ORIGINAL ARTICLE

REVISTA ENFERMAGEM ATUAL IN DERME

# *TIME TO GO HOME: GUIDANCE ON MEDICATIONS FOR HOME USE IN NEWBORNS*

# *HORA DE IR PARA CASA: ORIENTAÇÃO DE MEDICAMENTOS PARA USO DOMICILIAR NO RECÉM-NASCIDO*

# HORA DE IR A CASA: ORIENTACIÓN SOBRE MEDICAMENTOS PARA USO DOMICILIARIO EN RECIÉN NACIDOS

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**ABSTRACT**
**Introduction:** The newborn's discharge process from the Neonatal Intensive Care Unit involves several guidelines to be transmitted by the health team to parents and caregivers, including the administration of medications at home. **Objective:** To evaluate the use of an instrument to guide parents on the administration of liquid oral medications during and after neonatal hospital discharge. **Methodology:** This is a study, of an exploratory descriptive nature, with a quantitative approach. The study was carried out in the Neonatal Intensive Care Unit of a Federal Institute, located in Rio de Janeiro. Data collection took place through a structured interview, with the parents of newborns, applied pre- and post-discharge, from August to November 2023. **Results:** 25 parents of babies who were discharged from the Nursing Unit were identified. Neonatal Intensive Care, of these 16 were discharged home without indication of the use of drugs and 14 had a prescription for liquid medications for home use and scheduled outpatient follow-up at the institution itself. After applying the guidance instrument, it was possible to observe that 100% of participants were clarified regarding doubts about how to administer medicines and vitamins. **Conclusion:** The use of an instrument to guide parents on the administration of liquid oral medications during and after neonatal hospital discharge was useful and can be used in neonatal units to reduce the chance of administration errors at home.
**Keywords:** Neonatal Nursing; Newborn; Patient Discharge.

**RESUMEN**
**Introducción**: El proceso de alta del recién nacido de la Unidad de Cuidados Intensivos Neonatales implica varias pautas a ser transmitidas por el equipo de salud a los padres y cuidadores, incluida la administración de medicamentos en el hogar. **Objetivo**: Evaluar el uso de un instrumento para orientar a los padres sobre la administración de medicamentos orales líquidos durante y después del alta hospitalaria neonatal. **Metodología**: Se trata de un estudio, de carácter descriptivo exploratorio, con enfoque cuantitativo. El estudio se realizó en la Unidad de Cuidados Intensivos Neonatales de un Instituto Federal, ubicado en Río de Janeiro. La recolección de datos se realizó a través de una entrevista estructurada, a los padres de los recién nacidos, aplicada antes y después del alta, de agosto a noviembre de 2023. **Resultados**: se identificaron 25 padres de bebés que fueron dados de alta de la Unidad de Enfermería de Cuidados Intensivos Neonatales, de estos 16 fueron dados de alta a domicilio sin indicación de uso de medicamentos y 14 tenían prescripción de medicamentos líquidos para uso domiciliario y seguimiento ambulatorio programado en la propia institución. Luego de aplicar el instrumento de orientación, se pudo observar que el 100% de los participantes aclararon sus dudas sobre cómo administrar medicamentos y vitaminas. **Conclusión**: El uso de un instrumento para guiar a los padres sobre la administración de medicamentos orales líquidos durante y después del alta hospitalaria neonatal fue útil y puede usarse en unidades neonatales para reducir la posibilidad de errores de administración en el hogar.
**Palabras clave**: Enfermería Neonatal; Recién Nacido; Alta del Paciente.

**RESUMO**
**Introdução**: O processo de alta da Unidade de Terapia Intensiva Neonatal do recém-nascido envolve diversas orientações a serem transmitidas pela equipe de saúde para os pais e cuidadores, dentre estas a administração de medicamentos no domicílio. **Objetivo**: Avaliar o uso de um instrumento de orientação aos pais sobre a administração de medicamentos orais líquidos durante e após a alta hospitalar neonatal. **Metodologia**: Trata-se de um estudo, de natureza descritiva exploratória, com abordagem quantitativa. O estudo foi realizado na Unidade de Terapia Intensiva Neonatal de um Instituto Federal, situado no Rio de Janeiro. A coleta de dados se deu através de uma entrevista estruturada, com os pais dos recém-nascidos, aplicada no pré e pós alta, no período de agosto a novembro de 2023. **Resultados**: Foram identificados 25 pais de bebês que tiveram alta da Unidade de Terapia Intensiva Neonatal, destes 16 foram liberados para casa sem indicação do uso de fármacos e 14 possuíam prescrição de medicamentos líquidos para uso domiciliar e marcação de seguimento ambulatorial na própria instituição. Após a aplicação do instrumento de orientação foi possível observar que 100% dos participantes foram esclarecidos a respeito de dúvidas sobre como administrar os remédios e vitaminas. **Conclusão**: O uso de um instrumento de orientação aos pais sobre a administração de medicamentos orais líquidos durante e após a alta hospitalar neonatal foi útil e pode ser utilizado nas unidades neonatais para diminuir a chance de erros de administração em casa.
**Palavras-chave:** Enfermagem Neonatal; Recém-Nascido; Alta do Paciente.

