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Experience of Nursing Practice Using an Artificial Intelligence–Based Voice Recognition Tool

Narváez-Martínez MA[1*], Galvis-Tovar S[2], Rosas-Santana A[1] and Hernández-Lozano H[2]

[1]Intensive Care Nurse, Master's, Cardioinfantil Foundation – Institute of Cardiology, Colombia
[2]University of Caldas, Colombia

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Corresponding Author:

Mario Andrés Narváez-Martínez,

Intensive Care Nurse, Master's Degree. Cardioinfantil Foundation – Institute of Cardiology, Colombia,
Tel: +57 3015950334;
Email: manarvaezma@unal.edu.co; manarvaezm@lacardio.org

Abstract:

Objective: To describe a clinical experience in nursing practice using an artificial intelligence–based voice recognition tool.
Method: This hospital management initiative was based on observation and descriptive analysis of a clinical nursing practice experience focused on the use of an artificial intelligence tool based on voice recognition, implemented in an Intensive Care Unit (ICU) at Fundación Cardioinfantil – LaCardio. The experience compared two clinical documentation practices: one performed using Dragon Medical One (DMO) software and the other using traditional typed transcription.
Results: A reduction of 15 minutes was observed for the nurse who used the voice recognition tool for nursing documentation compared with the nurse who used traditional documentation methods. The quality of nursing records was excellent; in both groups, no acronyms or abbreviations were used, documentation was timely, and notes adhered to the SAER framework (Situation, Background, Assessment, Recommendations, and Risks). A distinctive feature of the voice-generated notes was that 77.78% required editing to ensure transcription accuracy.
Conclusions: The use of the DMO voice recognition system reduced nursing documentation time by 50% compared with traditional typing. Dictated notes were more detailed and met SAER model standards, thereby enhancing the quality and continuity of care.
Keywords: Nursing; Voice Recognition; Artificial Intelligence; Electronic Health Records; Intensive Care Units.

Introduction

The evolution of clinical nursing documentation—from handwritten records to the Electronic Health Record (EHR)—has enabled the standardization of information, improved quality and safety, and promoted more efficient, patient-centered care. In this context, Artificial Intelligence (AI)–based tools, such as voice recognition systems, have begun to play a relevant role by facilitating agile and accurate clinical documentation [1]. This technology converts spoken language into text, allowing healthcare professionals to dictate clinical notes, record vital signs, and generate reports more efficiently. In Intensive Care Units (ICUs), where nursing staff spend approximately 35% of their shift on administrative tasks, such technological solutions are particularly valuable [2].

Although current evidence demonstrates the potential of voice recognition to streamline clinical documentation, findings regarding its overall effectiveness remain inconclusive. Many studies have been conducted in simulated environments or using observational designs, which limits their applicability to real-world clinical settings. Furthermore, there is a significant

gap in the scientific literature from Latin America, where further evidence is required regarding local clinical terminology, established workflows, and specific challenges related to technological adoption by nursing staff [3-5]. Despite its benefits, barriers persist, including reduced transcription accuracy due to human factors (accents, jargon, voice characteristics) and environmental factors (noise), as well as technical limitations such as the need for a stable internet connection [1,3,6,7]. The frequent need for post-dictation editing has also been reported, which may offset part of the expected gains in efficiency [3,4,7-9].

At Fundación Cardioinfantil, a high-complexity hospital, some nursing professionals have access to Dragon Medical One (DMO), an AI-powered voice recognition software that allows documentation with a reported accuracy of up to 99%. This system aims to increase productivity through voice dictation and features such as autotext, while complying with stringent security standards. The objective of this article is to describe a clinical experience in nursing practice using an artificial intelligence–based voice recognition tool.

Method

This clinical experience was conducted during the second half of 2025 as part of a hospital management project between the University of Caldas and Fundación Cardioinfantil – LaCardio. Direct observation was used to compare two nursing documentation practices in an Intensive Care Unit (ICU). Two specialist nurses participated voluntarily: one working the Morning Shift (MS), who used the DMO voice recognition software, and another working the Afternoon Shift (AS), who completed documentation using traditional typed transcription.

