

Legal Protection of Patients and Responsibilities of Artificial Intelligence-Based Telemedicine Health Services in Indonesia

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ABSTRACT

The advancement of digital technology in healthcare has fostered the emergence of telemedicine powered by artificial intelligence (AI), particularly within medical practice. In Indonesia, however, this rapid development has not been matched by clear legal safeguards for either patients or medical professionals. The central issues concern the extent of patient protection and the allocation of liability when errors occur in AI-assisted telemedicine services. This study employs a normative juridical approach, supported by statutory analysis, conceptual inquiry, and comparative legal study. The findings reveal that Indonesia's health regulations remain general in nature and do not specifically define liability boundaries in AI-based medical practice. Comparative analysis with the European Union's AI Act demonstrates comprehensive frameworks requiring conformity assessments, transparency, and human oversight, while India's Ethical AI Guidelines in Kerala and Bengaluru jurisdictions provide soft law approaches to medical AI governance. This study contributes a novel system-centric liability model for medical law that distributes responsibility among physicians, platform providers, and developers based on their respective roles and control over AI systems. The absence of a lex specialist and ambiguity regarding legal subjects create potential injustice. This research provides the first comprehensive framework for policymakers and health technology providers in Indonesia, recommending precautionary principles with algorithmic safety requirements, independent audits, and a proportional shared liability mechanism to ensure accountability and patient protection in digital healthcare systems.

KEYWORDS

Telemedicine, Artificial Intelligence, Patient Protection, Legal Liability, Health Regulation



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INTRODUCTION

Digital transformation has been a major driving force in revolutionizing the global healthcare system (Ibrahim et al., 2023; Singh et al., 2021; Yeganeh, 2019). One of the most significant manifestations of this change is the development of telemedicine practices that are now increasingly sophisticated thanks to the integration of artificial intelligence (AI). AI technology in telemedicine not only improves the accessibility and efficiency of services but also enables the delivery of medical services across geographical and time boundaries. The use of AI has encompassed a wide range of applications such as clinical decision support systems, medical image analysis, therapeutic supervision, and healthcare workforce workload prediction (Topol & Meskó, 2023). The World Health Organization calls telemedicine a crucial element to achieve universal health coverage in the digital era (WHO, 2024).

The advancement of health services through telemedicine also presents juridical challenges that are not simple (de Oliveira Andrade et al., 2022; Nittari et al., 2020). While AI technology offers great potential in aiding the diagnosis and treatment process, the validity of algorithm-based diagnoses, the protection of patient data, and the limits of legal accountability are crucial issues that have not been fully addressed. In practice, AI system failures have caused harm to patients, as reflected in a number of litigation cases such as in Kerala and Bengaluru,

India, where AI-based diagnostic systems were proven to fail to detect serious conditions, causing delays in diagnosis and legal consequences (Arya, 2025; Escalé-Besa et al., 2024). This issue shows that AI is not just a technical tool but an entity that factually influences medical decision-making, so it requires a clear accountability framework.

Indonesia has not yet had a specific legal framework (*lex specialis*) that explicitly regulates the use of AI in medical services. Law Number 17 of 2023 concerning Health and Law Number 27 of 2022 concerning Personal Data Protection are still general and do not regulate technical specifications or the distribution of legal responsibilities between medical personnel, service providers, and technology developers. In addition, there are no legal provisions governing the validity of algorithms, AI audit mechanisms, and informed consent mechanisms specific to AI systems. This legal uncertainty creates the potential for violations of patients' rights, especially in the context of malpractice based on algorithmic errors, and triggers confusion in determining which legal subjects are responsible in the event of a system failure.

The urgency of this research is even stronger considering the rapid growth of Indonesia's digital health market, which is projected to reach USD 3.5 billion by 2030 (Nexdigm, 2024), as well as the increasing dependence of people on application-based health services. With the increasing reliance on AI systems in healthcare, patient protection must be balanced with legal certainty that ensures fairness and accountability for all actors involved in the telemedicine ecosystem. Other countries such as the European Union have drafted a comprehensive framework through the Artificial Intelligence Act that establishes the principles of accountability, transparency, and strict oversight of medical AI systems (European Commission, 2021).

Based on this background, this study aims to examine in depth the form of legal protection for patients in AI-based telemedicine practices in Indonesia and identify the appropriate legal accountability model in the event of misdiagnosis due to the use of AI systems. This study will also compare national legal instruments with international standards and evaluate the relevance of existing regulations to the complexity of technological interventions in medical services. This study is the first to comprehensively evaluate AI-based telemedicine regulation in Indonesia, proposing a shared liability model that balances innovation with patient protection.

METHOD

This research uses a normative juridical approach (doctrinal legal research) that focuses on the systematic study of written legal norms, doctrines, legal principles, and court decisions relevant to the use of artificial intelligence (AI) in telemedicine practice. This approach allows for a critical analysis of positive legal constructions in response to the development of digital medical technology, particularly in the context of legal protection for patients and the legal accountability of medical personnel. The research also adopts a conceptual approach to explore the development of new legal norms that have not been explicitly listed in Indonesian laws and regulations (Marzuki, 2021; Soekanto & Mamudji, 2021).

