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Hospitals' Legal Responsibility for Service Disruptions due to Information System Failures

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A R T I C L E I N F O

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A B S T R A C T

The digitization of healthcare services has led hospitals to rely on Hospital Information Systems as the main infrastructure for clinical, administrative and reporting processes. When the system fails and causes service disruptions, questions arise as to how the legal relationship between hospitals and patients can be used to assess possible civil and administrative liability. This study aims to explain the construction of this legal relationship by linking the Hospital Law, Consumer Protection Law, ITE Law, Population Administration Law, as well as Minister of Health Regulations 82/2013 and 88/2015. The method used is a qualitative literature study with a normative juridical approach, based on thematic analysis of legislation and academic literature on health law, consumer protection, and information technology governance. The results of the study show that the legal relationship between hospitals and patients is both contractual and normative. From a contractual dimension, a health service agreement is formed that requires hospitals to provide safe and quality services, including through the management of a reliable information system. From a normative dimension, the Hospital Law and Consumer Protection Law place patients as subjects of rights who are entitled to services in accordance with standards and compensation in the event of losses due to negligence. The Electronic Information and Transactions Law require electronic system operators to maintain the reliability and security of their systems, so that hospitals operating SIRS can be regarded as system operators responsible for losses incurred when the system fails to function properly. In the administrative sphere, Minister of Health Regulation No. 82/2013 requires the implementation of an integrated SIMRS, while Minister of Health Regulation No. 88/2015 regulates the supervision and reporting of hospitals. System failures that disrupt services and reflect violations of these technical provisions can be grounds for administrative sanctions, ranging from warnings to service restrictions. This study concludes that the combination of these regulatory frameworks allows for the imposition of civil liability in the form of compensation to patients, alongside administrative actions by regulators to encourage improvements in the structure and governance of SIRS at the hospital level.

INTRODUCTION

Digital transformation in healthcare services has prompted hospitals to rely on Hospital Information Systems (HIS) as the backbone of clinical and administrative management. The success of this transformation depends not only on access to technology, but also on the digital skills of human resources to operate the system effectively and safely (Arifin & Darmawan, 2021). Various processes that were previously manual, such as medical record keeping and medication management, are now centralized in a single integrated technology architecture (Mobasher, 2022). These changes have shifted the work experience of healthcare workers and the way hospitals build legal relationships with patients. The literature shows that the digitization of services has the potential to improve quality and efficiency, provided that it is designed with adequate system reliability and security principles (Wachter, 2015). However, disruptions to technological systems can also trigger new risks that never arose in paper-based practices (World Health Organization,

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2011).

The increasing dependence on Hospital Information Systems (HIS) makes system stability, data availability, and information integrity direct prerequisites for fulfilling patients' rights to adequate healthcare services (O'Hanlon, 2013). System failures in critical processes such as registration, prescription writing, or access to test results can delay services, disrupt clinical workflows, and even influence medical decisions made under pressure. Recent studies show that errors resulting from system failures can lead to adverse events for patients, including delayed diagnosis and treatment (Bates & Singh, 2018). In practice, system disruptions are often considered non-medical barriers, even though the resulting service delays are directly perceived by patients as a decline in service quality. Digital transformation has changed the way people perceive services, including in assessing the quality of healthcare they receive (Costa et al., 2022).

Within the framework of understanding the relationship between hospitals and patients, the existence of SIRS shifts the focus of interaction from purely face-to-face meetings to interactions mediated by digital systems. Clinical decisions, internal referral flows, and inter-unit communication are linked through data and commands sent through the system (Binsar et al., 2022). Several studies show that the failure of information system integration can lead to miscommunication, duplication of actions, and the loss of important records needed for clinical decision-making (Greenhalgh et al., 2017). For patients, the experience of receiving delayed, interrupted, or suddenly changed services due to system disruptions often causes insecurity, confusion, and even distrust of hospitals as institutions. At this point, the technological problem is not merely a technical matter, but is closely related to the legitimacy of hospitals in fulfilling their legal obligations.

From a health law perspective, the crucial question that arises is how service disruptions due to SIRS failures affect the legal liability of hospitals. Healthcare services are essentially provided based on a legal relationship involving the rights and obligations of both the hospital and the patient. When services are disrupted due to system downtime, inaccessible data, or certain modules ceasing to function, the question arises as to whether the patient's losses can be classified as a breach of contract, an unlawful act, or merely an operational risk beyond the scope of legal fault. A number of patient safety studies emphasis the need for a clear classification between individual errors and systemic errors, as the two require different approaches to accountability (Runciman et al., 2009). Questions regarding the limits and forms of hospital liability when the root cause lies in technological system failure still require systematic legal argumentation.