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## INTRODUCTION

Expecting a baby evokes a variety of feelings and expectations for families, especially parents. However, the unexpected hospitalization of a newborn (NB) entails several changes in the routine of their caregivers [1].

Admission to the Neonatal Intensive Care Unit (NICU) occurs when the baby presents with high-risk clinical conditions such as prematurity, malformations of the cardiovascular, neurological, or gastrointestinal systems, and respiratory pathologies, among others. These conditions require the use of medications, which do not always have appropriate dosages and formulations for this population [1].

Doses used in newborns are often based on extrapolations of the doses used in adults, making medication use even more challenging. Individualized dose calculations, adaptations, and changes to dosage forms are required, as well as the constant handling of syringes and dispensers, increasing the risk of adverse effects [2].

Some of these medications are prescribed for home use, where handling becomes a risk factor in care, as inappropriate spoons and other instruments are used to measure the dose, leading to dosing errors [2].

In this perspective, the multidisciplinary healthcare team must pay attention to the effective training of these caregivers so that this transition from the hospital to the home environment is carried out safely. To this end, healthcare professionals involved in this process need to develop strategies to facilitate this approach [3].

The following guiding question emerged from this study: "Is the use of a guidance tool for administering liquid oral medications at hospital discharge for newborns from a neonatal unit a good strategy to minimize risks with home medication dosing?"

Managing the discharge of newborns who will continue pharmacological treatment at home is one of the challenges faced by healthcare teams [3].

It is emphasized that the possibility of errors in medication administration puts patients at risk, compromising their safety, and potentially causing harm or even death [2].

It is also noted that if errors in home medication administration occur in newborns, the consequences can be more severe than in older patients. This is because most of these babies do not yet have adaptive defense mechanisms and their metabolism tends to be faster, causing the effects of these medications to occur almost immediately, leaving insufficient time for hospital care and subsequent correction of the error [4].

Safe home medication administration is closely linked to the training and development of caregivers responsible for this activity with newborns [2].

Therefore, this research is justified by the need to produce scientific evidence addressing the hospital discharge process for hospitalized newborns, especially the transfer of care involving medications.

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The overall objective of this study was to evaluate the use of a parental guidance tool on the administration of liquid oral medications during and after neonatal hospital discharge. The specific objectives of this study were: To analyze the use of a parental guidance tool on the administration of liquid oral medications in the pre-neonatal hospital discharge period; To analyze the use of a parental guidance tool on the administration of liquid oral medications during the first post-neonatal hospital discharge visit.

## METHODS

This is a descriptive, exploratory study with a quantitative approach that aimed to create an educational tool for parents and caregivers during hospital discharge.

The quantitative approach uses data collection instruments to answer research questions and test previously established assumptions, relying on numerical and/or statistical measurement to accurately establish patterns and trends [5].

It refers to a proposal to compare an intervention (guidance on the use of liquid oral medications) before and after the application of the tool (on the day of discharge and one week after discharge).

The study was conducted in the Neonatal Unit of the Fernandes Figueira National Institute of Women's, Children's, and Adolescent Health (IFF), a federal hospital in Rio de Janeiro, Rio de Janeiro.

The Neonatal Unit has a total of 26 beds, 8 of which are allocated to Conventional Intermediate Care (UCINCO); 14 beds for the Neonatal Intensive Care Unit (NICU) and 4 beds for the Kangaroo Intermediate Care Unit (NICU).

The institution is a national reference for fetal risk and works directly with newborns with complex conditions, such as malformations, genetic syndromes, prematurity, and others.

