

# PHARMACEUTICAL CARE FOR INSULIN-DEPENDENT PATIENTS: AN EXPERIENCE REPORT

*CUIDADO FARMACÊUTICO A INSULINODEPENDENTES: RELATO DE EXPERIÊNCIA*

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## ABSTRACT

**Objective:** The report aims to describe the experience of a pharmacist resident in home visits to insulin-dependent patients. **Methods:** This is a descriptive study with a qualitative approach, conducted between November 2024 and January 2025, with patients registered as insulin-dependent at the primary health care unit where the resident worked. The activity was carried out through follow-up to understand the users' knowledge about insulin treatment. **Results:** During the study, it was possible to identify the patients' level of understanding regarding the correct use of insulin, their lack of knowledge about proper medication storage, and the need for guidance on daily blood glucose monitoring. **Final considerations:** The study emphasizes the importance of the pharmacist in caring for diabetic patients, as this professional plays a key role in providing guidance on pharmacotherapy, thus contributing to the improvement of patients' glycemic control.

**Keywords:** *Pharmaceutical Services; Insulin; Diabetes Mellitus.*

## RESUMO

**Objetivo:** O relato tem como objetivo descrever a experiência de um farmacêutico residente em visitas domiciliares a pacientes insulino-dependentes. **Métodos:** Trata-se de um estudo descritivo, com abordagem qualitativa, realizado entre novembro de 2024 e janeiro de 2025, com pacientes cadastrados como insulino-dependentes na unidade básica de saúde na qual a residente atuou. A atividade foi realizada através de um acompanhamento para compreender o conhecimento dos usuários a respeito do tratamento com a insulina. **Resultados:** Durante o estudo, foi possível identificar o grau de compreensão dos pacientes sobre o uso correto da insulina, o desconhecimento em relação ao armazenamento adequado do medicamento e a necessidade de orientação sobre o monitoramento diário da glicemia. **Considerações finais:** O estudo ressalta a importância do farmacêutico no cuidado ao paciente diabético, uma vez que esse profissional desempenha um papel fundamental ao fornecer orientações sobre a farmacoterapia, contribuindo, assim, para a melhoria do controle glicêmico dos pacientes.

**Descritores:** *Assistência Farmacêutica; Insulina; Diabetes Mellitus.*

## RESUMEN

**Objetivo:** El informe tiene como objetivo describir la experiencia de un farmacéutico residente en visitas domiciliarias a pacientes insulino-dependientes. **Métodos:** Se trata de un estudio descriptivo, con un enfoque cualitativo, realizado entre noviembre de 2024 y enero de 2025, con pacientes registrados como insulino-dependientes en la unidad básica de salud donde la residente trabajó. La actividad se realizó a través de un seguimiento para comprender el conocimiento de los usuarios sobre el tratamiento con insulina. **Resultados:** Durante el estudio, fue posible identificar el grado de comprensión de los pacientes sobre el uso correcto de la insulina, el desconocimiento acerca del almacenamiento adecuado del medicamento y la necesidad de orientación sobre el monitoreo diario de la glucosa. **Consideraciones finales:** El estudio resalta la importancia del farmacéutico en el cuidado del paciente diabético, ya que este profesional desempeña un papel fundamental al proporcionar orientaciones sobre la farmacoterapia, contribuyendo así a la mejora del control glucémico de los pacientes.

**Descriptorios:** *Servicios Farmacéuticos; Insulina; Diabetes Mellitus.*

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## INTRODUCTION

The Family Health Strategy (FHS) is the main component of Primary Health Care (PHC) and serves as the primary point of entry into the Brazilian Unified Health System (SUS). Due to its close relationship with patients, the FHS plays a crucial role in health care, addressing not only individuals but also their families and the broader community. This care model fosters the development of strong bonds between the health care team and the population, becoming essential for the provision of continuous care and assistance. The Basic Health Unit (BHU) is the setting where a variety of services are offered, with a multidisciplinary team dedicated to health promotion and disease prevention, both on an individual and collective level<sup>2</sup>.

Among the various demands associated with Primary Health Care (PHC), home care stands out as a fundamental tool for the delivery of health services within Basic Health Units (BHUs)<sup>1</sup>. Home visits consist of care provided at the patient's residence, offering a set of continuous actions tailored to the user's needs, and can be carried out by any member of the health care team<sup>2</sup>.

