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# Implementing a Standardized Prehospital Medical Record in Emergency Nursing Practice: A Qualitative Study in an Urban EMS Service

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**Abstract**

Documentation is a fundamental component of professional nursing practice, supporting clinical accountability, continuity of care, and patient safety. In prehospital emergency settings, documentation is often challenged by time constraints, dynamic environments, and limited standardization. This study explored ambulance nurses' experiences following the implementation of a standardized prehospital medical record form in a municipal emergency medical service in Indonesia. A qualitative descriptive design was conducted at a Public Safety Center (PSC 119) in an urban setting. Four active ambulance nurses participated in a two-week implementation of the standardized form. Data were collected through a focus group discussion and analyzed using inductive content analysis, with independent coding and an audit trail to enhance trustworthiness. Six themes emerged: perceived additional workload, clinical benefits, operational barriers, administrative and communication barriers, professional challenges in documenting clinical aspects, and expectations for system optimization. Although initially viewed as increasing the workload, the standardized form was perceived as improving systematic assessment and completeness of documentation. Time pressure, operational demands, and uncertainty regarding diagnostic authority affected nurses' confidence and documentation practices. Overall, standardized prehospital documentation offers important professional and patient safety benefits but requires workflow-sensitive implementation, organizational support, and strengthened clinical confidence within nurses' scope of practice to promote sustainable adoption.

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## Introduction

Prehospital emergency nursing plays a critical role in early patient assessment, stabilization, and coordination of care in time-sensitive situations. Alongside rapid clinical interventions, nurses are responsible for maintaining accurate and systematic documentation, which supports clinical reasoning, professional accountability, continuity of care, and patient safety (Kemenkes RI, 2016; Wilesmith et al., 2025).

Despite its importance, documentation in prehospital settings is frequently challenged by unpredictable environments, limited time, operational constraints, and competing clinical priorities. These challenges may become even more pronounced during mass casualty incidents (MCIs), where multiple patients require simultaneous triage and coordinated management. In such contexts, structured documentation is essential to facilitate prioritization, resource allocation, interprofessional communication, and post-incident evaluation (Kementerian Kesehatan RI, 2024).

High-quality prehospital documentation supports clinical decision-making, reduces communication errors during patient handover, and provides legal and professional evidence of care delivery (Awanzo & Tjelmeland, 2025; Mashoufi & Al-Zarrad, 2023). Standardized documentation forms can improve data completeness, continuity of care, and multidisciplinary collaboration while also enabling quality improvement and research within emergency medical services (EMS) (Dahm et al., 2022; Miretta & Pietilä, 2022). However, implementation of structured documentation tools may be perceived as increasing workload or creating role-related uncertainty among frontline providers, particularly in dynamic emergency settings (Sveinbjörn et al., 2021).

In Indonesia, Public Safety Centers (PSC 119) serve as frontline prehospital emergency services staffed primarily by ambulance nurses. Although these nurses routinely manage emergency responses and disaster-related incidents, standardized prehospital medical record systems have not been consistently implemented. Evidence regarding nurses' experiences with such documentation initiatives remains limited, especially within developing EMS systems. Moreover, little is known about how standardized documentation interacts with operational constraints, professional role perceptions, and nurses' clinical confidence in the Indonesian context.

To address this gap, this study aimed to explore ambulance nurses' experiences following the implementation of a standardized prehospital medical record form in an urban Public Safety Center in Indonesia.

## Materials and Methods

This study employed a qualitative descriptive design to explore ambulance nurses' experiences following the implementation of a standardized prehospital medical record form within a municipal emergency medical service in Indonesia. The study focused on understanding perceived benefits, challenges, and professional implications of documentation in prehospital emergency care. The study was conducted at Public Safety Center (PSC) 119 Kota Malang, which operates under the Indonesian Integrated Emergency Medical Service System. The service provides prehospital emergency response in an urban setting and is staffed by ambulance nurses trained in Basic Life Support (BLS). At the time of the study, the participating nurses represented the active ambulance nursing workforce at the service.

A purposive sampling strategy was used to recruit ambulance nurses who had direct experience using the prehospital medical record form during the implementation period. All eligible ambulance nurses working at PSC 119 Kota Malang were invited to participate. Four nurses consented to and participated in the study, representing the entire ambulance nursing population at the service during the study period. Data collection continued until thematic saturation was reached, indicated by the absence of new emerging categories during analysis.

Prior to implementation, a preliminary needs assessment was conducted through direct observation and informal interviews to identify documentation-related challenges in the service. A literature review was subsequently performed using databases including PubMed and BMC Springer to identify evidence on standardized prehospital medical records and documentation quality in emergency medical services.

Three relevant peer-reviewed studies were identified, highlighting the role of standardized or electronic prehospital medical records in improving documentation completeness, interprofessional communication, and data quality in emergency medical services. These findings informed the selection and contextual adaptation of the prehospital medical record form used in this study.

