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The Application of Artificial Intelligence (AI) in Health Services within the Context of Positive Legality in Indonesia

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Abstract: The quality and efficiency of healthcare services have changed significantly due to advances in digital technology and artificial intelligence (AI) in the medical field. However, these advances also present various legal, ethical, and social obstacles that require serious consideration. This study investigates the application of AI in the medical field from a progressive and responsive legal perspective. Using normative juridical methods and qualitatively analyzed secondary data. This study aims to establish adaptive regulations that can adapt to the changing nature of technology while protecting the integrity of medical services and patient rights. This study also shows the importance of integrating human and spiritual values into the application of medical technology to ensure that healthcare services are holistic and focused on patient welfare. The study findings suggest that the establishment of a safe, equitable, and sustainable digital health ecosystem depends on the collaboration of policymakers, medical personnel, technology experts, and the public. Therefore, to optimize the advantages of technology and reduce risks in the future healthcare sector, it is important to establish responsive and inclusive regulations based on lex specialist.

Keywords: Artificial Intelligence (AI); Health; Indonesia; Positive Law.

1. Introduction

Indonesia is one of the nations with the largest populations in the world. Indonesia is classified as the fourth most populous country in the world in 2024. Unemployment has increased because of the rapid expansion of the population. The reason is the scarcity of employment opportunities and the dearth of high-quality human resources in Indonesia. An important component of health services is the beginning of the discussion regarding artificial intelligence. Artificial Intelligence (AI) includes the development of telemedicine services, widely recognized during the pandemic (Susetiyo & Iftitah, 2021). Due to their suitable challenges and solutions, AI and telemedicine have gained widespread use. During the pandemic, hospitals are frequently overflowing with patients, and medical professionals are at risk of contracting the coronavirus. Additionally, there are patients who require expedited treatment, necessitating a care model that can reduce costs and time. In light of these obstacles, the most viable option is to innovate through the integration of these two technologies. Additionally, there has been substantial expansion in the electronic government (e-government) initiative over the past two decades. This initiative allows the government to offer public information and services by utilizing Information and Communication Technology (ICT) (Romdoni et al., 2022).

This technology is regarded as advantageous due to its use of remote technology, which is facilitated by a service model that is relatively rapid, whether through cable or wireless connections. If artificial intelligence is currently employed solely as an initial screening tool, significant changes will occur in the future. This is due to the fact that

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patients will no longer be required to communicate with doctors. The speed and efficiency of the work of doctors and other medical personnel will be facilitated by the use of text and various visual data by the artificial intelligence. The desire to achieve rapid and effective treatment is anticipated to be addressed by the existence of this artificial intelligence (Barbosa et al., 2021). Additional futuristic concepts are also addressed, such as the utilization of applications as activity and diet tracking tools to fortify medical records, which can be utilized as a health measurement tool in the future. It is akin to transforming artificial intelligence into a personal health advisor whose quality is beyond question.

The potential applications of intelligence are frequently the subject of discussion. AI (Artificial Intelligence) substantively challenges the positive health legal framework in Indonesia which has been reactive and sectoral, because the characteristics of AI are very different from conventional medical intervention patterns. This challenge is not merely technical, but touches on the substance of the law, namely the structure of norms, the system of responsibility, and the principle of protecting human rights in health services.In reality, four critical components inextricably link to the concept of artificial intelligence development. The initial service is a rapid service that involves the issuance of prescriptions by artificial intelligence with the assistance of physicians. The subsequent step is treatment, which is designed to keep patients with chronic diseases under constant supervision. The third category pertains to universal care. The fourth service, which is currently under development, is a door-to-door service that enables patients to undergo blood tests or other health assessments without the need to visit a laboratory or clinic. This pattern will consistently dictate the direction of artificial intelligence development (Xie et al., 2020). Nevertheless, the rapid advancement of AI technology also poses substantial risks, particularly in terms of its potential for crime-related misuse (Husana et al., 2024).

