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# Electronic Recording Culture among Maternal and Child Health Workers: A Case Study of E-RM Implementation at Adina Wonosobo Maternity Hospital

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**ABSTRACT**

**Background & Objective:** Digitalization in healthcare systems has driven the implementation of electronic medical records (EMR) as the primary means of improving the efficiency and quality of medical documentation. However, the successful implementation of EMR in specialized hospitals such as RSIA is greatly influenced by the work culture and recording practices of healthcare workers. This study aims to explore the electronic documentation culture among maternal and child healthcare workers at RSIA Adina Wonosobo, focusing on user perceptions, socio-cultural barriers, and adaptation strategies toward the EMR system. **Method:** This study employs a qualitative approach with an intrinsic case study design. Data were collected through semi-structured in-depth interviews, non-participatory observation, and document review. Analysis was conducted using a thematic approach through inductive coding stages. **Result:** The study findings indicate that healthcare workers' perceptions of EMR are ambivalent; the system is seen as facilitating data access but also increasing administrative burdens. Cultural barriers such as the dominance of manual record-keeping, resistance to change, and low participation in system design pose significant challenges. However, adaptive strategies were identified among younger healthcare workers, including peer training, utilization of underutilized system features, and hybrid record-keeping practices. **Conclusion:** The implementation of EMR in RSIA requires a socio-technical approach that is responsive to the values, perceptions, and work practices of healthcare workers. This study emphasizes the importance of user involvement in the digital transformation process and offers policy

recommendations to strengthen a sustainable electronic recording culture in maternal and child health facilities.

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## Introduction

Digital transformation in healthcare systems has become a global priority to improve service quality, patient safety, and data accuracy. One of the key innovations in this transformation agenda is the implementation of Electronic Medical Records (EMR) as a replacement for conventional manual medical records (Hossain et al., 2025; Zhang, Yu, & Hailey, 2012). In Indonesia, this policy has been reinforced by the issuance of Minister of Health Regulation No. 24 of 2022, which requires all healthcare facilities to adopt electronic medical record systems in their operations (Novianti & Bakhtiar, 2023).

However, the implementation of EMR in Indonesia still shows gaps, particularly in specialized hospitals such as Maternal and Child Hospitals (RSIA). The implementation of this system faces not only technical barriers such as infrastructure or data interoperability but also socio-cultural challenges, particularly in the documentation behavior of healthcare workers (Agustiany, Andriani, & Suwardhani, 2024; Susanti et al., 2022). Nurses, midwives, and obstetricians at RSIA have unique work patterns and perceptions toward digital documentation systems, differing from healthcare workers in general hospitals (Moore et al., 2025; Lee & Kim, 2020).

Previous research indicates that the main barriers to EMR implementation include low digital literacy, resistance to change, and insufficient structured training for medical staff (Choi et al., 2019; Wang, Hailey, & Yu, 2011). Unfortunately, most studies have focused on technical or administrative aspects, without extensively exploring the cultural dimensions of electronic documentation—that is, how healthcare workers understand, interpret, and apply digital documentation systems in their daily work practices (Yumul et al., 2023; Kumar & Sharma, 2022).

This study aims to bridge this gap by exploring the electronic documentation culture among maternal and child healthcare workers at RSIA Adina Wonosobo, a type C hospital in the highland region of Wonosobo District, Central Java. The geographical context and institutional characteristics of this hospital present unique challenges in EMR adoption, particularly in terms of infrastructure, digital literacy, and the work values of healthcare professionals (Scheibner et al., 2021; Hoque & Sorwar, 2017).

## Objective

This study aims to deeply understand how midwives, nurses, and specialists at RSIA Adina interpret and adapt the EMR system in their clinical work processes. Using a sociotechnical systems theory-based approach, this study will analyze the enabling and inhibiting factors that shape the culture of electronic record-keeping in the local context.

Based on the above background, this study is directed at examining in depth how healthcare workers, particularly those involved in maternal and child services, perceive the use of the electronic medical record (EMR) system at RSIA Adina. This study also seeks to identify various social and cultural barriers that may influence

electronic record-keeping practices in the hospital work environment. Additionally, this study will explore potential strategies that can be implemented to foster a more effective, adaptive, and sustainable electronic record-keeping culture within the context of maternal and child healthcare services.