Data were collected using digital forms and organised in Microsoft Excel spreadsheets to analyse variables such as care workload, documentation time, record quality, and staff perceptions. Care workload was assessed using two scales: the Therapeutic Intervention Scoring System (TISS-28), which estimates treatment intensity based on patient severity and helps determine the optimal nurse-to-patient ratio for continuous care, and the Nursing Activities Score (NAS), which measures actual nursing workload by considering the time dedicated to specific care activities regardless of patient severity, making it useful for staffing planning in high-demand care scenarios [10]. The NAS assessment was conducted by an external observer to ensure comparable clinical conditions between participants.

Documentation time was measured using a digital stopwatch, recording the duration of each type of note (admission, progress, and handover) per shift and per patient. Record quality was evaluated using a checklist that included criteria such as the absence of unauthorised abbreviations, timeliness of admission notes, adherence to the SAER framework (Situation, Background, Assessment, Recommendation, and Risks), and the need for editing (applicable only to the nurse using voice recognition). Descriptive analysis was performed in Excel, and informed consent was obtained from participants in accordance with data protection regulations.

Results

The characteristics of the nurses are presented in Table 1. Care workload was measured considering ICU dynamics, with both shifts operating under the same nurse-to-patient ratio. Each nurse was assigned two patients during their work shift (see Figure 1). Regarding nursing documentation time, a reduction of 15 minutes was observed for the nurse using the voice recognition tool compared with the nurse using traditional

Table 1: Characteristics of nurses.

	Shift	Training	Registration tool used	Years of experience with the tool
Nurse A	Morning	Intensive care specialist	DMO	6 years
Nurse B		Intensive care specialist	Traditional typing	Not applicable

Source: own work

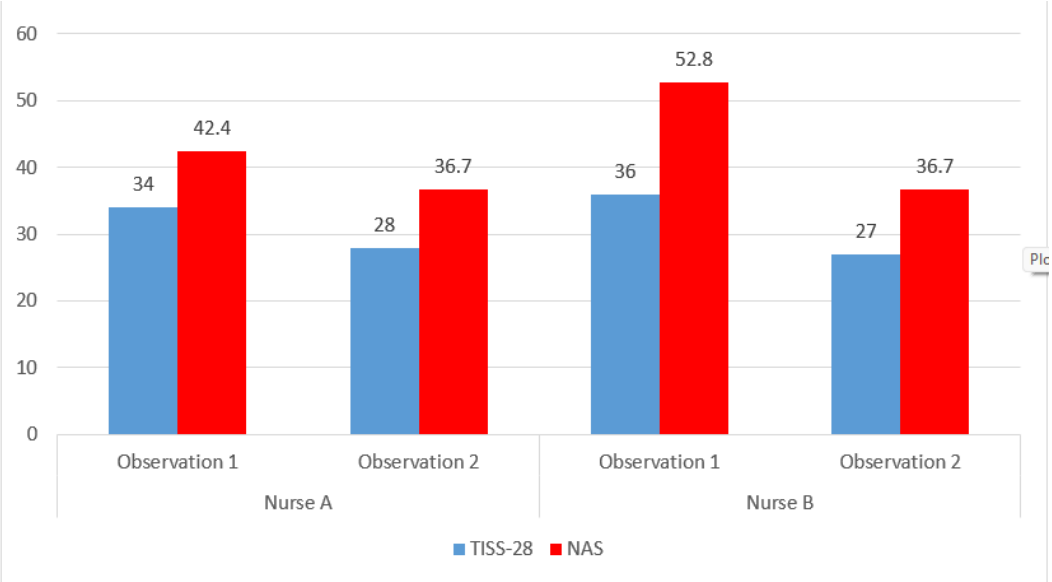
Table 2: Nursing record times

	Receipt note	Continuity note	Delivery note	Total time
Nurse A	00:03:24 00:02:34	00:01:39 00:00:38 00:01:43 00:01:50 00:01:22	00:01:23 00:01:21	00:15:51
Nurse B	00:07:22 00:05:47	00:04:34 00:05:06	00:05:47 00:05:35	00:35:01

Source: own work

Figure 1

Nursing care workload.



documentation methods. The morning-shift nurse completed more progress notes than the afternoon-shift nurse (see Table 2).