The first issue relates to the normative classification of service disruptions arising from SIRS failures. In practice, hospitals often consider these incidents as technical obstacles that can be resolved through operational adjustments, without always considering the legal consequences for patient rights. However, from the patient's perspective, the hospital's inability to provide services in accordance with the promised standards, whether explicit or implicit, can be perceived as a violation of legal obligations. Patient safety literature shows that system failures often result in consequences comparable to individual professional errors, such as significant delays in service or missed critical interventions (Bates & Singh, 2018). This situation raises the need to determine whether system failures can form the basis for civil liability or should be positioned as a reasonably foreseeable risk.

The second issue discusses the construction of the legal relationship between hospitals and patients in services that rely on information technology. The presence of a functioning Hospital Information System (HIS) can be considered an implied part of the service agreement. However, classical contract law does not explicitly regulate obligations regarding the reliability of this system. Studies show that system integration failures can hinder clinical coordination and create ambiguity regarding responsibilities between hospitals and technology providers (Greenhalgh et al., 2017). This raises a crucial question: who is primarily responsible when patient harm occurs due to system failures involving technical and managerial factors.

The third issue relates to the limits of civil liability and hospital administration when service disruptions due to SIRS failures cause actual harm to patients. On the one hand, patients may suffer material and immaterial losses in the form of additional costs, wasted time, or increased suffering. On the other hand, health service supervisory and regulatory authorities have an interest in assessing whether hospitals have met reasonable information system standards, including security and operational continuity. The literature on patient safety classification systems indicates that a normative framework is needed to distinguish between incidents that can be linked to breaches of legal obligations and incidents that fall within the category of reasonable residual risk (Runciman et al., 2009).

Without a clear distinction, legal uncertainty will hamper both the strengthening of patient protection and systemic reform at the hospital level.

The application of information technology in hospitals has created a new reality in which system failures have a direct impact on the continuity of healthcare services that depend on real-time data flow. This digital transformation poses new forms of risk compared to traditional service models, in line with findings that digitization can create complex challenges, including disruptions to trust within the service ecosystem (Issalillah & Hardyansah, 2022). In the context of policies that encourage the use of electronic medical records and data integration, SIRS failures can no longer be viewed as temporary disruptions. They touch on the core of the patient-hospital trust relationship and test the extent to which positive law is able to respond to the complexity of losses originating from the system, rather than individuals. Academic studies on this issue are relevant to the development of health law that is responsive to digital realities.

The discussion of hospitals' legal responsibility for SIRS failures is crucial for policymakers and legal practitioners. Without a clear legal framework, case assessments may be reduced to internal technical considerations that disregard legal certainty for patients. Technical and governance aspects of the system directly affect the operational capacity of organizations (Putra et al., 2022). Legal studies linking service disruptions to forms of liability will strengthen technology-based service standards. The formulation of clear legal arguments in this regard is an urgent need, both academically and practically.

This study aims to conduct a normative legal analysis of the position of healthcare service disruptions originating from hospital information system failures within the framework of hospital legal liability, by examining whether and to what extent such events can be classified as system errors that give rise to legal consequences. In addition, this study intends to describe the construction of the legal relationship between hospitals and patients in order to identify the limits and forms of civil and administrative liability that may arise. Theoretically, this study is expected to enrich the development of health law in the field of information technology-based services, while in practice it can provide a reference for hospitals and stakeholders in designing SIRS governance and accountability policies that are in line with the principles of patient protection.

RESEARCH METHOD

This study uses a normative legal approach with a qualitative literature review design. Primary legal materials in the form of legislation in the fields of health, consumer protection, and information technology, as well as secondary materials such as legal books and articles, are analyzed in depth. This approach is consistent with the view that normative legal research relies on the analysis of texts, structures, and principles within the legal system to formulate prescriptive arguments (Creswell & Poth, 2018). The literature review was conducted in a targeted manner to identify the position of hospital information system failures within the framework of civil and administrative liability.

Literature searches were conducted using scientific databases such as PubMed, Scopus, and Google Scholar. Academic publications from the last two decades discussing the relationship between health information systems, patient safety, and health institution accountability were included as inclusion criteria (Snyder, 2019). Popular sources and articles without peer review were excluded from the analysis. Each source was evaluated based on the publisher's reputation, completeness of references, and relevance to the study focus before being designated as primary material.