The advancement of artificial intelligence is not always met with enthusiasm. Critics express concerns about the capitalization of health services. In this model of thought, Artificial Intelligence (AI) assumes the role of a physician and treats patients as if they were human. It seems to only consider the quantity and speed of services available (Arteaga-Cruz & Cuvi, 2021). Artificial intelligence is capable of producing competitive results and is precise; however, it eliminates the humanistic aspect of health services. It is apprehensive that such an approach will result in medical care becoming increasingly disconnected from human values and more reliant on profit and health business, which are classic issues in first-world health services.

The subsequent criticism came from Halamka (Cerrato & Halamka, 2021), who argued that we should keep medical records confidential and secure in the most trusted location. However, in reality, the data is now stored on a network that can logically be accessed and hijacked when a problem occurs, as efforts to maximize artificial intelligence are underway. Consequently, Halamka emphasized the necessity of ensuring that the utilization of telemedicine is consistent with policies and humanitarian principles that we can comprehend (Murdoch, 2021). The use of artificial intelligence (AI) in healthcare offers great potential, but if not supported by a clear legal basis, it can pose various risks to patient rights such as identity, Algorithmic Discrimination and Injustice Difficulties in Accessing Legal Process.

This research is based on the ongoing heated debate regarding the role of artificial intelligence in the future of health care. The aim is to conduct a legal and juridical analysis of this topic. This research is a comprehensive examination of the philosophical aspects of artificial intelligence, drawing on a variety of fields of study, including ethics, sociology, and the law. One of the hypotheses that emerged was the significance of lex specialis, which is dedicated to (1) enhancing the principles of speed, accuracy, and humanitarian and medical ethics in the implementation of this program. (2) Stringent regulations that facilitate the prevention of procedural errors in the practice of artificial intelligence involvement and (3) the resolution of cases that arise in the future as a result of artificial intelligence.

2. Materials and Methods

This research employed a legal research method, which referred to scientific activities based on certain methods, systems, and reasoning, which aim to examine one or more legal phenomena through an analytical approach. Its main function was as a tool for identifying and understanding research problems—whether in law, social sciences, or other disciplines—with the ultimate goal of producing knowledge about legal phenomena. It allowed for the formulation of precise legal issues and a comprehensive depiction of various aspects of law.

The normative legal method employed in this study was legislative in nature. The secondary data utilized in this study includes primary legal materials, such as laws and regulations that are pertinent to the research topic; secondary legal materials, such as books and journal articles; and tertiary legal materials, such as the Great Indonesian Dictionary, legal dictionaries, and pertinent encyclopedias. Secondary data can help to show regulations that still do not create legal certainty.The data was collected through library research techniques and subsequently analyzed in a descriptive manner to address the issues raised by the researcher in this study.

3. Results and Discussion

The mutual support between medical and technological approaches renders them inseparable. Without technology, medicine becomes mere theory, unable to perform the necessary actions. Technology has enabled the validation of medical theories, including cancer. Consequently, it is not advisable to initiate conflict. Nevertheless, Pongtambing (Pongtambing & Sampetoding, 2023) provides a perspective that emphasizes the necessity of treating this digital transformation with utmost vigilance and optimistic thinking to advance society.

In contrast, Topol (Molloy, 2022) regards technology as a component of a movement to democratize health. Topol believes that individuals can also evaluate their health conditions and engage in discussions with medical professionals through the use of technology. Engaging in discussions with medical professionals is an endeavor to optimize the medical field. The ultimate objective in the medical field is to preserve an individual's life (Turchin, 2024) We anticipate that this democratization process will significantly impact the lives of patients and the future.

Dr. Eric Topol believes that technology in medicine has the potential to effect significant change. Nevertheless, he also cautions against the perils of a purely utilitarian approach to contemporary medical practice (Chukwuneke & Ezenwugo, 2022). The complex meaning of medical practice is simplified by utilitarianism, which evaluates the success of treatment solely based on the outcome, whether the patient recovers or not. The process, exemplary intentions, and hard work of medical personnel are often disregarded as a form of human endeavor that is characterized by empathy and sacrifice when the success of treatment is solely measured by the end result.