In terms of documentation quality, 100% of notes in both groups avoided acronyms or abbreviations, were completed in a timely manner, and adhered to the SAER framework. A distinctive feature of voice-generated notes was that 77.78% required editing to ensure transcription accuracy. Regarding staff perceptions, the morning-shift nurse reported that the system enabled time savings and greater efficiency but noted its dependence on an optimal internet connection. The afternoon-shift nurse reported limited typing skills, leading to errors and increased documentation time, and perceived voice dictation as a potentially faster alternative for administrative workload.

Discussion

The comparison of the TISS-28 and NAS scales revealed consistency in care workload between shifts, supporting the adequacy of a 1:2 nurse-to-patient ratio for analysis. This workload stability, despite variations in specific score components, suggests that both tools are useful for evaluating nursing workload in critical care settings [10]. Previous studies have supported the use of these scales to estimate nursing workload, with NAS being particularly sensitive to indirect activities such as documentation.

The most relevant finding was the significant reduction in documentation time achieved through voice recognition, representing an improvement in operational efficiency. The morning-shift nurse documented in less than half the time required by the afternoon-shift nurse, which is consistent with studies such as those by Mayer et al., who reported time savings ranging from 2.3 to 6.1 minutes depending on the clinical context [5].

However, the literature also reports important limitations regarding efficiency or accuracy when comparing dictation and typing, suggesting that benefits may depend on individual or contextual factors [4,7]. In this study, although dictated notes were more detailed and aligned with the SAER framework, 77.7% required subsequent editing, highlighting the need to improve system accuracy. This phenomenon has been documented by Lee et al., who identified high initial error rates in voice recognition systems [7].

Finally, the positive perception of both nurses regarding voice recognition is a key indicator of its feasibility. Dinari et al. emphasise that user acceptance is essential for the successful implementation of health technologies [3]. Differences in preference drivers—efficiency versus accessibility—suggest that this tool can adapt to varying technical competencies, thereby reducing individual barriers. Nevertheless, the need to edit up to 70% of notes, as reported in the literature, underscores the importance of improving system feedback mechanisms and phonetic adaptability. This experience, documented in a Latin American hospital, provides contextualised evidence that may inform strategic decisions regarding technological adoption in intensive care settings.

Conclusions

The use of the DMO voice recognition system reduced nursing documentation time by 50% compared with traditional typing, suggesting its utility in optimising workflow in high-demand environments such as ICUs. Dictated notes were more detailed and met SAER model standards, supporting the quality and continuity of care. However, 77.78% of dictated notes required editing, indicating technical limitations and the need for continuous training of both users and the software.

Despite these limitations, nurses expressed a favourable attitude towards the tool, highlighting its efficiency and accessibility, particularly for those who experience difficulties with typing.

Ethical Considerations

As this initiative corresponds to an institutional management project between Fundación Cardioinfantil – LaCardio and the Nursing Programme of the University of Caldas, an exemption from formal ethical approval was requested. Nevertheless, during the development of the experience, informed consent was obtained from the nursing staff through completion of the institution's personal data protection form.

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Conflicts of Interest

The authors declare no conflicts of interest.

Declaration on the Use of Generative Artificial Intelligence in Scientific Writing

During the preparation of this manuscript, the authors used COPILOT for language editing and stylistic correction. Following the use of this tool/service, the authors reviewed and edited the content as necessary and assume full responsibility for the content of the publication.

Author Contributions

All authors contributed to the conception and design of the study, data acquisition, and data analysis and interpretation. All authors participated in drafting the manuscript, critically revising its content, and approving the final version.

What is Already Known

- Voice recognition tools streamline clinical documentation in nursing.
- They improve operational efficiency, documentation quality, and continuity of care.
- They have high potential; however, further evidence is required.
- What This Study Adds
- Improvements in operational efficiency and workflow processes.
- Strengthening of continuity of care from the patient's perspective.
- Enhanced documentation quality through more detailed and timely clinical notes.

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30 N GOULD ST STE R SHERIDAN,
WY 82801, USA

Phone : 1-302-856-1224
E-mail : contact@clinmednexus.com

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