

Analysis of Health Financing Legal Regulations in the Digital Era: Reviewed from Challenges and Opportunities

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Abstract

Health financing is an essential aspect of the global health system that affects the accessibility, sustainability, and efficiency of health services. The background of health financing is becoming an increasingly relevant topic in the context of a rapidly evolving global health system, especially with the advancement of digital technology. The digital era offers a variety of innovations that can improve the efficiency and accessibility of health financing, but also pose new challenges for legal regulation. Existing regulations have not fully accommodated the development of digital technology, thus affecting the effectiveness and integrity of the health financing system. This research aims to analyze the legal regulations governing health financing in the digital era and to explore the challenges and opportunities arising from digitalization. The method used in this study is a normative juridical approach, with an analysis of related laws and regulations and comparative study with policies in other countries. The results show that while digital technology offers an excellent opportunity to improve efficiency in health financing, there are various challenges, including misalignment between existing regulations and technological advancements, issues related to personal data protection, and oversight of digital payment systems. However, digitalization also offers an excellent opportunity to create rules that are more flexible and responsive to change, thereby maximizing the potential of technology in the health sector. In conclusion, this study recommends regulatory reforms that are more adaptive to digital developments to create a more efficient, secure, and inclusive health financing system.

Keywords: Legal Regulation; Health Financing; Digital Era.

I. INTRODUCTION

Health financing is a fundamental aspect in the implementation of the global health system. Its role is not only limited to funding medical services, but also ensuring fair and quality access for all levels of society. A strong financing system is an important instrument in achieving public health goals such as Universal Health Coverage (UHC), where every individual gets the necessary health services without excessive financial burden. The success of health financing determines how well a country can meet the health needs of its citizens and address complex health challenges such as the burden of chronic diseases and public health emergencies.

Major changes have occurred in recent decades related to the rapid penetration of digital technology in various sectors including healthcare. The digital era has given birth to financial technology (fintech) innovations and digital payment systems that are able to revolutionize the way health financing is operated. Fintech technology, for example, enables faster, more transparent, and more accessible financial transactions to the wider public through digital applications and platforms, thus simplifying the process of paying for health services and insurance claims. Studies show that the use of fintech in the health sector can improve operational efficiency while expanding access to services to the public,

especially in the midst of a pandemic and changes in digital behavior of the wider community.

Normatively, the health sector in many countries is governed by a strong legal framework to protect patients' rights, ensure the safety of services, and ensure the sustainability of the health system. In Indonesia, Law Number 17 of 2023 on Health replaces the previous Law and provides a new, more comprehensive legal basis in regulating the health sector as a whole, including financing and the use of technology in health services. This regulation is complemented by Government Regulation Number 28 of 2024 concerning the National Health System, which affirms the government's role in ensuring an integrated national health service system. In addition, other regulations such as Law Number 27 of 2022 concerning Personal Data Protection and the ITE Law (No. 11/2008) are also relevant to regulate digital data processing in health services, including aspects of technology-based financing. Although regulations in Indonesia have undergone updates, there is a significant gap between the existing legal framework and the challenges brought by the digitalization of the health sector. Traditional regulations are often not designed to accommodate technological innovations such as fintech platforms, telemedicine, and digital payment systems that are increasingly commonly used in healthcare financing. As a result, there is a

lack of clear legal space related to the responsibilities of digital service providers, consumer protection, and the regulation of digital transaction disputes in the context of health financing. This creates legal uncertainty for business actors, health providers, and service users who are increasingly dependent on digital technology.

One of the important issues that arises from the regulatory gap is the protection of medical data and patient privacy in digital transactions. Health data is a category of sensitive information that requires a high level of legal protection to prevent it from being misused or accessed illegally. Recent regulations such as Law No. 27 of 2022 provide a legal umbrella for the protection of personal data, but its implementation in the context of digital healthcare still requires more detailed operational guidelines so that fintech service providers who handle medical data can effectively ensure the security and confidentiality of patient data. In the Indonesian context, the health financing system such as the one built by JKN (National Health Insurance) also shows how the rule of law must continue to evolve to adapt to the dynamics of technology and changing societal needs. Although the JKN system has taken advantage of several aspects of digitalization in service administration, the implementation of digital technology in health financing still faces regulatory obstacles, both in terms of system integration, equal access in remote areas, and the protection of patients' rights in the use of digital financial services. The gap shows the need for special attention to the renewal and harmonization of health financing regulations in the digital era. Adaptive and responsive policy reforms are needed to ensure that technological innovation not only improves efficiency, but is also legally protected—including in terms of patient rights, data security, and transaction integrity. Strong and relevant regulations will create an effective, inclusive, and sustainable digital health finance ecosystem, thereby supporting national and global health development goals.