This perspective is particularly pertinent in the context of the advancement of health technologies, including surgical robots, AI diagnosis, and telemedicine. Society can become ensnared in the logic of results when technology assumes the majority of the human role in the medical process. If science is unable to cure, it is deemed a failure; if it is capable, it is deemed a success without taking into account other factors. This perspective not only confines medical professionals but also establishes a barrier between patients and the treatment process as a comprehensive human experience, replete with spiritual values, uncertainty, and hope.

Treatment is a component of human endeavor that is not solely focused on results but also serves as a demonstration of compassion, care, and charitable intentions from an ethical and religious perspective. Treatment is perceived as a humanitarian mission and act of charity by numerous religious traditions. For instance, in Islam, individuals who are most beneficial to others are considered the most exceptional. As a result, the treatment process is a genuine expression of social contribution and devotion to others, irrespective of the outcome (Rahmawati et al., 2024).

Therefore, the medical field must consider the ethical and spiritual dimensions of technology. Technology should complement human values in the practice of medicine, not replace them. It is imperative that health practitioners and policymakers take measures to prevent the erosion of the values of empathy and effort by technology-based approaches. Rather, technology should be a tool that enables the expansion of humanity's access to health services, rather than a disconnection from the noble meanings that underlie them and a further mechanization of services.

The integration of artificial intelligence (AI) into medical services offers the potential for enhanced quality of health services, diagnostic accuracy, and efficiency. However, the national legal framework has not adequately anticipated a variety of issues resulting from this technological advancement. The position or status of AI-based health technology is not explicitly defined in Law Number 17 of 2023, which pertains to health. Although Articles 344 and 340 refer to health technology, there is a lack of a comprehensive explanation of the appropriate application, regulation, and positioning of artificial intelligence within the Indonesian medical service system. This situation generates normative uncertainty: Is artificial intelligence solely designed to expedite the diagnosis and data processing process, or is it capable of supplanting the strategic role of healthcare professionals, including nurses and physicians?

Additionally, this legal ambiguity presents the possibility of future conflict and ethical dilemmas. For instance, who should be held accountable in the event of a misdiagnosis or medical action that results in harm to a patient as a result of recommendations or

decisions from an AI system? Should the user's physician, the technology developer, the healthcare institution, or another party be held responsible? Artificial intelligence is still in a precarious position and has not yet achieved significant legal legitimacy, as new questions continue to arise. In reality, the application of AI in the medical field is eagerly anticipated, particularly to address the obstacles of a scarcity of medical personnel, restricted access to services in remote regions, and the necessity for rapid and precise data analysis. Therefore, it is imperative that we establish more comprehensible and sophisticated regulations that encompass the technical application of AI and establish ethical boundaries, legal obligations, and safeguard patient rights in the contemporary digital health environment.

In light of the rapidly evolving artificial intelligence (AI) phenomenon, it is imperative that we contemplate the assertion of Indonesia's foremost legal scholar, Prof. Satjipto Rahardjo. He once asserted that "*the law is always late*." This statement is not merely a pessimistic critique of the legal system; rather, it is a candid reflection of the law's frequent inability to keep up with the pace of social, cultural, and technological change in society (Siregar, 2024). In this context, the law is reactive, meaning that it is present and established in response to societal issues or conflicts. This phenomenon is not exclusive to Indonesia; it is a general characteristic of legal systems in various countries. This occurs because law is mainly a result of social consensus, which requires time, political considerations, and legislative mechanisms that do not happen instantly.

