2/ (12.5%)<br>- |
| *Subtotal* | - | - | **10/(25.6%)** | **2/ (12.5%)** |
| **Adherence** | DRP 7 | Non-adherence (does not comply with) pharmacotherapy | 14/(35.9%) | 4/ (25.0%) |
| *Total* | | | 39 | 16 |

Legend: DRP (Drug-Related Problem).
Source: Adapted from Cipolle *et al.*[16]

In telemonitoring, DRPs were distributed between the "Necessity" and "Adherence" categories, both at 25.0% (n=4). In the "Necessity" category, DRP 1 – need for an additional medication was the most frequent, corresponding to 18.8% (n=3), followed by DRP 2 – unnecessary drug therapy, at 6.3% (n=1). Additionally, effectiveness-related DRPs were identified during telemonitoring, representing 12.5% (n=2) of the total, all classified as DRP 3 – ineffective medication. Safety-related DRPs also corresponded to 12.5% (n=2), linked to the presence of adverse drug reactions (DRP 5). Regarding the identified DRPs, situations such as incorrect medication use, questions about dosing, difficulties in organizing administration schedules, and potential risks of inappropriate medication use were highlighted. In these cases, the interventions performed focused on individualized guidance to participants regarding correct use, as well as communication with the care team for alignment of clinical approaches and reinforcement of orientations.

During data collection, interactions were established with the multiprofessional team, involving nursing, physiotherapy, and social work professionals. These interactions enabled the identification of clinical and care demands, favoring joint decision-making and alignment of care actions. The nursing team contributed especially in the participant recruitment stage, acting in the identification and flagging of participants with greater need for pharmacotherapeutic follow-up, thereby favoring the inclusion of participants with a profile compatible with the study objectives. Social work played relevant roles both before telemonitoring implementation and after it, by identifying vulnerabilities and social demands capable of directly interfering with the continuity of care, supporting the pharma-

cist in making more realistic decisions centered on the participant's needs. Physiotherapy contributed in a complementary manner to pharmacotherapeutic care by providing information on functional status, physical limitations, and evolution of participants' motor capacity. These clarifications enabled a more contextualized assessment of medication use, especially regarding mobility, pain, and functionality.

As a product of the developed actions, an educational material in the format of an informational leaflet was elaborated. The content covered guidance on correct and safe use, storage, and proper disposal of medications. The material was used as a support tool for pharmaceutical interventions, contributing to the standardization of orientations and the strengthening of health education actions. The material is presented in Figure 1.