Care for the baby and family is provided by a multidisciplinary team comprised of nurses, nursing technicians, neonatologists, occupational therapists, speech therapists, psychologists, physical therapists, nutritionists, and social workers.

The location was chosen because the unit primarily cares for newborns who, even after clinical stability and discharge, require continued treatment with medication at home. Study participants were the parents and/or caregivers of newborns admitted to the neonatal unit.

The study included parents and/or caregivers of newborns discharged with oral medication prescriptions for home use and who received outpatient follow-up at the institution. Parents and/or caregivers of newborns not followed up at the institution's outpatient clinic were excluded.

The patients' guardians received discharge instructions from healthcare professionals (doctors and nurses) and were subsequently approached individually by the researcher, at which point they received an invitation to participate in the study.

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To this end, the researcher explained the research objectives and procedures, and those who agreed to participate signed an informed consent form before administering the data collection instrument.

The risks of this study include breach of confidentiality and fatigue or discomfort while completing the form. To avoid these risks, any information that could identify them was not disclosed.

A direct benefit is access to a tool that potentially reduces the risk of incorrect medication administration after discharge.

As an indirect benefit, the research results will serve as a tool for neonatology professionals to improve their guidance practices for home medication use after discharge of newborns admitted to a NICU and provide better care for newborns and their families, both in the hospital and at home.

For this phase, the researcher monitored the hospital census of patients admitted to the unit on a weekly basis, identifying those who would be discharged.

The study population characterization instrument consisted of socioeconomic information from parents and hospital data from hospitalized infants. The socioeconomic data included age, sex, race/ethnicity, marital status, and education. The hospital data included medical diagnoses, prescribed medications, and an assessment of their understanding of what was explained (Questionnaire 1).

Therefore, the following steps were followed for data collection:

1. After the newborn's caregiver received pre-discharge instructions from the team's physician or nurse, the researcher approached them about their interest in participating in the study. If they responded positively, they signed the informed consent form.

2. The participant was invited and directed to a private room where data collection took place.
3. Next, the caregivers' understanding of the instructions previously received from physicians or nurses regarding the administration of liquid oral medications to newborns at home was assessed. To this end, the caregiver was asked to complete a questionnaire developed by the researchers (Questionnaire 1).
4. The researcher then presented the medication guidance instrument to the caregiver and instructed them on its use. The caregiver was then asked to demonstrate understanding of the instructions regarding the medication using a syringe and water (Figure 1). During administration, the researcher verified how the task was performed.

The oral liquid medication guidance tool was created by the authors of this study (Figure 1). The tool includes space for patient identification, medication name, dose, and time of administration. Furthermore, it features a drawing of real syringes, allowing the patient to mark the volume to be aspirated according to the doctor's prescription with a colored pen.

One week after discharge, any difficulties or concerns about administering oral liquid medications were assessed through a repeat administration of the guidance comprehension questionnaire (Questionnaire 1).

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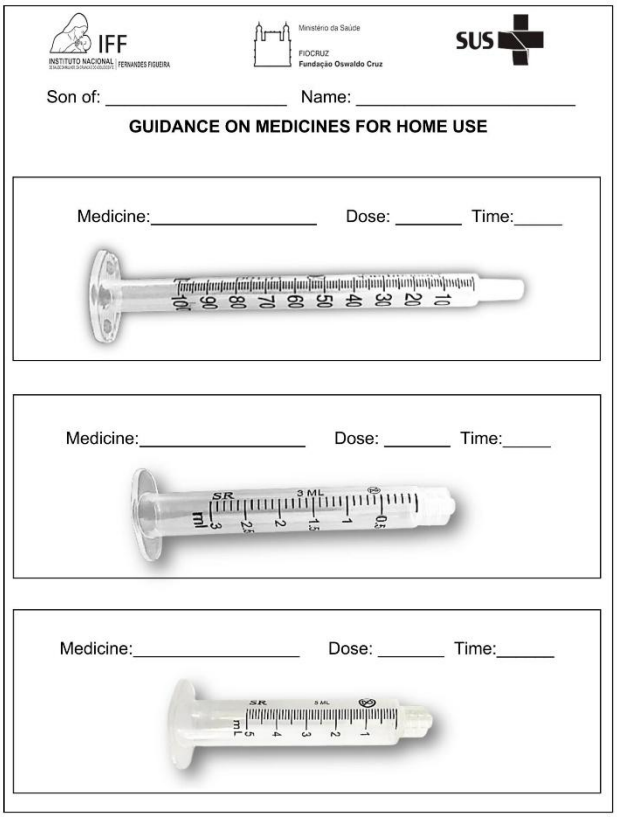
**Questionnaire 1** - Verification of parental understanding of medication administration at home.