Problem Formulation

1. What are the legal challenges faced in health financing in the digital era?
2. How do health law regulations in Indonesia respond to the development of digital technology?
3. What are the opportunities in health financing in the digital era related to legal regulations?

Research Objectives

The purpose of this study is to analyze the legal regulations that govern health financing in the digital era, focusing on how these regulations can support or hinder the adoption of digital technology in the health financing system. This research also aims to identify the challenges faced by the health financing system, such as gaps in regulations, data protection, and operational barriers arising from the development of digitalization. In addition, this study aims to assess

opportunities and potentials that can be utilized in the development of digital technology-based health financing, such as increasing efficiency, transparency, and accessibility of more inclusive health services through the use of digital payment systems and financial technology

II. RESEARCH METHODOLOGY

This research uses a normative juridical approach, focusing on legal analysis related to laws and regulations governing health financing and the application of digital technology in the health sector. This type of research also adopts literature studies to review relevant legal literature, articles, and research reports, as well as case studies to analyze the implementation of health finance regulations in countries with developing digitalization systems. Primary data sources in this study include laws and regulations, government policies, and data from health institutions such as BPJS Kesehatan, while secondary data sources include journals, books, scientific articles, and research reports related to health financing regulations and digitalization in the health sector. The data collection techniques used are the analysis of relevant legal and regulatory documents to identify regulatory gaps, as well as comparative analysis of existing regulations in countries with advanced digital health financing systems to assess existing challenges and opportunities

III. RESULTS AND DISCUSSION

Challenges in Health Financing Regulation in the Digital Era

Technological advancements, especially in the digital field, bring great challenges in the arrangement of health financing. One of the main legal barriers is data security and patient privacy. Highly sensitive health data must be strictly protected, but many countries, including Indonesia, do not yet have strong enough regulations to ensure the security of personal data in digital transactions. This has become more complex with the development of fintech technology in health financing, which allows financial transactions to be carried out digitally. Without adequate regulation, the risk of misuse of personal data, such as medical information leaks or identity theft, increases. In addition, the issue of supervision also arises, as rapidly developing technology is difficult to monitor by existing regulatory bodies, especially when it comes to digital financial transactions involving third parties. This can lead to potential fraud or data manipulation in the health financing system.

The misalignment between existing regulations and technological developments is one of the main obstacles in the digital health financing system. Most of the health regulations that exist today are made for more traditional systems and have not been able to accommodate the rapid changes brought about by digitalization. For example, in Indonesia, although

Law Number 17 of 2023 concerning Health regulates health financing in general, many digital aspects, such as the use of electronic payment systems and telemedicine, have not been explained in detail. This causes legal uncertainty for digital healthcare providers and service users. Regulations that are not in line with technological developments hinder innovation and technology adoption in health financing. Developed countries such as the US and the UK have begun to update their regulations to accommodate the use of technology, but developing countries still face difficulties in this regard.

One of the major risks in payment technology and digital health systems is the possibility of online fraud and transaction errors. Digital payment systems used in healthcare financing often rely on third-party platforms that can be vulnerable to hacking and fraud. If the payment system does not have strong security protocols, payment data and medical information can be stolen or misused. In addition, errors in transactions or failures of digital payment systems can lead to delays or errors in the processing of insurance claims or payments to healthcare providers. This can disrupt the flow of financing and harm patients and healthcare providers. Therefore, it is important for countries and international organizations to establish stricter regulations and introduce more advanced security technologies to minimize these risks.

Opportunities in Digital Health Financing

Digital technology has had a significant impact in improving the efficiency and accessibility of health financing. One of the key benefits of digital technology is the ability to simplify and speed up the payment administration process in the healthcare system. By utilizing electronic payment platforms, insurance claims and payments can be processed faster, reducing transaction costs and improving operational efficiency for hospitals and healthcare providers. In addition, digital technologies, such as telemedicine and mobile-based health applications, also increase the accessibility of health financing. People in remote or underserved areas can now access healthcare services easily without having to travel long distances, reducing transportation costs and the time it takes to get treatment. This technology opens up opportunities for a more inclusive health system, where everyone, including those who are less fortunate, can access the health care they need at a more affordable cost.

One of the main challenges in healthcare financing is the lack of transparency in financing flows, which often makes it difficult for patients to understand the costs they incur, as well as adding to the administrative burden for healthcare providers. Digital technology plays an important role in overcoming this problem. Blockchain-based payment systems, for example, can increase transparency in healthcare financing by providing a clear and

immutable track record of transactions, thereby minimizing the risk of fraud or data manipulation. Additionally, digital platforms that integrate a variety of financial, medical, and insurance data can provide a clearer picture of the costs charged to patients and the ongoing claims process. The technology also allows patients to track the status of claims in real-time, reducing confusion and increasing trust between patients, service providers, and insurance providers.