The next stage involved coding and thematic synthesis of selected legal material and scientific literature. Thematic analysis techniques were used to identify patterns of ideas concerning the definition of system failure, classification of systemic and individual errors, models of hospital-patient relationships, and forms of accountability that could be imposed (Braun & Clarke, 2006). These key ideas are categorized into themes such as "minimum hospital service obligations" and "technological risks in healthcare services". The reliability of the analysis is maintained through repeated readings, cross-checking between sources, and the consistent application of thematic categories (Bowen, 2009).

RESULT AND DISCUSSION

Construction of Hospitals' Legal Liability for Service Disruptions due to SIRS System Failures

The study of hospital legal liability requires a clear foundation before entering the realm of regulation. Discussion of the construction of hospital legal liability for service disruptions due to Hospital Information System failures must begin with an understanding of the nature of systemic errors in patient safety literature. Since the To Err Is Human report, the discourse has shifted from focusing on individual errors to recognizing error structures that originate from organizational and technological design (Institute of Medicine, 2000). Reason explains

that systemic failures occur when layers of organizational defenses have gaps that align, causing previously latent technical errors to become actual incidents that harm patients (Reason, 2000). In fact, the original purpose of developing SIRS was to reduce data redundancy, provide quality data, and maintain data integrity (Majoring & Simbolon, 2023). However, in SIRS-based services, network disruptions, server crashes, or application module malfunctions can be categorized as flaws in the technological defense layer. When these disruptions hinder access to important clinical data and delay services, the losses incurred by patients cannot be separated from the hospital's obligations as the provider of a service system that relies on technological means (Chen et al., 2017). This explanation shows that information system failures can no longer be viewed as ordinary technical errors, but rather as part of institutional risks that have legal consequences.

In examining this phenomenon, it is important to examine how health technology has given rise to a number of operational implications in the field. The systemic nature of errors associated with health information technology is reflected in various reports on the clinical consequences of malfunctions in electronic medical records and clinical decision support applications. This shows that the successful implementation of information technology, including in the health sector, is highly dependent on how the technology is managed to support the overall managerial efficiency and effectiveness of the organization (Arifin, & Putra, 2022). Ash, Berg, and Coiera show that health information technology can produce unintended consequences, such as increased workload, disrupted communication, and input errors that impact service quality (Ash et al., 2004). Nebeker and colleagues developed a taxonomy of incidents related to electronic medical records, including loss of information, delayed access, and duplication of records that mislead clinical processes (Nebeker et al., 2005). The fact that these incidents often arise from a combination of immature system design, limited training, and failure to test reliability reinforces the view that SIRS malfunctions are not entirely random events, but rather part of the risks that hospital management should anticipate (Sujan, 2018). System disruptions are not merely an operational issue, but also indicate managerial responsibilities that need to be evaluated normatively.

The study of legal liability requires a clear distinction between human error and institutional error in relation to the source of errors in the healthcare system. In the realm of liability theory, the nature of systemic errors requires a distinction between individual human error and institutional negligence. Reason emphasizes that organizations must recognize and manage latent conditions that ultimately trigger incidents, for example through investment in system design, standardization of procedures, and adequate supervision (Reason, 2000). If this principle is translated into health law, hospitals are obliged to manage SIRS as part of the essential infrastructure that supports services. This obligation includes selecting reliable system providers, establishing service agreements with specific availability standards, conducting periodic testing, and planning contingencies to deal with possible disruptions. When hospitals neglect these measures and system disruptions result in delays in services that could reasonably have been avoided, there is an argumentative basis for assessing the existence of institutional negligence relevant to legal liability (Aarts, 2012). Legal responsibility is not only attached to individuals, but also to the management structure chosen by the organization.

The modern regulatory literature approach is relevant to consider in mapping its legal position. The construction of the hospital's legal responsibility for SIRS system failure needs to be linked to the principle of civil liability in modern regulatory literature. Baldwin, Cave, and Lodge explain that modern public service organizations face demands for accountability for the management of risks arising from technological choices and institutional design (Baldwin et al., 2012). Hood, Rothstein, and Baldwin add that governments and institutions within the regulatory orbit are expected to be able to apply systematic risk management principles so that foreseeable risks are not allowed to develop into actual losses for citizens (Hood et al., 2001). In this perspective, hospitals as legal entities that provide health services are obliged to manage the risk of SIRS disruption through adequate technology governance. Failure to provide backup systems, alternative manual procedures, or responsive technical support can be considered a failure to meet institutional prudence standards. The accountability of service providers is thus not merely an administrative process, but relates to the ability to prevent previously anticipated risks.