Nevertheless, Satjipto Rahardjo does not regard legal delays as a reason for resignation. In reality, it serves as the foundation for the emergence of a progressive law, a spirit of renewal in legal thought. Progressive law is a legal paradigm that rejects the rigidity and positivism of law that solely adheres to normative texts without factoring in the values of substantive justice in society. In this perspective, the law is no longer regarded as a static institution but rather as a dynamic instrument that can be used to address the challenges of the present and establish social justice (Hum et al., 2020). The concept of progressive law, initiated by Satjipto Rahardjo, can be a very strategic framework for encouraging the formulation of lex specialis on AI in the health sector. Progressive law sees law not merely as a written text or norm, but as a means to create substantive justice and protection of human rights contextually.

In a progressive legal framework, the establishment of technologies such as AI should not be regarded as a threat to the law but rather as an opportunity to create a legal system that is more contextual, humane, and responsive. For instance, the issues of legal responsibility in autonomous vehicle accidents, challenges to privacy, data misuse, and the validity of contracts made with the assistance of AI all necessitate a legal approach that is not only normative but also ethical and sociological.

Progressive law motivates lawmakers, academics, and practitioners to interpret the law in a manner that is adaptive, contextual, and equitable, rather than passively waiting for formal regulations to be established. This method creates an opportunity for legal reform by fostering the development of legal policies that are pertinent to the current era through the involvement of judges, state institutions, and civil society.

Additionally, the progressive law spirit is characterized by the recognition that the law is not merely to be adhered to but also to be altered to establish more favorable social

circumstances. Consequently, to confront the AI phenomenon and the technological challenges of the present day, it is imperative that we not only act as consumers of law but also as agents of change who contribute to the development of a legal system that is visionary, inclusive, and equitable (AR & Sembiring, 2025).

Consequently, Satjipto Rahardjo's assertion regarding legal delays is an attempt to refrain from remaining silent. Progressive law functions as a bridge, guaranteeing that the law remains responsive and dynamic in response to the changing social realities of the present day, including those induced by the digital era and Artificial Intelligence (AI).

The position of artificial intelligence (AI) in medical services is still in an ambiguous area. The absence of a clear positioning in the Indonesian legal system makes AI a problematic entity, especially when associated with medical practices that involve human life and safety (Afandi & Kurnia, 2023). This problem is complicated because the involvement of AI in the medical process is not only a matter of technicality or efficiency but also touches on issues of ethics, morality, and legal responsibility. Indeed, a vision of "immortality" or achieving medical perfection often drives the competitive nature of the medical world. But it must be noted that the main basis of medical practice is that patients are human beings, not just objects of algorithmic analysis.

AI, despite its sophistication, is unaware of the psychological complexities, emotions, and human values that are associated with medical actions. For instance, in emergency decision-making, a physician may take into account factors that are not quantifiable numerically, such as cultural values, patient emotions, or moral considerations. In contrast, AI will persist in its actions by relying solely on the data and programs that are incorporated into its system, not taking into account these non-material aspects. This behavior serves as confirmation that AI is incapable of comprehending humans as complete entities and, as a result, is not suitable for use as the sole replacement for humans in medical decision-making (Elendu et al., 2023).

Additionally, the issue is becoming more complex legally because AI is not recognized as a valid legal subject. Due to its lack of legal personality, we cannot hold AI directly accountable for medical errors. A significant question arises when a medical procedure involving AI results in patient harm or even death: who is accountable? Should technology developers be held accountable for the products they develop? Or is it the hospital, as an institution, that determines the integration of AI into its healthcare services? Alternatively, is the AI operated by the doctor or operator? This ambiguity creates a significant gap in the legal system that can be detrimental to numerous parties, particularly patients, who are the most vulnerable (Santhi & Damayanti, 2024).

We cannot respond to the presence of AI in medical services with the excuse that its use is currently still limited. The reality is that technological development is very rapid, and the tendency to use AI in complex medical procedures has begun to be seen in various countries. We cannot wait for the widespread use of AI before formulating regulations, as it could be too late by then. Referring to the progressive view of law put forward by Satjipto Rahardjo, the law should not only be a reactive institution but must also be anticipatory toward social and technological changes. Therefore, we need to set up a favorable legal system ahead of time, not just to manage the technical limits of using AI,

but also to protect patient rights, clarify who is legally responsible, and keep humanitarian values in today's medical practice.