| SOCIODEMOGRAPHIC DATA | | | | |
|---|---|---|---|---|
| Age: | Gender: | Color/race: | Marital status | Education: |
| HOSPITAL DATA | | | | |
| Medical diagnoses: | | Prescription medications: | | |

| CHECKING UNDERSTANDING OF GUIDELINES | | | | |
|---|---|---|---|---|
| | I did not receive guidance | No | Only a part | Yes |
| I will be able to explain to other people how to administer medicines and vitamins | | | | |
| I understand how many medications and vitamins I will need to administer | | | | |
| I understood the daily schedules and intervals of medicines and vitamins | | | | |
| I understand the volume of each medicine and vitamin I need to administer. | | | | |
| My doubts about how to administer the medicines and vitamins were clarified. | | | | |

Source: authors' data.

**Figure 1**- Medication guidance instrument




Source: authors' data.

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## RESULTS

Data collection took place from August to November 2023. A total of 30 parents of babies discharged from the Neonatal Intensive Care Unit participated in the study. Of these, 16 were discharged home without medication prescriptions, and 14 had prescriptions for oral liquid medications for home use and scheduled outpatient follow-up appointments at the institution itself.

Table 1 shows that females predominated, with 85.68% of those responsible for their children's discharge.

The majority of the study population was between 21 and 30 years old (57.12%), of mixed race (42.84%), and married (64.26%). Regardless of educational level, half of the participants had completed high school, accounting for 49.98% of the respondents (Table 1).

**Table 1** - Socioeconomic profile of parents interviewed upon discharge of newborns from the neonatal ICU.

| **Gender identity** | **n** | **%** |
|---|---|---|
| Female | 12 | 85,68 |
| Male | 2 | 14,28 |
| Transgender | - | - |
| Gender neutral | - | - |
| Non-binary | - | - |
| Total | 14 | 100 |
| **Age** | **n** | **%** |
| 18- 20 anos | 1 | 7,14 |
| 21- 30 anos | 8 | 57,12 |
| 31- 40 anos | 5 | 35,7 |
| Total | 14 | 100 |
| **Color/ Race** | **n** | **%** |
| Brown | 6 | 42,84 |
| Black | 5 | 35,7 |
| BrancaWhite | 3 | 21,42 |
| Total | 14 | 100 |
| **Marital Status** | **n** | **%** |
| Single | 5 | 35,7 |
| Married | 9 | 64,26 |
| Total | 14 | 100 |

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| Education | n | % |
|---|---|---|
| Full graduation | 2 | 14,28 |
| Incomplete garaduation | - | - |
| Full high school | 7 | 49,98 |
| Incomplete high school | 3 | 21,42 |
| Full elementary | 1 | 7,14 |
| Incomplete elementary | 1 | 7,14 |
| People without school education | - | - |
| Total | 14 | 100 |

Source: Santos (2023) [6]

Among the hospital data of discharged infants, twenty-seven medical diagnoses were identified, with the most prevalent being Bronchopulmonary Dysplasia and Prematurity (18.5%), as described in Table 2.

**Table 2 -** Diagnostic profile of newborns discharged from the NICU, from August to November 2023.

| Medical diagnoses | | |
|---|---|---|
| | **N** | **%** |
| **Pathologies of the central nervous system** | | |
| Hydrocephalus | 2 | 7,4 |
| Holoprosencephaly | 1 | 3,7 |
| **Respiratory pathologies** | | |
| Bronchopulmonary dysplasia | 5 | 18,5 |
| **Heart diseases** | | |
| Ventricular septal defect (VSD) | 1 | 3,7 |
| **Pathologies of the renal system** | | |
| Renal Pelvis Dilation | 1 | 3,7 |
| **Surgical pathologies** | | |
| Myelomeningocele | 2 | 7,4 |
| Diaphragmatic Hernia | 1 | 3,7 |
| Ileum perforation | 1 | 3,7 |
| Polydactyly | 1 | 3,7 |
| **Síndromes** | | |
| Dandy Walker Syndrome | 2 | 7,4 |
| Down syndrome | 1 | 3,7 |

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| | | |
|---|---|---|
| **Prematurity** | 5 | 18,5 |
| **Twinship** | 4 | 14,8 |
| **TOTAL** | **27** | **100** |

Source: Santos (2023) [6]

Medications prescribed for home use by infants discharged from the NICU were tabulated to illustrate the number of times they were prescribed and the final percentage within the study period, totaling 49 medications. Thus, it was possible to observe that among the most frequently prescribed medications were ferrous sulfate (20.4%), calecalciferol (18.36%), and multivitamins (12.24%), as shown in Table 3.