The choice of a normative juridical approach is theoretically justified because the object of study is written norms, principles, and doctrines that demand systematic doctrinal analysis to test the coherence, gaps, and disharmony of norms (Soekanto & Mamudji, 2021; Marzuki,

2021). Strengthening the conceptual approach is based on the progressive legal idea that law is dynamic and needs to respond to socio-technological changes, including AI in health services, through the formulation of new norms that are just (Rahardjo, 2011; Hildebrandt, 2015). The comparative approach is justified by a comparative functional method to trace best practices across jurisdictions and assess the transferability of norms (Zweigert & Kötz, 1998; Yin, 2018). Because this study is qualitative-doxtrinal, its methodological legitimacy is also supported by the principles of qualitative research design that emphasize conceptual argumentation, theory-laden analysis, and analytic generalization instead of statistical tests (Creswell, J.W. & Creswell, J.D., 2023). Thus, the combination of these approaches is in line with international doxtrinal and comparative legal research standards to build a reconstruction of legal responsibility and patient protection in AI-based telemedicine.

This type of research is descriptive-analytical, aiming to describe and analyze the legal arrangements regarding AI-based telemedicine practices, as well as their impact on patients' legal protection. The research was carried out through library research on primary, secondary, and tertiary legal materials that were analyzed deductively-qualitatively. This technique does not use numerical data but focuses on the interpretation of legal norms to identify regulatory gaps, norm disharmony, and the need for legal reform in the digital healthcare sector.

Three approaches are used in this study: (1) a legislative approach to examine national regulations such as Law Number 17 of 2023 concerning Health, Law Number 27 of 2022 concerning PDP, as well as Government Regulation Number 28 of 2024, Regulation of the Minister of Health Number 20 of 2019, and Regulation of the Minister of Health Number 24 of 2022; (2) a comparative approach by looking at practices in other countries, such as the regulation of the Artificial Intelligence Act in the European Union and the telemedicine legal liability system in India; and (3) a conceptual approach to constructing a theoretical framework of legal responsibility in an AI-based health ecosystem.

The source of legal materials used consists of: (a) primary legal materials, namely relevant national and international laws and regulations; (b) secondary legal materials, in the form of academic literature, scientific journals, seminar results, and opinions of digital health law experts; and (c) tertiary legal materials such as legal dictionaries and encyclopedias. Data collection is carried out through offline (library) and online document studies (legal databases and international journals such as Elsevier, Scopus, and others).

The analysis of legal materials is carried out in a qualitative juridical manner using deductive reasoning. This approach is used to evaluate the conformity of existing norms with the practice of implementing AI in telemedicine as well as formulate normative recommendations. The focus of the analysis is directed at the structure of legal responsibility, patient protection mechanisms, and the basis for the preparation of *lex specialis* in Indonesia to regulate AI in the health sector. The results of the analysis are aimed at providing recommendations for legal reformulation, including the design of a shared liability mechanism, algorithmic audits, and strengthening patient rights in the digital health system in Indonesia.

Research limitations include: (1) library-based methodology without empirical interviews with practitioners; (2) analysis limited to publicly available written norms, doctrines, and decisions; (3) reliance on jurisprudence analogies for AI liability due to absence

of specific case law; and (4) temporal constraints limiting evaluation of rapidly evolving regulatory developments in comparative jurisdictions.

RESULT AND DISCUSSION

AI Regulation Gaps and Inequities in Telemedicine in Indonesia

Technological advances never wait for legal readiness. This is not just an adage, but a reality that the Indonesian legal system is currently facing in response to the rapid adoption of artificial intelligence in health services. The practice of telemedicine, which was originally designed as a solution to access services during the pandemic, is now transformed into a telemedicine service with an AI-based system that is able to assist users in making medical decisions, ranging from medical image analysis, initial diagnosis to initial medical advice in the flow of health services. However, this rapid change is not accompanied by the presence of prescriptive and contextual regulations.

The current national legal framework, such as Law No. 17 of 2023 concerning Health and Minister of Health Regulation No. 20 of 2019 concerning the Implementation of Telemedicine, also still assumes a person-to-person relationship, namely between doctors and patients. In fact, in AI systems, the machine-to-patient dimension is starting to take on a substantive role. There is no explicit legal recognition of algorithmic decisions as entities that can cause legal consequences. This creates an interpretive gap, especially in terms of who is responsible in the event of a loss or failure of diagnosis by the system. In addition, even though Indonesia has passed Law Number 27 of 2022 concerning Personal Data Protection (PDP), the norm still focuses on the security aspect of user data and has not yet detailed regulations on data bias, training datasets, and algorithmic harm typical of medical machine learning systems. In the context of AI learning from millions of medical records, the absence of oversight of the validity and diversity of training data can lead to clinical discrimination that is not detected by users or accompanying physicians.