In the context of the use of artificial intelligence (AI) in the health sector, there are at least two main approaches that can be considered. The first approach positions AI as a professional medical aid whose operation is exclusively carried out by medical personnel who already have the competence and authority. In this approach, AI is treated similarly to other diagnostic instruments, such as MRI or CT scans, which require professional interpretation and responsibility from doctors. This approach highlights the importance of doctors being responsible for their work and is based on worries about mistakes in diagnosis, breaches of medical ethics, and legal issues if AI technology is used on its own without medical supervision.

Meanwhile, the second approach offers a more adaptive perspective to the realities of the national health system. This approach opens up the possibility of using AI independently or semi-independently to handle minor and specific medical cases (Abdillah: 2024), such as consultations for minor symptoms, management of diagnosed chronic diseases, or primary health care in remote areas. The main argument underlying this approach is the gap between the need for health services and the availability of medical personnel. Data shows that the ratio of doctors in Indonesia is currently only around 0.47 per 1,000 people, still far below the minimum standard set by the World Health Organization (WHO), which is 1 doctor per 1,000 people (Maulidiyah & Zainafree, 2022). In this context, AI can act as a catalyst to bridge the service gap, particularly in 3T (frontier, remote, and disadvantaged) areas where doctors are scarce.

Both approaches have strong considerations and can complement each other. However, the application of AI in the health sector—both as a professional aid and as a means of direct service to the community—requires a clear and comprehensive legal basis. This regulation cannot rely solely on a general legal framework but rather requires a lex specialis that specifically regulates the use of AI technology in health services. This lex specialty must cover aspects of user competence, AI system security standards, legal accountability mechanisms, and protection of patient data (Silitonga & Laksono, 2024).

The urgency of this regulation is increasing considering the rapid development of AI technology and its potential penetration into the public service system. Without an adequate legal umbrella, the use of AI in the health sector risks creating a legal vacuum that endangers patient safety, harms medical professionals, and weakens the legal responsibility system. Therefore, the state must immediately formulate policies that are preventive, adaptive, and favorable to public safety while simultaneously opening up space for responsible technological innovation.

In formulating lex specialis related to artificial intelligence (AI) in medical services, the responsive law theory approach initiated by Philippe Nonet and Philip Selznick is very relevant. According to this view, responsive law was born as a form of response to the limitations of repressive law, which tends to be static and maintains the status quo. In their work Law and Society in Transition: Toward Responsive Law (1978), as quoted from Dixon (2023), they state that "Responsive law seeks to articulate and implement the substantive goals of a society; it is committed to justice, welfare, and the substantive ra-

tionality of law." Thus, law is no longer merely a tool of power or social control but develops into a moral and social mechanism that supports the transformation of society.

In this context, the existence of AI in the medical world is a form of technological transformation that contains ethical, social, and legal dimensions simultaneously. Challenges such as the unclear legal responsibility in the event of a misdiagnosis by AI or ethical dilemmas regarding patient autonomy in dealing with automated systems show that the law cannot rely solely on the classical normative approach (Yusuf & Siregar, 2023). As Nonet and Selznick said, laws must "respond to social needs, demands, and expectations in ways that are normatively justifiable."

Furthermore, Satjipto Rahardjo, in his idea of progressive law, emphasizes that law must be able to go beyond text, stating that *"Law is not for the law itself, but for humans and humanity."* (Sarumpaet et al., 2024). Law must be responsive to social change and technological developments as part of efforts to maintain substantive justice. In this case, the preparation of lex specialis for AI in the medical field must be seen as an effort to rehumanize the law so as not to be left behind by the pace of innovation that can create inequality or even violations of basic human rights.

Lawrence Friedman also emphasized the importance of social context in the formation of law. In *Legal System: A Social Science Perspective* (1975), as quoted from other works (Friedman, 2019) he wrote, *"Law is a product of culture; it does not exist in a vacuum."* This statement supports the idea that specific laws for AI can't be created without considering the social, cultural, and professional environments surrounding it, such as how Indonesian health services are organized, the number of medical staff available, the community's digital skills, and how the medical profession is held accountable.