**Table 3** - Liquid medications prescribed for home administration.

| **Medicines** | **n** | **%** |
|---|---|---|
| **Metabolism mineral supplements** | | |
| Cholecalciferol | 10 | 20,4 |
| Multivitamin | 6 | 12,24 |
| Omeprazole | 4 | 8,16 |
| Zinc sulfate | 4 | 8,16 |
| Domperidone | 2 | 4,08 |
| Ferrous Sulfate | 9 | 18,36 |
| **Diuretics** | | |
| Furosemide | 3 | 6,12 |
| Spironolactone | 2 | 4,08 |
| Hydrochlorothiazide | 2 | 4,08 |
| **Psychotropics** | | |
| Phenobarbital | 3 | 6,12 |
| **Antimicrobials for systemic use** | | |
| Cephalexin | 3 | 6,12 |
| **Cholagogues and Hepatoprotectors** | | |
| Ursodeoxycholic acid | 1 | 2,04 |
| **TOTAL** | **49** | **100** |

Source: Santos (2023) [6]

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During data collection, it was observed that administering prescribed liquid medications required the use of graduated syringes ranging from 1 to 5 ml, with 1 ml syringes being the most commonly used (65.28%).

**Table 4 -** Frequency of syringe use, by millimeter.

| **Syringes** | **N** | **%** |
|---|---|---|
| 1,0 ml | 32 | 65,28 |
| 3,0 ml | 11 | 22,44 |
| 5,0 ml | 6 | 12,24 |
| Total | 49 | 100% |

Source: Santos (2023) [6]

After collecting socioeconomic and hospital data, a questionnaire was administered to assess parents' understanding of home medication administration, both before and after discharge.

During pre-discharge, the questionnaire was administered to determine whether parents had received guidance from healthcare professionals regarding home liquid medication administration and whether caregivers had effectively understood this information.

**Table 5 -** Assessment of parents' understanding of discharge instructions for home liquid medication administration on the day of discharge from the Neonatal Intensive Care Unit.

| PRE-DISCHARGE QUESTIONNAIRE | | | | | |
|---|---|---|---|---|---|
| | I did not receive guidance | No | Only a part | Yes | Total |
| | N (%) | N (%) | N (%) | N (%) | N (%) |
| I will be able to explain to others how to administer medications and vitamins. | - | **3** 21,42% | **8** 57,12% | **3** 21,42% | 14 100% |
| I understand how many medications and vitamins I need to administer. | **1** 7,14% | **1** 7,14% | **2** 14,28% | **10** 70,14% | 14 100% |
| I understand the daily schedule and intervals for medications and vitamins. | **1** 7,14% | **1** 7,14% | **4** 28,56 | **8** 57,12% | 14 100% |
| I understand the volume of each | **1** | - | **8** | **5** | 14 |

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| | | | | | |
|---|---|---|---|---|---|
| medication and vitamin I need to administer. | 7,14% | | 57,12% | 35,7 | 100% |
| I have had my questions answered about how to administer medications and vitamins. | - | **2** 14,28% | **8** 57,12% | **4** 28,56 | 14 100% |

Source: Santos (2023) [6]

When asked if they would know how to explain to others how to administer medications and vitamins, 57.12% of parents answered, "Only part of it." The same percentage also reported understanding the daily schedules and intervals for medications and vitamins, as described in Table 5.

After completing the verification questionnaire, the medication guidance tool was administered. This tool consists of images of syringes graduated from 1 to 5 ml and spaces for additional information, such as the patient's name, prescribed medications, dose, and time of administration (Appendix B).

The syringe image primarily allows the instrument's applicator to mark the volume that should be aspirated by the caregiver for later administration of the medication to the baby.

After introducing the tool, the researcher asked the parents to demonstrate their understanding of the instructions using a syringe and water, ensuring that all completed the task appropriately.