Diabetes mellitus (DM) is a complex chronic disease resulting from defects in insulin action and/or secretion. The bond between diabetic patients and the Basic Health Unit (BHU) is essential to ensure early diagnosis and access to appropriate treatments, thereby preventing complications or disease progression. Insulin is one of the main pharmacological treatments for diabetes and may be indicated as a first-line option when glycemic control is not achieved, or as a second- or third-line therapy when there is an unsatisfactory response to oral hypoglycemic agents<sup>3</sup>.

Diabetes management requires the involvement of a multidisciplinary team, in which the pharmacist plays a key role as the professional trained to educate and guide patients in the control of this chronic disease<sup>4</sup>. In Primary Health Care (PHC), the pharmacist provides patient-centered pharmaceutical care through clinical services such as pharmacotherapy review and pharmaceutical follow-up. The goal of this process is to identify issues that may compromise treatment effectiveness and, based on this analysis, implement interventions and provide guidance to ensure adherence and therapeutic success<sup>3</sup>.

Considering the relevance of pharmaceutical follow-up in the care of patients with diabetes, this report aims to describe the experience of a resident pharmacist in conducting home visits to insulin-dependent patients. The objective is to highlight the impact of pharmaceutical care on the management of chronic diseases, contributing to medication management and the improvement of quality of life in this patient population.

## METHODS

This is a descriptive study in the form of an experience report, with a qualitative approach, exploring the experiences of a resident pharmacist during home visits to insulin-dependent patients registered with this condition in the coverage area of the João Eduardo Neto Basic Health Unit. The visits took place between November 2024 and January 2025, in the municipality of Limoeiro do Norte, located in the interior of the state of Ceará, Brazil.

The municipality has 19 Basic Health Units (BHUs) distributed throughout its territory, as well as two Family and Community Health Residency teams working in different BHUs. The BHU where this study was conducted is composed of a full health care team, including a physician, nurse, and dentist, along with a group of residents from the pharmacy, nursing, dentistry, and physical education fields, who participated in the program over the course of two years. In addition, the unit has six Community Health Agents (CHAs), each responsible for a different micro-area within the unit's coverage zone.

Located in a peri-urban area, the João Eduardo Neto BHU has 62 insulin-dependent patients registered in the PEC (Citizen's Electronic Health Record) digital system. However, only 10 patients were visited during the study period—five residing in a micro-area within the urban zone near the BHU, and the other five in a rural micro-area known as Bom Fim, a community served by the unit. Patients were selected based on their need for multidisciplinary follow-up and the feasibility of conducting home visits.

All visits took place in the morning, during which both the insulin users themselves and any present family members or caregivers were approached. The care provided focused on concepts related to insulin therapy, aiming to assess patients' knowledge about its use. To collect the necessary data for follow-up, dynamic conversations were held with the patients to evaluate their understanding of the type of insulin used, daily dosage, dosage schedule, method of administration, and proper storage of the medication. The information gathered was recorded in a non-standardized form, used by the researcher solely to guide the results. Additionally, patients' practices and understanding regarding daily capillary blood glucose monitoring were assessed.

As this is an experience report, the study did not require submission to a Research Ethics Committee. However, all ethical principles were strictly observed, in accordance with the relevant guidelines and recommendations for conducting studies of this nature. Accordingly, the study's objective and a description of the planned actions were clearly explained to all selected participants.

## RESULTS

The visits were conducted by the pharmacist, in collaboration with the unit's team nurse and the Community Health Agent (CHA) responsible for each patient's micro-area. The CHAs played a key role in maintaining contact with the patients, informing them of the scheduled date for follow-up. During the visits, the patients welcomed the professionals cordially, showing interest in and appreciation for the guidance provided.

One of the clinical observations made by the pharmacist concerned patients' knowledge regarding their daily insulin dosage. Although many patients frequently lost their medical prescriptions, most had a good understanding of the number of international units (IU) administered. The method of administration and the importance of rotating injection sites were also discussed with each patient, all of whom demonstrated an understanding of this practice and carried it out appropriately. However, it was noted that few patients fully understood the correct method for insulin

storage. While all were aware that the medication needed to be kept refrigerated, many did not store it in the most appropriate part of the refrigerator.