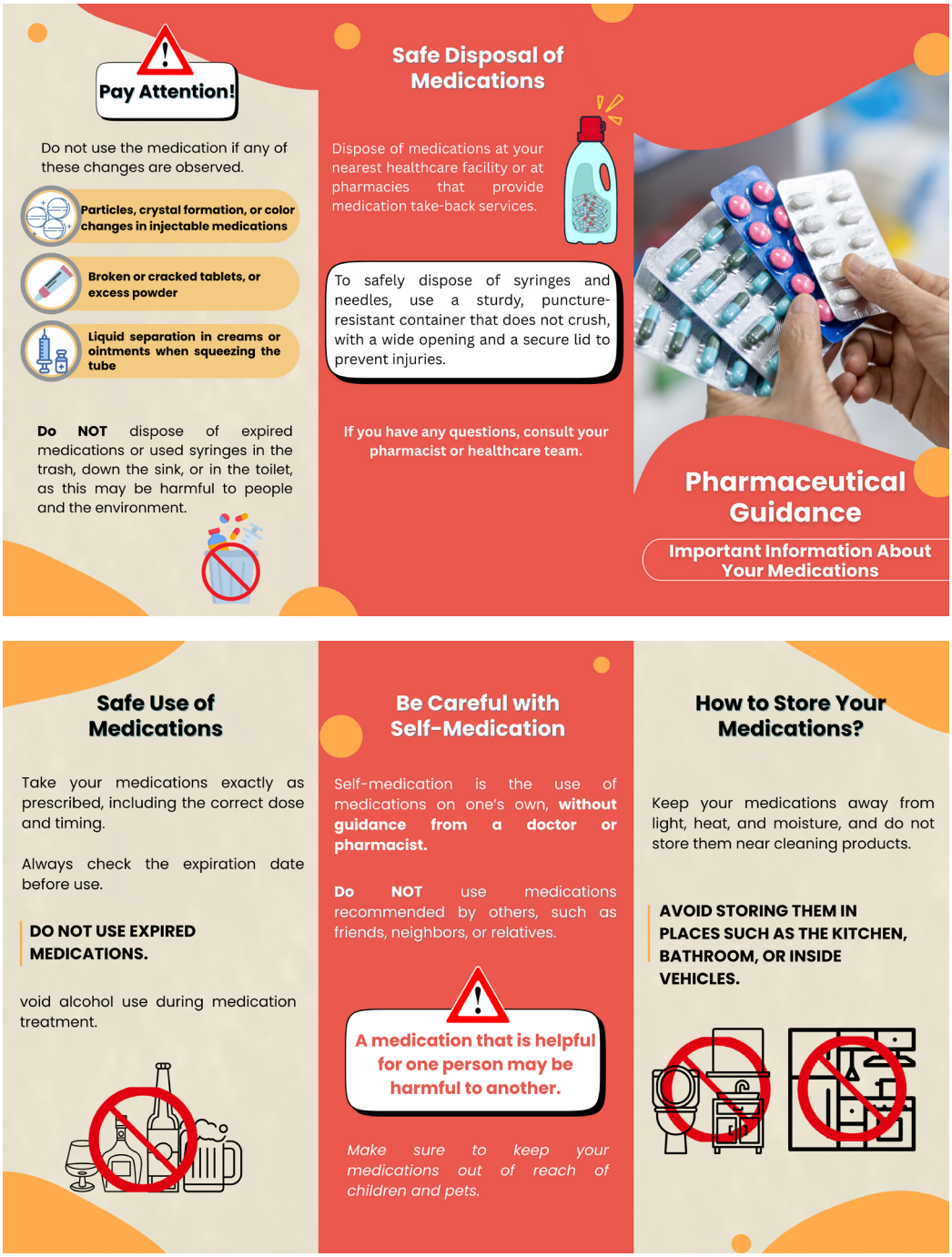



**Figure 1 -** Educational leaflet on the safe and rational use of medications distributed to participants seen at a specialized traumatology and orthopedics unit in Rio de Janeiro, 2026.


Mundo Saúde. 2026,50:e19972026
DOI: 10.15343/0104-7809.202650e19972026I

## DISCUSSION

The results reveal a sociodemographic profile composed predominantly of older adults, characterized by a high prevalence of comorbidities and polypharmacy. These findings are consistent with the literature that describes population aging as a growing phenomenon associated with the increase of chronic diseases and, consequently, the use of multiple medications. This age profile increases clinical, functional, and pharmacotherapeutic vulnerability, favoring the occurrence of DRPs, drug interactions, non-adherence to treatment, and greater risk of ADRs – underscoring the strategic role of pharmaceutical care[17]. Additionally, in the present study, a relevant distribution among single, married, and widowed individuals was observed, along with a high frequency of participants with religious practice, predominantly Catholic, and engagement in occupational or domestic activities. The presence of a support network may favor adherence, while its absence may be associated with greater vulnerability in home care[18]. Religiosity, in turn, may contribute to strengthening self-care and greater commitment to treatment[19]. Furthermore, the autonomy related to engagement in occupational or domestic activities may facilitate access to and appropriate management of pharmacotherapy. These aspects reinforce the relevance of considering social determinants in pharmaceutical care[20].

In the traumatology–orthopedic context, elderly patients undergoing surgical procedures frequently present complex therapeutic regimens involving analgesics, opioids, and anticoagulants, which increases the risk of DRPs[21]. In the present study, a predominance of medications from Groups N (Nervous System) and B (Blood and haematopoietic organs) was observed at hospital discharge, compatible with the clinical profile of orthopedic conditions in which the presence of acute and/or chronic pain demands continuous use of multiple medications, functional limitations, and prolonged therapeutic regimens that frequently require pre- and post-hospital monitoring[22].

Care transition constitutes a critical period for the occurrence of DRPs. This phase involves changes in prescriptions and the need to adapt treatment to the home routine – factors that may compromise treatment effectiveness and increase the risk of clinical complications, falls, and readmissions[23]. Thus, the need for care strategies centered on safe transition is evidenced, with the aim of reducing pharmacotherapy-related problems and promoting rational, safe, and effective medication use[24].

Fifty-five DRPs were identified, with a predominance of the adherence category, responsible for 35.9% of DRPs identified in pre-discharge and 25.0% in telemonitoring. Similar results are reported in the literature, which points to treatment adherence as one of the main challenges in the care of elderly patients using polypharmacy, especially in chronic conditions. Factors such as forgetfulness, complexity of therapeutic regimens, difficulty understanding information, and access barriers contribute to reduced adherence[25].

Safety-related DRPs represented 25.6% in pre-discharge and 12.5% in telemonitoring, with emphasis on the presence of adverse drug reactions (DRP 5). This finding is particularly relevant in traumatology–orthopedic patients, in whom the frequent use of analgesics, anti-inflammatory drugs, anticoagulants, and antibiotics increases the risk of adverse events[21]. In the Necessity category, a higher occurrence of unnecessary drug therapy (25.6%) was observed pre-discharge and (6.3%) in telemonitoring, compared to the need for inclusion of an additional medication in both analyzed periods. This pattern may reflect prescriptions maintained without periodic reassessment, therapeutic duplications, or use of medications without current clinical indication. These findings underscore the relevance of systematic pharmacotherapy review as a strategy for rationalizing medication use and reducing associated risks[26].