**Table 6** - Verification of parents' understanding of discharge guidelines for administering liquid medications at home one week after discharge from the Neonatal Intensive Care Unit.

| POST-DISCHARGE QUESTIONNAIRE | | | | | |
|---|---|---|---|---|---|
| | I did not receive guidance | No | Only a part | Yes | Total |
| | N (%) | N (%) | N (%) | N (%) | N (%) |
| I will be able to explain to other people how to administer medicines and vitamins | - | - | **1** 7,14% | **13** 92,82% | **14** 100% |
| I understand how many medications and vitamins I will need to administer | - | - | - | **14** 100% | **14** 100% |
| I understood the daily schedules and intervals of medicines and vitamins | - | - | - | **14** 100% | **14** 100% |

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| | | | | | |
|---|---|---|---|---|---|
| I understand the volume of each medicine and vitamin I need to administer. | - | - | - | **14** 100% | **14** 100% |
| My doubts about how to administer the medicines and vitamins were clarified. | - | - | - | **14** 100% | **14** 100% |

Source: Santos (2023) [6]

One week after discharge from the NICU, the researcher approached the parents again during the newborn's outpatient visit to administer the same questionnaire to assess their understanding of discharge instructions for administering liquid medications. It was observed that 100% of the participants received clarification regarding their questions about how to administer medications and vitamins, as described in Table 6.

## DISCUSSION

A newborn's hospital discharge is a highly anticipated moment for caregivers, marked by an explosive mix of feelings, including anxiety, joy, tranquility, and fear, accompanied by high expectations of welcoming their child home [7].

The data from this survey most frequently highlighted the maternal role in the newborn's discharge. Of these, the majority identified themselves as being of mixed race, between 21 and 30 years old, married, and with a high school diploma. Some factors related to caregivers' socioeconomic characteristics also directly or indirectly contribute to newborn care and NICU admission, such as low educational level, low family income, and advanced maternal age [8].

Regardless of the medical diagnoses of the infants discharged from the NICU, this study found the most prevalent associations with Bronchopulmonary Dysplasia (18.5%), Prematurity (18.5%), and Twin Births (14.8%). Souza [9] described in his research a relationship between multiple diagnoses and specific physiological and biochemical alterations in newborns as risk factors for concomitant medication use in neonates. Furthermore, he highlighted bronchopulmonary dysplasia as one of the main causes of chronic lung disease in newborns in neonatal intensive care units, corroborating the findings of this study [9].

Regarding the most frequently prescribed medications for newborns at discharge, the most prominent were cholecalciferol (20.4%); ferrous sulfate (18.36%), and multivitamins (12.24%). Prematurity results in micronutrient deficiencies in infants. This occurs due to low stores, which are formed in the third trimester of pregnancy. In this sense, the importance of vitamin and mineral supplementation during the perinatal period is evident. These substances have significant positive effects on the health of newborns who

require this supplement. Although essential for healthy growth and development, this supplement is sometimes trivialized by parents and caregivers due to a lack of professional guidance [10].

It is important that healthcare professionals pay attention to guidance regarding interactions between medications and food, in which case it is recommended that milk be offered at a separate time from ferrous sulfate [11].

Regarding the findings regarding the use of syringes for administering liquid medications, 65.28% of parents needed to use the smallest syringe available (1.0 ml). It was observed that the use of dosing devices by laypeople is a challenge, given that medication doses sometimes vary, requiring the use of separate syringes [12].

Furthermore, some medications are prescribed in drops, which parents administer directly to the newborn's mouth without the aid of a measuring instrument to properly measure the volume, a fact that can lead to errors in this process. Callé's study [12] highlighted concerns among caregivers who needed to continue infant medication treatment at home, particularly regarding the handling of measuring instruments [12].

Another important finding in this study was that 57.12% of parents responded that they would know how to explain to others how to administer medications and vitamins that were "only partially" as instructed. This is a concerning finding, especially given the vulnerable population of newborns. This fragility in care may stem from the lack of knowledge acquired upon discharge, a factor that can compromise patient safety after discharge [13].

According to the Brazilian Society of Pediatrics (14), it is crucial that discharge instructions be provided to parents and caregivers to manage the difficulties faced during the transition between the birthplace and home [14].

Despite understanding the amount of medication to be administered, 70% of participants stated they understood the information. Regarding the time and interval of administration, only 57.12% responded positively. This statement leads us to reflect on the fact that most of the time, babies are discharged home using more than one medication. This, combined with other tasks, can hinder caregivers' understanding.