The absence of the principle of algorithmic transparency and the necessity of human-in-the-loop in Indonesian regulations also makes the AI telemedicine system work in a black box that cannot be legally audited. Other countries, such as the European Union, have classified AI systems in healthcare as high-risk systems in the AI Act, and require such systems to be subject to ex-ante testing, accountable documentation, and human supervision. Indonesia's lagging behind in responding to the normative dimension of technology creates an asymmetry between the speed of innovation and legal certainty.

The Construction of Legal Liability in AI-Based Medical Errors

In the Indonesian legal system, liability in medical practice is generally constructed through a civil liability approach on the basis of default and unlawful acts (PMH). However, when AI technology enters as a clinical decision-making actor, the legal construction becomes problematic. AI, as a system without legal personality, cannot be directly sued. Normatively, there are several models of responsibility that can be considered:

- a. The responsibility of doctors as system users, based on the principle of duty of care;
- b. The responsibility of the telemedicine platform provider, on the basis of the responsibility of the service provider, in this case the agency also plays a role (hospital, service provider or system provider); and

- c. The responsibility of the algorithm developer, especially if an error occurs due to a defect in the design of the system or the data used for training.

These three actors form a chain of responsibilities that should not be broken, but in practice create a grey area. Doctors feel they can't fully control the system's output, while AI developers claim the system is just an aid. On the other hand, patients do not have the technical capacity to prove system errors, so the burden of proof becomes very heavy and unfair.

The analysis of legal liability in the context of AI-based telemedicine needs to be linked to Indonesian jurisprudence. While there have been no explicit cases related to AI, malpractice rulings can be an important analogy. Supreme Court Decision No. 365 PK/Pid/2012 affirms the criminal responsibility of doctors who neglect to meet professional standards, thus placing doctors as the main subject of personal liability. Meanwhile, Supreme Court Decision No. 779 K/Pdt/2014 related to Children's & Bunda Harapan Kita Hospital shows that hospitals as corporations can also be held civil liable for failing to supervise the implementation of SOPs, thus giving birth to the principle of corporate liability. If drawn to the context of AI-based telemedicine, then without *lex specialis*, the accountability pattern in Indonesia will tend to still place doctors and hospitals as the parties who bear the most responsibility, while algorithm developers and digital platform providers have never been tested in court.

This reinforces the urgency of new regulations that explicitly distribute responsibilities through a shared liability model (Sutrisno & Dewi, 2016). By linking evidence of jurisprudence (MA 365/2012; MA 779/2014) to AI-based telemedicine practice, there is a need to move the paradigm from actor-centric to system-centric. A shared liability framework accompanied by ex-ante conformity assessment and post-market surveillance will fill the legal void while keeping innovation accountable.

In this case, the strict liability approach used in the dangerous product liability regime can be an alternative. This model eliminates the need to prove fault and only requires losses as a result of using the system. In addition, the concept of shared liability can be developed, as has been considered in draft laws in the United Kingdom and Canada, where responsibilities are distributed proportionally based on position, knowledge, and control over the system.

Recommendations for the New Regulatory Model and Principle of Responsibility: Learning from International Law

The experience of other countries offers an important reflective mirror. The European Union, through the AI Act, not only regulates the circulation and risk classification of AI systems, but also introduces conformity assessment mechanisms and legally auditable technical documentation. This is important to establish the principle of explainability in AI-based medical systems, so that patients, regulators, and courts can understand the basis of the recommendations provided by the algorithm.

Meanwhile, India has taken a rather unique approach. In some jurisdictions such as Kerala and Bengaluru, local governments are pushing for the adoption of Ethical AI Guidelines which are soft law, but morally binding in medical relationships. This model can be a bridge to a transition to more formal and legalistic regulation.

Indonesia, in this context, can begin to build the principles of precautionary regulation and algorithmic accountability in health sector regulation. This means that even though not all aspects of technology can be rigidly regulated, the state must still establish a flexible but binding responsibility framework, so as not to create a responsibility vacuum in the modern healthcare system.

CONCLUSION

The entry of artificial intelligence in telemedicine practice in Indonesia marks a paradigm shift in the world of health services. However, behind this surge in innovation, there is a legal gap that has not been adequately filled. Based on the results of the study, it can be concluded that legal protection for patients in AI-based telemedicine practices in Indonesia is still fragmentary and not comprehensive. The existing legal framework has not yet addressed the complexity of the relationship between patients, doctors, AI systems, and digital platform providers. The absence of specific provisions on the validity of algorithmic recommendations in medical procedures, provisions on the validity of technology-based informed consent, and accountability procedures for non-human systems are fundamental weaknesses in the protection of patients' rights. Related to the conception of legal responsibility, this study found that the Indonesian legal system has not explicitly regulated the construction of liability in cases of medical errors influenced by algorithmic decisions. As a result, there is a juridical vacuum that makes it difficult to determine who should bear responsibility. The physician's approach to responsibility as the last party in contact with the patient is no longer sufficient, given the dominant role of AI systems in the clinical process. In this context, the shared liability model between doctors, system developers, and platform providers or service provider agencies becomes relevant to consider.

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