By answering these questions, this study is expected to provide theoretical and practical contributions to the development of EMR systems in specialized hospitals in Indonesia, while enriching the literature on technology adoption in the context of healthcare work culture (Mayasafira & Almansoob, 2024; Palanisamy et al., 2021).

**Method**

This study uses a qualitative approach with an intrinsic case study design. This design was chosen to gain an in-depth understanding of the phenomenon of electronic record-keeping at RSIA Adina Wonosobo, taking into account the context and meaning inherent in the experiences of healthcare workers in clinical documentation practices. An intrinsic case study is particularly suitable when the primary focus of the research is not on generalizing findings but on achieving a rich contextual understanding of a specific case (Scheibner et al., 2021; Palanisamy et al., 2021).

RSIA Adina Wonosobo was selected as the research site because it is a type C maternal and child hospital operating in a semi-urban highland area. The geographical and socio-economic characteristics of patients, along with limited infrastructure conditions, make this institution representative for examining the challenges of EMR implementation in the context of maternal and child healthcare services (Susanti et al., 2022; Hossain et al., 2025).

Informants in this study included healthcare workers directly involved in maternal and child healthcare services at RSIA Adina, such as midwives, nurses, and obstetricians. Informants were selected purposively based on their active involvement in using the EMR system. Inclusion criteria included at least one year of experience using EMR in clinical practice and willingness to be interviewed in depth. The number of informants was not determined at the outset but was adjusted according to the principle of data saturation, i.e., when the data obtained was repetitive and no longer produced new findings (Moore et al., 2025; Yumul et al., 2023).

Data collection was conducted through semi-structured in-depth interviews aimed at exploring perceptions, experiences, and challenges encountered in the use of the EMR system. Additionally, non-participatory observations were conducted in the maternal and child health care unit to understand documentation practices, both digital and manual. Additional data were collected through a review of internal hospital documents such as standard operating procedures (SOPs), EMR training records, and user activity logs within the system. To enhance the validity and reliability of the findings, source and method triangulation techniques were used (Wang, Hailey, & Yu, 2011; Kumar & Sharma, 2022).

Data analysis was conducted thematically using an inductive approach. This process began with verbatim transcription of all interviews, followed by open coding to identify key units of meaning. These codes were then grouped into categories and developed into main themes representing the cultural phenomenon of electronic documentation in the RSIA environment. The analysis process followed the Braun and Clarke framework and was supported by the use of software tools such as NVivo to organize data systematically (Lee & Kim, 2020; Choi et al., 2019).

Ethical considerations were maintained through informed consent procedures provided to all informants before the interview process began. The informants' identities were kept confidential, and all data were stored securely and used solely for the purposes of this research. This study also obtained ethical approval from the ethics committee of the collaborating educational institution, as well as written approval from the management of RSIA Adina (Björvell, Thorell-Ekstrand, & Wredling, 2000; WHO, 2018).

**Results**

The results of this study describe the dynamics of electronic record-keeping culture at RSIA Adina Wonosobo through three main themes that emerged from the data analysis process, namely: perceptions of the EMR system, socio-cultural challenges in implementation, and adaptive strategies developed by health workers.

Most informants expressed ambivalent attitudes toward the EMR system. On one hand, they acknowledged that electronic record-keeping facilitates access to patient histories, accelerates data input processes, and supports more structured reporting. However, on the other hand, concerns arose regarding additional workloads, the complexity of the system interface, and the loss of flexibility in documenting narrative medical information. Some midwives stated that they felt forced to follow the system without ever being involved in the design process or technical training, which led to passive resistance to change. These findings are in line with studies showing that acceptance of EMR is strongly influenced by perceptions of usefulness and user experience (Moore et al., 2025; Choi et al., 2019).