With this basis of thought, the preparation of *Lex Specialis* is not enough to be done reactively on a case-by-case basis; it must be based on multidisciplinary research and a sustainable approach. This is a form of state responsibility in responding to developments in the era while still ensuring justice, accountability, and respect for human dignity amidst the technological revolution in health services.

Lex specialis that regulates artificial intelligence (AI) in the realm of health services must ultimately be designed with fundamental principles in the medical world in mind, namely accuracy and speed (efficiency). These two principles are not merely technical aspects but are at the heart of medical practice that aims to save lives and improve the quality of life of patients. Accuracy concerns the system's ability to diagnose, recommend medical actions, and carry out supervision with minimal risk of error. Meanwhile, speed is closely related to the efficiency of case handling, especially in emergency situations or in dealing with a surge in patients, as has happened during the pandemic (Sanhaji & Hizbullah, 2024).

AI, with all its potential for rapid data processing and algorithmic precision, offers a solution to the human limitations of medical personnel. However, the presence of AI is not just the addition of ordinary medical aids—it represents a new paradigm in health care governance. Therefore, the specific regulations that will be enforced through lex specialis cannot be built on the basis of the old legal framework that only focuses on the role of humans as the main actors. There must be an acknowledgement that medical practice after the adoption of AI will have a completely unique face from conventional

medical practice, both in the relationship between patients and the service system and in the division of responsibilities between medical professionals and technology.

This transformation demands that the specific laws that are drafted are not only formalistic and administrative but also substantive and technical. Legal explanations must be detailed, comprehensive, and able to answer various possible developments that arise from the integration of AI in various lines of health services, including in diagnostic procedures, clinical decision-making, patient monitoring, and hospital management systems. The ultimate goal is to create regulations that are not only able to ensure that the benefits of AI can be felt by all levels of society but also minimize the negative impacts that may arise, such as systemic errors, data bias, inequality of access, or violations of patient privacy rights.

In other words, this *lex specialis* must not only answer legal challenges but also ethical and social justice challenges. Regulation in a responsive and progressive legal framework not only aims to regulate technology, but also to guarantee that human values, justice, and the common good govern technology, specifically AI.

4. Conclusions

The utilization of digital technology and Artificial Intelligence (AI) in the medical field has created significant opportunities to enhance the quality of health services, expedite diagnosis, and facilitate more appropriate clinical decision-making. However, we must not ignore the substantial challenges posed by these technological advancements in terms of legal, ethical, and social considerations. It is imperative to adopt a legal approach that is both progressive and responsive to ensure that the regulations in place are capable of adapting to the changing dynamics of technological advancements while still upholding the integrity of the health profession, the privacy of medical data, and the rights of patients.

Additionally, the incorporation of technology into medical practice must consistently prioritize the values of spirituality and humanity to ensure that technology is not merely regarded as a mechanical tool but rather as a component of a comprehensive health service system that is dedicated to the well-being of patients. Relevant solutions to address a variety of new issues, including the risk of data misuse, algorithmic discrimination, and psychological effects on patients and health workers, are adaptive regulations that are based on responsive legal principles.

As a result, a safe, fair, and sustainable digital health ecosystem necessitates a collaborative effort among policymakers, medical personnel, technology experts, and the community. A comprehensive and collaborative approach is necessary to ensure that technological advancements in the medical field provide optimal benefits while minimizing potential risks, thereby ensuring the provision of quality and equitable health services in the future. To bridge the interests and roles of regulators, medical practitioners, technology developers, and civil society in formulating and supervising the use of AI in the health sector, a coordinating framework is needed that is inclusive, collaborative, and responsive to technological change. This framework must ensure that AI develop-

ment is not only technologically efficient, but also fair, transparent, and humane in law and ethics.

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