Non-adherence to the time and interval of medication administration is also mentioned in the study by Callé [12], which highlights the need for a clear and objective dialogue between parents and healthcare professionals to contribute to the baby's safety, avoiding errors and low effectiveness of the medications administered [12].

For greater safety, ideally, instructions should be provided to parents gradually throughout the hospital stay, thus avoiding an accumulation of information and promoting understanding of medications, aiding in the continuity of care. Discharge should not be considered a single event, but rather a continuous

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and organized process, empowering the family to respond to critical situations after leaving the hospital [15].

Discharge tends to be challenging for families, who are overwhelmed by the endless amount of information surrounding the baby's care. Therefore, the verification questionnaire was administered twice, as the discharge itself is a time of intense euphoria and anxiety, and the overwhelming amount of information can simultaneously generate questions that parents may overlook [16].

During the meeting with parents at the institution's outpatient clinic after discharge, participants' accounts revealed how much the healthcare team's guidance impacted home care, not only regarding medications but also newborn care in general.

Another interesting point to highlight is that any questions that were not addressed at discharge or that arose during the new experience with the baby at home were clarified during the outpatient meeting. Furthermore, it was once again possible to observe the maternal figure as the central figure in activities with the baby, despite the presence of a companion. Families face numerous challenges during the discharge process, so a strengthened support network tends to contribute to greater support for the newborn[16].

Regarding the participants' statements after administering the instrument to guide parents on administering liquid oral medications, we found that the tool helped reinforce their understanding of how to handle medications that would be administered at home. When asked after using the instrument whether they would know how to explain to others how to administer medications and vitamins, 92.82% of parents responded "yes." Regarding understanding of volume, dosing intervals, and other questions, 100% of participants reported understanding the information.

The instrument created by the researchers for discharge guidance (Appendix B) is based on illustrations of syringes marked with colored pens, indicating the volume that should be administered by the caregiver at home according to the doctor's prescription. The material was developed due to a need observed by the research authors, who work in the NICU, to better systematize care for newborns and their families regarding instructions for administering liquid oral medications at discharge.

When applied, parents responded positively, particularly because it was a playful approach, which facilitated understanding. The authors [17] state that the existence of tools that guide the team in order to systematize the discharge process is essential to organize the work and ensure its continuous flow. The multidisciplinary team must be involved in the discharge process, and everyone must guide the family. The goal is to make caregivers protagonists of care [17].

The authors [18] highlight the importance of creating educational materials in their research and emphasize that these actions can enhance interventions and teamwork in protecting the health of the individuals involved, as they allow

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easy access to the content and are permanent, as they are available for consultation whenever necessary [18].

A qualified discharge with strategic actions can empower parents to safely care for their children. When preparing for discharge, parents receive various instructions on how to care for their infant at home, such as feeding, umbilical cord stump hygiene, diaper changes, bathing, medication administration, and other aspects [16]. During this adaptation process, caregivers experience doubts and insecurity. Therefore, professional support from the healthcare team is crucial to minimize the impact on these families [19].

The authors [20], in their study conducted in a neonatal ICU in Rio de Janeiro, described the importance of family involvement in infant care and pre-discharge preparation, aiming to promote bonding and greater autonomy for caregivers [20].

An unplanned discharge, discussed and systematized based on biological criteria, effective communication, and monitoring within the healthcare network, can lead to emergency returns of newborns and their caregivers to maternity wards. When it comes to medications, we must be even more vigilant, as incorrect administration can cause irreversible harm to the patient [15].

## CONCLUSION

The use of a parental guidance tool on administering liquid oral medications during and after neonatal hospital discharge was useful and can be used in neonatal units to reduce the risk of home administration errors.

The results of this study highlight that handling dispensers by laypeople is a challenge, given that medication doses sometimes vary, requiring the use of syringes with different millimeters. The medication administration guidance tool was created and administered at NICU discharge to educate parents about this process.

Furthermore, seeking strategies that facilitate the safe transition of care for critically ill newborns from the hospital to the home is a practice that has been implemented in the NICU setting.

Parent presence and family-centered care also contribute to a smoother hospital discharge experience, providing greater confidence to caregivers and, consequently, greater safety for the newborn at home.

We conclude that initiatives to reinforce guidelines regarding the administration of liquid oral medications and vitamins at home, through educational tools and encouraging parental participation in newborn care by health professionals, ensure favorable conditions for neonatal hospital discharge.

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**Declaration of Conflict of Interest**

Nothing to declare.

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