**TABLE 1.** Themes and Subthemes from Thematic Analysis Results

| Main Theme | Sub-theme | Key Quote from Informant |
|---|---|---|
| Perceptions of EMR | Ease of access and speed of recording | "When a child is sick, we can immediately see their immunization data or previous examinations, without having to open each manual file one by one." (*Informant 4, Midwife*) |
| | Concerns about additional administrative burdens | "Sometimes it's tiring, having to hold the baby but also inputting data into the computer. Sometimes I even fill it in later." (*Informant 2, Nurse*) |
| | Not involved in system decision-making | "The system was already in place, we were just told to use it. We weren't invited to discuss it at the beginning." (*Informant 7, Obstetrician-gynecologist*) |
| Socio-cultural challenges of electronic record-keeping | Reliance on manual recording | "I am more comfortable handwriting, it feels safer. Especially if the system is slow." (*Informant 3, Senior Midwife*) |
| | Delegation of recording to junior staff | "If I am busy in the clinic, I usually ask the nurse to help me fill in the medical record." (*Informant 5, Obstetrician*) |

| | | |
|---|---|---|
| | Irregularity of data input between shifts | "The afternoon shift often has incomplete input. Sometimes inpatients are not updated until morning." (*Informant 6, Head of Room*) |
| Health worker adaptive strategies | Peer support and informal mentoring | "I usually teach friends who are not used to it, so that we both work quickly." (*Informant 1, Junior Nurse*) |
| | Use of concise features and templates in the EMR system | "There are shortcuts in the system, for example templates for newborns. It speeds things up, but many people don't know." (*Informant 8, Midwife*) |
| | Hybrid documentation initiatives (manual and digital) as a form of transition | "I still handwrite the daily notes first, then in the afternoon I input them into the EMR. So that the data will still be there if the network is disrupted." (*Informant 4, midwife*) |

The main challenge in implementing EMR at RSIA Adina stems from socio-cultural factors that are deeply rooted in service practices. One of the most dominant obstacles is the habit of manual recording that has been established over many years, especially among senior midwives. This habit not only reflects limited digital literacy, but is also closely related to professional identity and a sense of security in medical recording. Additionally, there is a tendency to delegate digital documentation to administrative staff or junior nurses, resulting in the lack of direct involvement of primary healthcare providers in the documentation process. This situation is exacerbated by the lack of systematic supervision and weak monitoring of individual EMR usage. Similar phenomena have been identified in several studies related to the role of work culture in the successful adoption of EMR (Yumul et al., 2023; Kumar & Sharma, 2022).

However, this study also found strategic efforts by some healthcare workers to overcome these barriers. Some informants, particularly younger generations and new staff, demonstrated higher openness toward the EMR system and actively served as bridges between manual and digital systems. They participated in informal initiatives such as peer mentoring, creating short notes to facilitate data entry, and utilizing system features rarely used by other users. These efforts reflect a bottom-up form of adaptation and have the potential to shape a more collaborative electronic record-keeping culture in the future. In the context of socio-technical system studies, these findings emphasize the importance of considering the relationship between people, technology, and organizational structures in supporting the sustainability of digital transformation (Scheibner et al., 2021; Lee & Kim, 2020).

Overall, the results of this study indicate that the success of EMR implementation cannot be separated from cultural factors that shape how healthcare workers interact with technology. Changes to the documentation system require more than just the provision of digital infrastructure; they demand a transformation of values, perceptions, and work practices that take place within a specific context.

**Discussion**

The results of this study confirm that the success of the implementation of the electronic medical record (EMR) system at RSIA Adina is not solely determined by the availability of digital infrastructure, but is greatly influenced by social and cultural factors inherent in the work practices of healthcare workers. These findings align with the socio-technical systems approach, which emphasizes the importance of the interconnection between humans, technology, and organizational structures in shaping effective and sustainable work practices (Scheibner et al., 2021; Hoque & Sorwar, 2017).

The ambivalent perceptions toward EMR, as found in this study, reflect conditions also documented in previous literature. Some informants appreciated the ease of accessing patient data offered by EMR, but on the other hand felt burdened by the system's user-unfriendly interface and increased administrative workload (Moore et al., 2025; Choi et al., 2019). These negative perceptions have the potential to hinder technology adoption, especially if not balanced with adequate training and a participatory approach in system design (Lee & Kim, 2020).