The concrete impact of SIRS disruptions must be analyzed because it is directly related to the quality of hospital services. In daily services, SIRS disruptions can result in failed access to medical records, delayed patient identity verification, and delays in ordering medicines and supporting

measures. Studies on the use of electronic medical records in hospitals show that system reliability has a direct impact on the smooth running of clinical and administrative workflows (Jha et al., 2009). When the system experiences frequent unplanned downtime, healthcare workers are forced to improvise, for example by taking manual notes or postponing procedures until the system recovers. Ash and colleagues emphasize that such improvisation is prone to causing new errors, such as the loss of transition records or data inconsistencies, which ultimately harm patients (Ash et al., 2004). Within the legal framework, the fact that hospitals have chosen to rely on SIRS for their services makes the quality and sustainability of the system part of the service standards that must be met. The implementation of online SIRS aims to formulate policies in the field of hospitals, present national hospital information, and monitor, control and evaluate the implementation of hospitals nationally (Nurmalasari & Pratama, 2022). Thus, it is emphasized that system reliability is an integral part of the obligations of modern healthcare providers.

The analysis of responsibility cannot be separated from the issue of evidence in legal proceedings. Considerations regarding the burden of proof in civil lawsuits against hospitals are also relevant to unravelling the construction of responsibility. Patient safety literature indicates that distinguishing between incidents that are completely unavoidable and those that arise from planning failures is the first step in assessing accountability (Runciman et al., 2009). If patients can show that service disruptions occur repeatedly, without any adequate backup mechanisms, or that the hospital was aware of system weaknesses but did not take corrective action, then there are indications that the losses incurred are not merely a consequence of technology, but rather the result of managerial negligence. In normative legal analysis, these patterns can be used to develop criteria for when SIRS disruptions should be treated as a breach of contractual obligations or as unlawful acts. Thus, the assessment of accountability depends on the evidence presented showing institutional negligence or service system failure.

Clinical impact assessments must also be considered in patient safety. Failure to adopt information systems results in inefficient use of resources and decreased motivation to implement the system (Putri & Fitriani, 2022). The clinical consequences of SIRS disruptions that result in delayed diagnosis or treatment also need to be examined through the lens of patient safety. Delays in accessing relevant clinical information can lead to significant diagnostic errors and treatment delays, especially in emergency cases (Bates & Singh, 2018; Vitrianingsih et al., 2023). Van der Sijs and colleagues demonstrated that suboptimal medication alert systems, for example due to system malfunctions, can result in the omission of important warnings about drug interactions or dosages, with serious consequences for patient safety (Sijs et al., 2008). If SIRS disruptions remove the layer of protection that hospitals should provide, and patient harm falls within the realm of risk that should be managed through system design and maintenance, then the hospital's legal liability gains a strong factual basis. From a clinical safety perspective, SIRS failure is not merely a technical issue, but is directly related to protecting patients' lives.

Technology governance standards are important indicators in assessing the feasibility of system management. The Hospital Information System application on the server side is a web-based application that functions to receive input from client-side applications and also functions to manage databases (Mardiatmo et al., 2011). From the perspective of health information technology governance, various international guidelines emphasize the necessity of risk management, periodic testing, and service continuity plans (Aarts, 2012). The World Health Organization emphasizes that the application of information technology in health services must be accompanied by a framework that includes risk assessment, periodic monitoring, and documented incident handling procedures (World Health Organization, 2016). Without such regulations, system disruptions can more easily develop into widespread service outages. When hospitals ignore these governance standards, SIRS failures can no longer be viewed as mere technical events, but rather as a reflection of the organization’s failure to fulfil its obligation to maintain service continuity. In legal analysis, violations of widely recognized governance standards can be used as an indicator of negligence. In other words, technical standards must be used as a benchmark in assessing the legal responsibility of institutions.

The framework of hospital accountability is also in line with the concept of governance in public policy. The construction of legal accountability also intersects with the principles of health service governance developed in public policy studies (Brown et al., 2018). Hood and colleagues explain that public and semi-public institutions are required to have clear accountability mechanisms for failures

that harm citizens, including when these failures originate from the information systems they manage (Hood et al., 2001). In the hospital setting, SIRS is not merely a technical tool, but part of a structure that enables the fulfilment of patients' rights to information, continuity of service, and accurate documentation. Therefore, when a system failure occurs that causes these rights to be neglected, the construction of legal responsibility must link technical events to obligations set out in service standards and relevant laws and regulations. This reinforces the assessment that hospital responsibility is not merely a technical issue, but is related to the mandate of public service.