Patients were also approached regarding blood glucose monitoring, with an emphasis on the importance of capillary glucose testing—a practice that can be performed at home, as insulin-dependent patients are provided with glucometers and test strips. However, some users expressed dissatisfaction due to not receiving test strips through the public health service, which has hindered the regular performance of this procedure. As a result, some patients do not measure their blood glucose daily, and those who do often rely on assistance from family members or neighbors. Furthermore, it was observed that patients do not have the habit of recording their glucose values, which makes it difficult to carry out more rigorous follow-up and a thorough assessment of insulin use.

During the process, it was identified that the majority of patients were elderly, making family support a common practice, especially in insulin administration and capillary blood glucose monitoring. Although it was not possible to provide guidance directly to all family members due to the timing of the visits, the information was conveyed to the patients, with a recommendation that it be shared with relatives living in the same household or those involved in any aspect of their treatment.

## DISCUSSION

In primary care, the Family Health Strategy (FHS) serves as the main gateway to the Unified Health System (SUS) and to health care itself, providing a crucial environment for the development of both individual and collective actions aimed at health promotion, protection, and care<sup>5</sup>. In the context of home visits, Community Health Agents (CHAs) are the professionals responsible for collecting essential information to support the development of care strategies within the territory, recognizing home visits as a fundamental approach to fostering interaction and health care<sup>6</sup>. During this experience, each CHA responsible for the patient's micro-area played a key role by providing knowledge about the patient's health history, thereby enabling a better understanding of care needs and the delivery of individualized guidance.

Insulin therapy aims to help maintain the patient's physiological profile and is essential for glycemic control. Insulin administration can be performed by the patient themselves and should become part of their daily routine, as multiple daily doses are crucial to achieving adequate blood glucose control<sup>7</sup>. Although the administration process is relatively simple, it can present an initial challenge due to the steps involved. However, the guidance provided to patients, their family members, or caregivers during the study was fundamental. This experience made it clear that all users had a correct understanding of injection sites and site rotation, which is critical to preventing lipodystrophy and glycemic instability<sup>8</sup>.

Another important factor in insulin therapy is the proper storage of insulin, as many users demonstrated a lack of knowledge regarding appropriate handling of the medication—an issue also highlighted in a study that reported widespread misinformation about the ideal storage conditions for medications<sup>9</sup>. In Koch et al. (2019), it was found that 70% of participants did not store insulin correctly, which

supports the findings of the present study. When properly stored, insulin maintains good stability and preserves its biological activity. To ensure its efficacy, insulin should not be exposed to temperatures below 2°C to avoid freezing, and when stored in a refrigerator, it should be kept away from the door compartment and distant from the freezer<sup>7</sup>.

Capillary blood glucose monitoring is critically important for the effective management of diabetes and is essential for tracking the patient's glycemic profile. In clinical practice, it is often observed that many patients with diabetes mellitus (DM) experience poor glycemic control due to the lack of regular glucose testing. The Brazilian Diabetes Society (SBD) emphasizes the need for frequent glucose monitoring in patients using insulin, recommending at least three measurements per day. However, this practice was hindered among the patients visited in this study, due to a shortage of test strips provided by the public health system and the limited availability of family members or caregivers to perform the tests multiple times a day. This situation is also reflected in Souza and Garcia (2021), where difficulty in accessing test strips negatively impacted monitoring frequency, compromising a practice considered essential for optimal glycemic control. Furthermore, recording glucose levels is crucial, as it facilitates analysis of the glycemic profile by health professionals, enabling clinicians to properly adjust insulin dosages and other medications<sup>4,8</sup>.

Studies indicate that diabetes mellitus (DM) is often associated with various disabilities, such as mobility difficulties and limitations in performing daily activities, with an even greater impact on elderly patients, who commonly experience functional decline related to aging. As a result, in some cases, insulin administration requires assistance from others, since this practice demands well-developed psychomotor skills—often reported by diabetic patients themselves as a challenge<sup>8,10</sup>.

Diabetes care within the scope of the Brazilian Unified Health System (SUS) is an essential part of the pharmacist's routine in Primary Health Care (PHC), involving the planning and implementation of educational and guidance-oriented actions. The participation of this professional in the multidisciplinary team of a Basic Health Unit is fundamental, as it promotes ongoing patient education with the goal of encouraging the proper use of insulin<sup>4</sup>. The pharmacist's effective role is crucial in guiding patients on medication-related care, including proper storage to prevent loss of efficacy, as well as providing instructions on injection sites and site rotation techniques. Studies have shown that the absence of pharmaceutical follow-up may result in poor glycemic control due to a lack of knowledge regarding these essential practices. Another key area of pharmacist guidance involves the correct use of devices such as glucometers, and the importance of daily glucose testing and recording, enabling patients and their families to understand the impact of this practice on blood glucose control<sup>7,10</sup>.