As digital technology grows in the healthcare sector, it is important to create more adaptive and flexible regulations that can keep up with the dynamics of these innovations. Rigid legal and policy systems are often an obstacle to technological developments in the healthcare finance sector, as they cannot accommodate the rapid changes that occur in technology and markets. Therefore, there needs to be reforms in regulation that allow the legal system to be more responsive to change, such as more frequent updates and a test-based approach (sandbox regulations) that allow testing of new technologies on a small scale before they are widely implemented. These more flexible regulations can provide room for innovation, while still maintaining basic principles such as personal data protection and fairness in health access. Governments can work with technology companies and health institutions to design policies that support technological developments without compromising the basic principles of fair and sustainable health financing.

Analysis of Health Financing Legal Regulations in Indonesia

In Indonesia, the main health financing regulations are regulated by Law Number 24 of 2011 concerning the Social Security Administration Agency (BPJS) which establishes the national health insurance system through the National Health Insurance (JKN) program. BPJS Kesehatan is tasked with providing health insurance that provides protection for all Indonesian people, ranging from basic health services to referral hospitals. This system aims to provide equitable and equitable access to health services for all residents, including inpatient and outpatient services. In addition, regulations related to digital payment technology have also begun to be enforced to improve the efficiency and transparency of the payment system in health services. For example, the implementation of e-payment and digital platforms for the payment of JKN claims and health service fees, which aims to simplify the transaction process and speed up administrative services. However, despite the developments, more detailed arrangements regarding the use of fintech and digital payment platforms in the context of health still need to be refined to ensure security and convenience for service users.

The integration of digital payment systems in health financing in Indonesia faces various challenges, both in terms of technical and regulatory aspects. One of

the main challenges is the digital infrastructure gap in remote areas, which can hinder the implementation of a comprehensive digital payment system. Although major cities have begun to adopt this technology, there are still many areas that have limited access to the internet and electronic devices necessary for digital transactions. Another challenge is data security and patient privacy, which is a critical issue given the large amount of sensitive data processed through digital platforms. Without strict regulations, the risk of leakage or misuse of medical data and payments is even greater. In addition, the unpreparedness of human resources in managing and supervising digital systems is also an obstacle, because many health and administrative workers are not skilled in using digital technology for health financing management.

To strengthen the digital health sector in Indonesia, several regulatory improvements need to be considered. First, regulatory reforms that are more flexible and adaptive to the development of digital technology must be carried out. Governments need to create a legal framework that supports the adoption of digital payment technologies, such as through sandbox regulations, that allow for small-scale testing of the technology before it is widely implemented. Second, to address data security challenges, regulations related to personal data protection, as stated in the Personal Data Protection Law (PDP Law), need to be strengthened with strict audit and supervision mechanisms, as well as the implementation of higher cybersecurity standards. Third, it is important to improve the competence of human resources in the field of health technology with training programs involving healthcare providers and related government agencies. Regulations that support the integration of digital payment systems, such as regulations that clarify the relationship between healthcare providers, fintech platform providers, and BPJS Kesehatan, will provide a clearer legal basis for further development.

IV. CONCLUSION

This research identifies various challenges and opportunities faced by legal regulations in health financing in the digital era. One of the main findings is the misalignment between existing regulations and the rapid development of digital technology. Existing health financing systems tend to be based on more traditional structures, while technological innovations such as fintech, telemedicine, and digital payment systems are increasingly dominating the healthcare sector. The biggest challenge lies in the need for more adaptive regulation, which can include aspects of patient data security, privacy protection, as well as digital transaction surveillance to prevent fraud and transaction errors. In addition, the digital infrastructure gap in remote areas is also a challenge

in the implementation of an equitable digital payment system. On the other hand, regulatory changes implemented to accommodate digital technology bring great opportunities in improving efficiency, accessibility, and transparency in health financing. The use of digital technology in health financing opens up opportunities to create faster, cheaper, and more secure systems, by reducing operational costs and speeding up the payment and claims process. In addition, the integration of digital payment systems allows for wider access for people who previously struggled to access healthcare, especially in remote areas. The use of technology also provides an opportunity to increase transparency in health financing flows, which can reduce the potential for misuse of funds and increase patient trust in the healthcare system.

V. RECOMMENDATIONS

The government needs to update health financing regulations to be more adaptive to digital technology. This can be done by implementing sandbox regulations to test new technologies on a small scale, tighten personal data protection, and improve access to technology in remote areas so that digital systems can be accessed by all levels of society. To improve the security and transparency of digital payment systems, it is important to use advanced encryption and blockchain to ensure secure and auditable transactions. Governments should also set clear technical standards to ensure interoperability between different digital payment systems. Collaboration between the public and private sectors is essential to develop inclusive digital solutions. Governments can work with technology companies to create accessible platforms, while the private sector can provide the necessary innovation and infrastructure to accelerate the adoption of digital payment systems.

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