The implementation began with a structured socialization session lasting approximately 60 minutes, during which ambulance nurses received education on the purpose, structure, and completion procedures of the prehospital medical record form. The session included guidance on triage identification, patient history documentation, vital sign recording, clinical assessment, interventions performed, provisional diagnosis, and time tracking of prehospital care processes.

Following the training session, the form was implemented in routine practice for 2 weeks. During this period, ambulance nurses used the standardized form to document all prehospital emergency cases attended by PSC 119 Kota Malang.

Following the two-week implementation period, data were collected through a focus group discussion (FGD) involving the four participating ambulance nurses. The FGD lasted approximately 30–45 minutes and was facilitated using open-ended guiding questions exploring:

1. Nurses' feelings regarding the use of the prehospital medical record form
2. Perceived barriers in using the form during emergency care
3. Professional and operational challenges encountered
4. Expectations and suggestions for future use

The discussion was conducted in person, audio-recorded with consent, and transcribed verbatim for analysis. An inductive content analysis approach was used to analyze the FGD transcript. The analysis began with open coding, followed by categorization of similar codes into subthemes and broader themes. Coding was conducted independently by two researchers to enhance analytic rigor. Discrepancies were discussed until consensus was reached.

An audit trail documenting analytic decisions was maintained throughout the process to ensure transparency and dependability.

To enhance credibility, investigator triangulation was applied through independent coding and peer discussion. Dependability was supported by maintaining a clear audit trail of methodological and analytic decisions. Reflexive discussions among the research team were conducted to reduce potential bias and strengthen confirmability. Detailed contextual descriptions were provided to improve the transferability of findings to similar EMS settings.

*Ethical approvals*

Comprehensive research and ethical clearance were obtained from Brawijaya University (01034/DST/UN10.F1701/B/PT/2026). Written institutional approval was also obtained from PSC 119 Kota Malang. Written informed consent was obtained from all participants.

## Results and Discussions

Participant Characteristics

Four ambulance nurses participated in the study, representing the entire active nursing workforce at PSC 119 Kota Malang during the implementation period. Participants consisted of two male and two female nurses. All held a Diploma III in Nursing and had more than five years of professional experience in prehospital emergency care. All participants were directly involved in the two-week implementation of the standardized prehospital medical record form.

Overview of Themes

Analysis of the focus group discussion generated six interrelated themes reflecting nurses' experiences during implementation:

1. Perceived additional workload
2. Perceived clinical benefits
3. Operational barriers]
4. Administrative and communication barriers
5. Professional challenges in documenting clinical aspects
6. Expectations for system optimization

These themes illustrate the complex interplay between documentation demands, professional identity, and contextual constraints in prehospital nursing practice.

*Theme 1: Perceived Additional Workload*

Participants initially described the form as an added responsibility, particularly because they were still required to complete the existing handover sheet.

One participant stated:

"At first, I felt slightly burdened because it was a new, additional task." (P1)

Another explained:

"It felt like doing the same documentation twice because we still had to fill in the handover sheet." (P2)

However, participants emphasized that the burden was perceived as manageable rather than overwhelming:

"It was not a heavy burden, just an adjustment." (P3)

*Theme 2: Perceived Clinical Benefits*

Despite concerns about workload, participants acknowledged that the standardized form supported more structured and comprehensive documentation.

"Honestly, we felt very helped by this form. Our documentation became more complete." (P2)

"From the beginning, I thought this form would really help us with documentation." (P4)

The form was perceived as guiding systematic patient assessment and improving clarity during handover to receiving facilities.

*Theme 3: Operational Barriers*

Operational constraints were frequently mentioned as challenges during implementation.

Subtheme: Ambulance Instability

Participants reported difficulty writing while the ambulance was moving.

"It is hard to write in the ambulance because the vehicle keeps moving." (P2)

"Yes, writing inside the vehicle is challenging." (P3)

*Subtheme: Time Constraints in High-Acuity Cases*

In critical situations, documentation was sometimes delayed.

"If the patient is very critical and we do not have time, we complete the form after the situation is under control." (P4)

These findings highlight the tension between immediate clinical priorities and documentation demands.

*Theme 4: Administrative and Communication Barriers*

Participants described difficulties completing certain administrative components of the form, particularly regarding the documentation of the attending physician (DPJP).

*Subtheme: Uncertainty Due to Physician Shift Changes*

"Sometimes when we return to base, the doctor has already changed shifts, so we do not know whom to write." (P1)

"Sometimes we leave the DPJP section blank because we are not sure." (P2)

This issue reflected communication gaps rather than resistance to documentation.

*Theme 5: Professional Challenges in Documenting Clinical Aspects*

Participants hesitated to complete the provisional diagnosis section.