Thus, the role of the pharmacist in home visits to insulin-dependent diabetic patients in the studied area is highlighted, demonstrating a significant contribution to patient care through the guidance provided—essential for the proper management of the disease and glycemic control.

## FINAL CONSIDERATIONS

The relevance of the pharmacist's role within the multidisciplinary team, in various aspects of the treatment of insulin-using diabetic patients, becomes evident in the experience reported here, as such actions can positively impact the pharmacotherapy of these chronic patients. Despite limitations related to the study sample, due to the short time frame and challenges in accessing users, the questions and guidance provided by the pharmacist highlighted the importance of pharmaceutical follow-up conducted at home, which enabled individualized and closer care for both patients and their families. This follow-up allowed for the establishment of a bond capable of promoting behavioral changes among users, resulting in improved insulin use and, consequently, better glycemic profiles. In light of these findings, the need for more robust studies on the subject is emphasized, in order to further highlight the pharmacist's role in the care of chronic patients.

## REFERENCES

1. Lima CS, Araújo TCV. Visita domiciliar do enfermeiro da Estratégia Saúde da Família na atenção ao puerpério. *Rev Cien Plural*. 2021;7(3):290-307. doi: 10.21680/2446-7286.2021v7n3ID25143.
2. Rocha MA, Barbosa AVR, Franco LMA, Vieira CO, Queiroz PSS, Matalobos ARL, Teixeira CAB, Godoy JSR, Moreira MH. Visita domiciliar e a importância da equipe multidisciplinar no sistema único de saúde: um relato de experiência. *Res Soc Dev*. 2022 Feb 22;11(3):e26871. doi: 10.33448/rsd-v11i3.26871.
3. Bayer M, Borba HHL. Impacto do cuidado farmacêutico nos desfechos clínicos de um paciente com diabetes mellitus tipo 2 em uso de insulina: relato de caso. *Saúde (Santa Maria)*. 2021;47(1):e64169. doi: 10.5902/223658364169.
4. Souza AF, Garcia RMA. A importância da atenção farmacêutica para o acompanhamento do paciente portador de diabetes insulino-dependentes. *Saúde Dinâm*. 2021;1(2):1-7. doi: 10.4322/2675-133X.2022.007.
5. Pereira AM, Silvestre Pereira A. Atendimento multiprofissional nas consultas de puericultura. *Cadernos ESP - Revista Científica da Escola de Saúde Pública do Ceará*. 2023;17(1):1426. DOI: <https://doi.org/10.54620/cadesp.v17i1.1426>.
6. Abreu AYS de, Dias DR, Rocha FDS de, Nunes NDF, Santos RM Almeida, Sousa WF de, Oliveira IRN. Visita domiciliar como ferramenta fundamental do SUS: relato de experiência. In: *Anais do 1º Simpósio Interdisciplinar de Doenças Crônicas; 2022 set 29; Imperatriz, MA, Brasil*. Imperatriz: Even3; 2022. Disponível em: <https://www.even3.com.br/anais/isidc/532699>. Acesso em: 29 jan 2025.
7. Koch M, Pereira Marin M, Trindade OA, Dal Piva R. Avaliação sobre o armazenamento da insulina em uma amostragem de usuários. *Rev. Uningá [Internet]*. 2019 Mar. 12 [acesso em 2025 Jan. 25];56(1):17-25. Disponível em: <https://revista.uninga.br/uninga/article/view/2050>
8. SBD - Sociedade Brasileira de Diabetes. Diretrizes da Sociedade Brasileira de Diabetes: 2024. São Paulo: Clannad; 2024. Disponível em: <https://diretriz.diabetes.org.br/>
9. Almeida NMM, Belfort IKP, Monteiro SCM. Cuidado farmacêutico a um portador de diabetes: relato de caso. *Revista Saúde (Santa Maria)*. 2017;43(3):1-9. doi: 10.5902/2236583423938
10. Moreira L de A, Baiense ASR, Andrade LG de. Atuação do farmacêutico no mecanismo de ação da insulina NPH e R (regular) em idosos. *Rev Ibero-Americana de Humanidades, Ciências e Educação*. 2024;10(6):670–81. doi:10.51891/rease.v10i6.14382.

