



E-ISSN:
2721-13988

Legal Review of the Use of Electronic Signatures by Patients in the Implementation of Electronic Medical Records (EMRs)

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Abstract.

Digital transformation in the healthcare sector has shifted the medical record system from physical to electronic format, as stipulated in Minister of Health Regulation Number 24 of 2022 concerning Medical Records. However, there is a legal issue stemming from this development: the validation of patients' or families' electronic signatures as a form of informed consent or informed refusal of medical procedures. Although Law Number 11 of 2008 concerning Electronic Information and Transactions has recognized the validity of E-Signatures, specific regulations in the healthcare context remain unclear. In implementing E-Signature, a problem arises from the high cost of certified E-Signature services, which remain prohibitive for all hospitals. This article uses a normative, legislative approach to examine legal certainty, implementation challenges, and policy recommendations for the use of Electronic Signatures in Electronic Medical Records (EMRs). The results of this study indicate the need for specific regulations related to E-Signatures for healthcare services. This is because E-Signatures in healthcare services will strengthen technical regulations, establish system-wide standardization, and provide financial support to ensure the legality and ease of implementation for patients and their families.

Keywords: Electronic Medical Record, Electronic Signature, Health Law.

1 Introduction

Digital transformation in healthcare has become a strategic agenda for the Indonesian government. Significant changes have occurred in the management of medical records, which were previously regulated by Minister of Health Regulation No. 269/Menkes/Per/III/2008 concerning physical-based Medical Records. This has now been replaced by Minister of Health Regulation No. 24 of 2022 concerning Medical Records, which regulates the use of Electronic Medical Records (EMRs). This transition aligns with the digitalization and recognition of Electronic Signatures (E-Signature) policies stipulated in Law No. 11 of 2008 concerning Information and Electronic Transactions and its amendments.

Minister of Health Regulation Number 24 of 2022 defines EMRs as a collection of patient information and data managed electronically with due regard for data security, confidentiality, and integrity. According to Article 1, number 12 of the Electronic Information and Transactions (EIT) Law, an electronic signature is a signature consisting of electronic information attached, associated, or linked to other electronic information and used as a means of verification and authentication. E-Signatures are divided into:

- a. Certified E-Signature: using the services of an official Electronic Certification Provider (ECP) such as Perum Peruri.



- b. Uncertified TTE: made without a certificate from ECP, but still legally recognized if it meets the requirements of Article 11 of the Electronic Information and Transactions (EIT) Law.

In the implementation of E-Signatures in hospitals, especially in the validation of informed consent and refusal of medical action, patients or families face several problems (Fitriyah et al., 2022). One problem is the lack of clarity in technical regulations regarding the implementation of E-Signatures in EMRs in healthcare facilities. Furthermore, the high cost of certified E-Signature services, such as those provided by Perum Peruri, is also a common issue. Limited technological infrastructure in some hospitals in remote/underdeveloped areas is also a common issue (Dana et al., 2025). Furthermore, limited human resource capacity in operating the E-Signature system is also a serious issue. There are also legal certainty issues regarding the validity of patients' E-Signatures in the context of informed consent and refusal of medical procedures (Sihombing, 2020).

These problems have underscored the need for a comprehensive legal review, government regulations, and hospital regulations to ensure that E-Signatures in Electronic Medical Records (EME) have a strong legal basis, clear implementation procedures, and are accessible equally to all health care facilities throughout Indonesia.

2 Method

This research employs a normative, statutory approach, drawing on primary legal materials, including laws and regulations issued by the Minister of Health, as well as secondary legal materials such as books, journals, and previous research (Sihombing & Haditas, 2022). This method is used to examine the Electronic Information and Transactions (EIT) Law and the Minister of Health Regulation. A conceptual approach is also used to analyze the concept of legal certainty and its application to patients' E-Signatures in Electronic Medical Records.

3 Result and Discussion

3.1 Basic Concepts of Electronic Signatures and Electronic Medical Records

An electronic signature (E-signature) is a signature consisting of electronic information placed, associated, or linked to other electronic information used as a means of verification and authentication. E-signatures are a form of technological advancement. Meanwhile, the signatory is a legal subject associated with or related to the electronic signature. According to Article 11 of the EIT Law, electronic signatures have legal force and valid legal consequences provided they meet the requirements. Of the several requirements related to electronic signatures, those that have legal force are created using services from electronic certification providers, and this has been implemented in several hospitals. E-signatures in healthcare facilities, such as hospitals, must use a secure encryption system to avoid the risk of forgery or misuse by irresponsible parties (Ardianto, Sabran, & Nurjanah, 2024).