*Subtheme: Reluctance to Document Diagnosis*

"There is a diagnosis section, and honestly, I do not feel confident filling it in." (P4)

"We still do not feel comfortable writing a diagnosis." (P1)

*Subtheme: Diagnosis Perceived as Physician Authority*

"We are not used to making diagnoses. Usually, that is the doctor's role." (P1)

This hesitation reflected perceived professional boundaries rather than a lack of clinical knowledge.

*Theme 6: Expectations for Optimization*

Participants expressed constructive suggestions for improving implementation.

*Subtheme: Need for Adequate Printed Forms*

"If possible, we would like more printed copies of the form." (P3)

*Subtheme: Preference for Practical Documentation Format*

Participants preferred paper-based documentation over digital platforms, which they perceived as less practical.

"We once used Google Forms, but we did not complete it consistently. Paper feels easier." (P1)

*Subtheme: Need for Clinical Training*

Participants requested additional training to enhance confidence in clinical documentation, particularly regarding provisional diagnoses.

“Maybe in the future, we could have training so we feel more confident when documenting diagnoses.” (P4)

*Interrelationship of Themes*

The findings demonstrate a dynamic relationship between perceived burden and perceived benefit. While documentation was initially viewed as an additional task within a high-pressure environment, it was simultaneously recognized as enhancing structure, completeness, and clinical clarity. Operational and administrative barriers influenced the feasibility of implementation, whereas professional boundary concerns shaped confidence in documenting diagnostic elements. Collectively, these themes reflect the systemic and professional factors influencing documentation practices in prehospital nursing care.

This study explored ambulance nurses’ experiences following the implementation of a standardized prehospital medical record form. The findings reveal an ambivalent response characterized by tension between perceived administrative burden and recognition of clinical and professional benefits. This dual response reflects the complex realities of prehospital emergency nursing, where rapid decision-making, environmental unpredictability, and documentation responsibilities coexist. Participants described documentation as an additional workload, particularly during high-acuity situations and time-sensitive emergencies. This finding aligns with broader nursing literature indicating that documentation demands may compete with direct patient care in fast-paced clinical environments. In prehospital settings, where nurses operate with limited resources and without immediate institutional support, the perceived burden may be intensified. The findings suggest that documentation is not merely a technical task but is closely intertwined with workflow design and operational feasibility.

At the same time, nurses acknowledged that the standardized form improved systematic assessment, enhanced completeness of clinical records, and supported continuity of care during patient handover. This reflects the fundamental role of documentation in strengthening clinical reasoning and professional accountability. Structured documentation tools may function as cognitive aids, guiding assessment processes and reinforcing adherence to clinical standards. From a nursing perspective, this supports the notion that documentation is an extension of clinical judgment rather

than a purely administrative obligation. A notable finding was the hesitation some nurses expressed when documenting provisional diagnoses. This may reflect perceived limitations in professional authority or uncertainty regarding the scope of practice in prehospital settings. Such ambiguity highlights the need for clearer role delineation and professional empowerment within emergency nursing systems. The implementation of standardized documentation tools should therefore be accompanied by clarification of clinical responsibilities and supportive training to enhance nurses' confidence in diagnostic reasoning within their scope of practice.

These findings underscore that the successful implementation of documentation systems in prehospital nursing requires more than technical adaptation. Organizational readiness, contextual alignment, and professional engagement are critical determinants. Interventions that acknowledge nurses' workflow realities and reinforce the professional value of documentation may reduce resistance and enhance sustainability. Overall, the study contributes to the growing body of nursing research examining documentation practices in high-acuity environments. In resource-constrained EMS systems, strengthening prehospital documentation may enhance patient safety, interprofessional communication, and quality monitoring, while simultaneously reinforcing the professional identity of ambulance nurses.

This study has several limitations. First, it was conducted in a single PSC 119 service, which may limit transferability to other EMS settings. Second, the number of participants was small because it reflected the entire ambulance nursing workforce available at the study site. Third, the implementation period lasted only two weeks, which may not fully capture long-term adaptation to the documentation system. Finally, data were collected through a focus group discussion, which may have introduced social desirability bias and influenced participants' responses. Future studies involving multiple EMS centers and longer implementation periods are recommended.

## Conclusion

The implementation of a standardized prehospital medical record form generated ambivalent responses among ambulance nurses, reflecting the inherent tension between documentation demands and the realities of emergency care. While initially perceived as an added administrative burden, the form was also recognized as a tool that strengthened systematic assessment, clinical accountability, and continuity of care. These findings highlight that documentation in prehospital nursing is not merely procedural but deeply connected to professional identity and clinical reasoning. Effective integration of documentation systems in prehospital settings requires contextual adaptation, workflow-sensitive implementation, and support for nurses' diagnostic confidence within their scope of practice. Strengthening documentation practices may enhance patient safety, interprofessional communication, and quality monitoring in emerging EMS systems. Future research should further examine sustainable implementation strategies and explore broader multi-site perspectives to improve transferability.

By strengthening prehospital documentation, nursing practice moves beyond recording events to reinforce its professional voice within emergency care systems.

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