No DRPs related to effectiveness were identified; this absence may be associated with sample characteristics or the follow-up period. The pharmacist's role stands out as a strategy in the health care process, especially in safe care transitions: evidence indicates that pharmaceutical practice contributes to increased pharmacotherapy adherence through systematic guidance on appropriate medication use, both during hospitalization and in the post-discharge period[27]. In this sense, the DRP profile identified in this study evidences the pharmacist's actions in the identification, prevention, and resolution of these problems at hospital discharge, favoring rational medication use, reducing readmissions and health costs, and strengthening safety in care transitions[28].

To ensure the continuity of pharmaceutical care, telemonitoring has been described as a strategy that expands access to health care by reducing geographic barriers and care obstacles[29]. In the present study, telemonitoring enabled the inclusion of participants from different regions of the state of Rio de Janeiro: Metropolitan Region, Coastal Lowlands, and Costa Verde – indicating capacity to mitigate territorial inequalities in access to care[30]. However, telemoni-

toring also presents challenges: low health and digital literacy among some participants, difficulties in telephone contact, and limitations in understanding remote orientations. These aspects reinforce the need to adapt communication strategies, use accessible language, and develop complementary educational materials to broaden the effectiveness of this follow-up modality[31]. In the study, this support was complemented by the informational leaflet produced by the authors. The elaboration of structured instruments – such as the pharmacotherapeutic follow-up form and educational material – represents an advance in the systematization of pharmaceutical practice, contributing to standardization of actions, qualification of clinical records, and strengthening of the pharmacist's educational role[7].

Multiprofessional approaches with effective communication are associated with better clinical outcomes, greater safety in medication use, and qualification of care continuity. In this study, interprofessional strategies were adopted that guided and qualified pharmaceutical care actions: interactions with nursing, social work, and physiotherapy favored the identification of clinical, functional, and social demands important for care planning after discharge. Such strategies articulate with advance discharge planning – recognized as a central element in health care for contributing to the prevention of complications, functional recovery, and reduction of readmissions[32]. Nonetheless, barriers such as the absence of institutional protocols, fragmentation of information, team overload, and non-systematized communication may limit the effectiveness of multiprofessional practices, pointing to the need for improvements in care flows and institutional measures that strengthen interprofessional work in the discharge process[33]. The integration of the pharmacist in the multidisciplinary team – from admission through the elaboration of a structured discharge plan – contributes to safer pharmacotherapy, with reduced risk of DRPs and lower probability of readmissions[34,35].

In this scenario, pharmaceutical care in dehospitalization is promising, but faces challenges such as scarcity of publications describing the experience, absence of well-defined flows, need for greater recognition of the pharmacist's clinical role, and demand for continuous training and human resources[36]. In this study, operational difficulties stood out – such as discharges outside of working hours (07:00–19:00), multiple telephone contact attempts, and the pharmacist's non-inclusion in the institutional discharge protocol – evidencing the need for adaptation and strengthening of pharmaceutical services to ensure continuity and safety of treatment. Furthermore, the difference between the estimated and actually included number of participants resulted from refusals to participate, discharges outside the planned period, and reduced demand for home care in the last month of data collection. The pharmacotherapeutic follow-up form underwent updates throughout the study development, since this was a pilot project involving the initial implementation of pharmaceutical practice in institutional home care. The instrument was refined to better adapt to the service dynamics and continuity of care follow-up. However, the modifications made did not compromise the variables analyzed in this study, since the essential fields for data collection remained standardized throughout the data collection period. It is also noteworthy that the pharmacotherapeutic follow-up form did not include variables directed at assessing medication effectiveness, which may have limited the analysis of this category.

## CONCLUSION

The results contribute by describing a practical experience of pharmaceutical practice in care transitions, providing inputs for the improvement of services, the development of strategies that broaden the integration of the pharmacist in dehospitalization processes, and the conduct of future investigations. The pharmacist's role proved relevant for the identification and prevention of DRPs, in addition to favoring treatment adherence and the safe and rational use of medications at home — standing out as a strategic professional in the multiprofessional team. Furthermore, the interprofessional relationships established demonstrate that effective communication among health professionals is central to the qualification of care, by favoring the articulation of actions, the sharing of knowledge, and the making of safer and more resolute decisions. Thus, it is expected that the findings will strengthen the care transition from hospital to home, promoting better clinical outcomes and consolidating practices aimed at comprehensive care, patient safety, and the recognition of the pharmacist as an active and indispensable subject in the health care process.