The cultural barriers to documentation identified, such as the dominance of manual writing habits and the delegation of digital documentation to junior staff, represent forms of passive resistance that have been widely reported in the context of technology adoption in the healthcare sector of developing countries (Kumar & Sharma, 2022; Yumul et al., 2023). These findings suggest that digitization does not automatically change work practices but must go through a profound cultural transition process. In the context of RSIA, manual documentation also serves as a symbol of professional experience and control, particularly for senior medical staff, as noted by Björvell, Thorell-Ekstrand, & Wredling (2000).

The phenomenon of delegating documentation to younger nurses or administrative staff indicates low ownership of the system by core healthcare staff. This contradicts the principle of accountable documentation and may reduce data quality in the EMR system (Wang, Hailey, & Yu, 2011). In this study, this is exacerbated by the lack of ongoing training and the absence of an incentive system for active EMR users, as also highlighted by Palanisamy et al. (2021).

Nevertheless, this study also found forms of adaptation and innovation among younger healthcare workers who are more open to technology. These findings align with studies showing that digital natives tend to develop informal solutions such as peer mentoring and exploring underutilized system features (Susanti et al., 2022; Mayasafira & Almansoob, 2024). These informal strategies have the potential to form the basis for developing more contextual and sustainable training approaches.

In the context of policy, the results of this study support the importance of shifting from a top-down approach to a participatory approach in the implementation of EMR. Many healthcare workers at RSIA Adina feel that they are not involved in the decision-making process regarding the design and implementation of the system, resulting in a low sense of ownership (Hossain et al., 2025). Therefore, actively involving end-users in the system redesign process can enhance the effectiveness and acceptance of the technology (Moore et al., 2025; Zhang, Yu, & Hailey, 2012).

Additionally, this study emphasizes that establishing an effective electronic documentation culture requires a long-term strategy that is not only technical but also educational and reflective. Integrating digital literacy training into healthcare professionals' professional development, monitoring system usage based on feedback,

and strengthening the role of clinical leaders as models for digital documentation can be key interventions moving forward (Gupta et al., 2022; Liu et al., 2023).

Thus, these findings reinforce the argument that the digitization of health systems requires an adaptive approach to the social and cultural structures existing in each institution. RSIA, as a health facility with specific characteristics in maternal and child care, requires a digital transformation strategy that takes into account the sensitivity of the profession, work relationships, and the values that exist within its healthcare community.

**Conclusion**

This study concludes that the success of the implementation of the electronic medical record (EMR) system at RSIA Adina Wonosobo is greatly influenced by the social and cultural dimensions inherent in the work practices of health workers, particularly in maternal and child health services. Although the EMR system is recognized for its benefits in terms of data access efficiency and structured documentation, cultural barriers such as the dominance of manual recording habits, resistance to change, and limited participation in technical decision-making processes act as significant obstacles.

Healthcare workers' perceptions of EMR vary widely, ranging from enthusiasm to skepticism, all rooted in work experience, digital literacy levels, and the extent to which they are involved in the implementation process. Practices such as delegating documentation to junior staff and using dual documentation (manual and digital) indicate tension between the new system and the old work culture that has not yet been fully integrated.

However, this study also highlights the potential for internal transformation through informal initiatives such as peer-to-peer training, system feature exploration by younger generations, and hybrid transition strategies. These findings underscore the importance of designing implementation approaches that are not only technical but also responsive to social context, work structures, and individual perceptions of technology.

Practically, this study recommends the need for active involvement of healthcare workers in the design and development process of the EMR system, strengthening digital literacy capacity through tiered training, and fostering a collaborative documentation culture through reflective and community-based approaches. Additionally, strengthening user-based monitoring and evaluation systems, as well as developing contextual and user-friendly EMR features, are important interventions to enhance system acceptance in the future.

The policy implications of these findings point to the need for regulations that not only mandate the use of EMR but also support capacity building and a work culture that is adaptive to digital transformation, especially in specialized hospitals such as RSIA, which have unique service characteristics and organizational structures.

Thus, this study contributes conceptually to the literature on electronic record-keeping culture in maternal and child health facilities, as well as practically in designing more contextual, inclusive, and sustainable EMR implementation strategies.

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