Medical records were initially kept on paper, but in the 21st century, marked by technological advances, conventional paper records are no longer sufficient. Medical records need technological tools to be more effective and efficient, and to facilitate patient healthcare services. One health information technology that aligns with current globalization is the use of



Electronic Medical Records. Electronic Medical Records are computerized health information systems that provide detailed records of patient data, medical history, allergies, and laboratory test results. Some also include decision support systems.

Electronic Medical Records themselves have several advantages, primarily preventing medical errors such as prescribing errors. Prescribing errors are broadly divided into five categories: wrong patient, wrong drug, wrong dose, wrong route, and wrong timing. In practice, this sometimes occurs due to long working hours, decreased physician focus, a lack of experience and pharmacological knowledge, and minimal explanation of therapy to patients. Implementing electronic medical records can reduce errors in prescription interpretation caused by illegible handwriting, as every data entry is done on a computer, ensuring clear, accurate information (Kesuma, 2023).

E-signatures, a product of technological development, are part of electronic medical records, in which hospitals store patient-related data digitally. However, not all hospitals have the same technology, creating disparities in healthcare services. In practice, E-signatures also incur fees, which can be quite burdensome for patients. Therefore, while E-signatures can make healthcare services more efficient, several challenges to their implementation will be discussed in the next sub-chapter.

3.2 Challenges of Implementing Electronic Signatures in the Health Sector

It is necessary first to examine the legal basis for the use of E-Signatures in hospitals. Article 11 of the EIT Law sets out the legal requirements for an E-Signature, including uniqueness, verification, and the owner's complete control. Minister of Health Regulation No. 24 of 2022 concerning Medical Records recognizes electronic documents as medical records, but does not yet establish a detailed protocol for the use of E-Signatures for patients. Similarly, Law No. 29 of 2004 concerning Medical Practice and Law No. 44 of 2009 concerning Hospitals require consent for medical procedures, but do not specifically regulate their electronic form.

In practice, the lack of specific regulations regarding electronic signatures in healthcare services presents several challenges. One challenge is the lack of detailed regulations: there are no technical regulations from the Ministry of Health on the format, security, and procedures for electronic signatures (TTE) for patients. Furthermore, there is the high cost, as official ECPs, such as Perum Peruri, charge a fee per certificate (Aini et al., 2024). In terms of infrastructure readiness, it is also quite problematic because not all hospitals have adequate facilities for E-Signatures, even though electronic medical records should be mandatory in every healthcare facility in Indonesia by December 31, 2023 (Azzahra & Sugiarti, 2025).

Another problem stemming from Electronic Medical Records is patient data security. Based on a study conducted at Dr. Soediran Mangun Sumarso Wonogiri Regional General Hospital, outpatient electronic medical records, reviewed from the perspective of patient data security, showed that privacy was appropriate, with a username and password for each user and an automatic log-out feature. Data security regarding authentication was valid. This was demonstrated by the implementation of an electronic signature feature in the form of a QR Code. However, patient data security in terms of access control was not appropriate because there were no standard operating procedures regarding policies or procedures for operating the electronic medical record system (Melisa, Sukmaningsih, & Licia, 2024).

Therefore, due to the lack of specific regulations regarding the procedures and intricacies of E-Signatures in Electronic Medical Records, several problems have arisen. The imposition



of fees for the certification of Electronic Signatures has made a technology that should simplify, rather than complicate, healthcare administration. The uneven distribution of Electronic Medical Records infrastructure has also created inequalities in healthcare services. Data security is also a crucial issue for both patients and healthcare providers. Alternative solutions are needed that can address these challenges. One solution is to develop national standards for implementing E-Signatures in healthcare facilities. Furthermore, the government needs to subsidize the cost of E-Signatures. The use of uncertified E-Signatures with additional security measures as a temporary solution is also worth considering.

4 Conclusion

The article's results show that, although E-Signatures have a valid legal basis in Indonesia, technical regulations regarding patient authentication of EMR documents remain unclear in this context. Several obstacles, including high costs, limited infrastructure, and the lack of standardization for E-Signatures in EMRs, hinder implementation. Therefore, the government's role is crucial in addressing the problems arising from this regulatory vacuum. The Minister of Health, in particular, needs to issue official technical guidelines regarding the use of E-Signatures in EMRs. The government also needs to provide subsidies or affordable financing schemes for EMRs in hospitals. Strengthening outreach and training for healthcare workers and patients on the use of EMRs is also an important step, as is establishing national security standards to ensure the integrity and validity of EMRs.

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E-ISSN:
2721-13988

PROCEEDINGS OF THE INTERNATIONAL CONFERENCE OF GRADUATE
SCHOOL ON SUSTAINABILITY (ICGSS)

10th International Conference on Sustainability (ICoS10)

University of Merdeka Malang, November 15, 2025

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