### CRediT author statement

Project Administration: Matos JT; Formal Analysis: Matos JT; Conceptualization: Gonsalves ZS; Data Curation: Matos JT; Writing – Original Draft: Matos JT; Gonsalves ZS; Writing – Review & Editing: Matos JT; Gonsalves ZS; Alves TA; Investigation: Matos JT; Corrêa ECS; Martins IL; Methodology: Matos JT; Gonsalves ZS; Alves TA; Supervision: Gonsalves ZS; Alves TA; Gomez VLC; Validation: Matos JT; Visualization: Matos JT.

All authors have read and agreed to the published version of the manuscript.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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**How to cite this article:** Matos, J.T., Corrêa, E.C.S., Martins, I.L., Gomez, V.L.C., Alves, A.T.A., Gonsalves, Z.S. (2026). Telepharmacy at hospital discharge: pharmaceutical practice in dehospitalization – a pilot study. O Mundo Da Saúde, 50. https://doi.org/10.15343/0104-7809.202650e19972026I. Mundo Saúde. 2026,50:e19972026.

## FORMULÁRIO DE ACOMPANHAMENTO FARMACOTERAPÊUTICO

| ACOMPANHAMENTO FARMACOTERAPÊUTICO | | | |
|---|---|---|---|
| **PERFIL DO PACIENTE** | | | |
| **P01:** **Prontuário:** | | | **Data:** |
| **Idade**: **Gênero:** **Endereço:** | | | **Telefone:** |
| **HISTÓRICO CLÍNICO** | | | |
| | | | |
| **COMORBIDADES** | | | |
| ( ) Diabetes | ( ) Obesidade | ( ) Ansiedade | ( ) Distúrbios do Sono |
| ( ) Hipertensão | ( ) Dislipidemia | ( ) Depressão | ( ) Outras (Especifique): |
| **HÁBITOS DE VIDA** | | | |
| ( ) Tabagista | ( ) Etilista | ( ) Chá(s): | ( ) Outras substâncias: |
| **HISTÓRICO FARMACOTERAPÊUTICO** | | | |
| **Princípio ativo / Concentração** | **Posologia** | **Tempo de uso** | **Receita Médica** |
| 1. | | | ( ) Sim ( ) Não ( ) Não soube dizer |
| 2. | | | ( ) Sim ( ) Não ( ) Não soube dizer |
| 3. | | | ( ) Sim ( ) Não ( ) Não soube dizer |
| 4. | | | ( ) Sim ( ) Não ( ) Não soube dizer |
| 5. | | | ( ) Sim ( ) Não ( ) Não soube dizer |
| 6. | | | ( ) Sim ( ) Não ( ) Não soube dizer |
| 7. | | | ( ) Sim ( ) Não ( ) Não soube dizer |
| 8. | | | ( ) Sim ( ) Não ( ) Não soube dizer |
| Você às vezes esquece de tomar seus medicamentos? | | ( ) Sim ( ) Não; Qual: | |
| Quando se sente melhor deixa de tomar algum deles? | | ( ) Sim ( ) Não; Qual: | |
| Percebeu algum incômodo ou efeito inesperado depois de começar a usar os medicamentos? | | ( ) Sim ( ) Não; Qual: | |
| Tem alguma dificuldade para engolir os comprimidos? | | ( ) Sim ( ) Não; Qual: | |
| Interrompeu o uso de algum medicamento antes da internação? | | ( ) Sim ( ) Não; Qual: | |

| ACOMPANHAMENTO FARMACOTERAPÊUTICO | |
|---|---|
| **PERFIL DO PACIENTE** | |
| Possui alergia a medicamentos e/ou alimentos? | ( ) Sim ( ) Não; Qual: |
| Possui acompanhamento médico? | ( ) SUS ( ) Privado; Especialidade: |
| Como consegue seus medicamentos? | ( ) SUS ( ) PFP ( ) Farmácia Privada<br>( ) Farmácia privada e SUS/PFP |
| Dificuldade para conseguir algum dos medicamentos? | ( ) Sim ( ) Não; Por quê: |
| Quem organiza seus medicamentos em casa? Como? | |
| Como realiza o descarte de medicamentos vencidos em casa? ( ) Lixo comum ( ) Estabelecimentos de saúde. | |

**Legenda:**FP: farmácia popular.

| **AVALIAÇÃO** |
|---|
| Listar as necessidades e/ou problemas identificados, encaminhamentos e/ou telemonitoramento.<br>*#Medicamento prescrito na alta:*<br>*#Próxima consulta:*<br>#Conduta |

Adaptado de Souza, Reis e Bottacin[1]

Farmacêutico Responsável: _____