Proportional risk analysis helps determine the limits of responsibility. To distinguish between attributable responsibility and residual risk that is still acceptable, the concept of risk proportionality in safety management can be adapted to legal analysis (Raposo, 2015). Runciman and colleagues emphasize the need to classify incidents based on severity and preventability, so that organizations can priorities interventions in the most dangerous areas (Runciman et al., 2009). In legal terms, this can be translated into an assessment of whether the hospital has taken reasonable steps to mitigate the risk of SIRS failure, for example through system redundancy, user training, and temporary manual protocols. If such reasonable efforts can be demonstrated, then some of the risk can be classified as residual risk. Conversely, the absence of systematic efforts strengthens the argument that patient harm is a consequence of institutional negligence. This explanation provides limits to SIRS failures that should be treated as legal violations and the extent to which operational risks are still acceptable.

Legal evaluations must link technical aspects and the consequences of managerial policies. Based on this description, the construction of the hospital's legal responsibility for service disruptions due to SIRS system failure can be understood as the result of a link between systemic error theory, technology governance standards, and the principle of institutional prudence in health law. Hospitals cannot hide behind the fact that the direct cause of the disruption was a technical event, because the choice to operate a particular system, along with its maintenance pattern, falls within the realm of managerial policy (Jabin et al., 2022). The obligation to anticipate reasonably foreseeable risks is a key criterion for assessing whether SIRS disruptions that harm patients should be treated as a breach of legal obligations. Thus, the formulation of legal responsibility does not stop at tracing technical causes, but moves on to a comprehensive assessment of the hospital's system design and management policies. Thus, the existence of such risks must be viewed as the responsibility of the institution so that hospitals have control over prevention and mitigation.

The construction of legal responsibility also has practical implications for hospital management. Beyond normative aspects, this construction of responsibility encourages hospitals to review their views on SIRS. Information systems can no longer be placed as supporting facilities on the periphery of the service structure. The reliability, security, and availability of SIRS are part of the core capacity of hospitals to fulfil their service promises to patients (Sujan, 2018). A reliable and user-oriented system design, as stated in the pharmacy information system, is a basic prerequisite for ensuring data accuracy and operational smoothness (Malaihollo, 2022). Every decision regarding investment, maintenance, or selection of system providers has direct consequences for the fulfilment of the hospital's legal obligations (Williams & Kuziemsky, 2011). Therefore, developing a legal argument regarding responsibility for system failure is expected to encourage the strengthening of internal governance, so that the prevention of disruptions and rapid response when incidents occur become a planned part of the service strategy. Strengthening information system governance is an important part of improving service quality and reducing legal risks.

A clear framework of responsibility will educate all parties involved in healthcare services. In addition, a clear framework of responsibility provides guidance for patients and healthcare workers in interpreting SIRS disruptions. These new standards are part of the transformation of social values and practices in the digital age, which requires adjustments to organizational norms and culture in order to build trust and accountability (Al Hakim et al., 2021). Patients gain a stronger basis for assessing whether the disruption they experience is a reasonable risk or the result of institutional negligence. Healthcare workers can also understand that the smooth running of services does not depend solely on individual performance, but on the solidity of the system provided by management. Ultimately, the construction of adequate legal responsibility is expected to encourage the creation of an information technology-based healthcare ecosystem that is safer, more transparent, and in line with the principles of patient protection. Through this explanation, it can be understood that clarity of legal standards not only serves to enforce the law but also builds a better

culture of safety in the provision of healthcare services.

Analysis of the Legal Relationship between Hospitals and Patients and the Implications for Civil Liability and Administration

In the development of modern health law, the service relationship between patients and service providers increasingly demands guarantees of professionalism and clarity of responsibility. The legal relationship between hospitals and patients is essentially composed of two layers, namely health service agreements and normative obligations that arise directly from the law. In health law doctrine, this relationship is understood as both contractual and public, because hospitals do not merely provide private services, but also perform service functions that are strictly regulated by the state (Gostin & Wiley, 2016). Law No. 44 of 2009 on Hospitals emphasizes the obligation of hospitals to provide safe, high-quality, and non-discriminatory services, which means that all supporting devices, including the Hospital Information System, must be managed so as not to hinder the fulfilment of patients' rights (Firmansyah & Utomo, 2021). In this framework, information system failures can no longer be separated from the object of service obligations, as access to medical, administrative, and scheduling data has been integrated into it (Wachter, 2015). This description shows that the legal relationship between hospitals and patients has dual consequences involving the public.

Civil liability in healthcare relationships provides an understanding of the scope of the contractual obligations of medical service providers. The civil dimension of the hospital-patient relationship can be derived from the principles of freedom of contract and the obligation of good faith as regulated in the Civil Code. When patients register and receive services, a healthcare agreement is formed which contains the hospital's obligation to provide services in accordance with reasonable standards. Law No. 8 of 1999 concerning Consumer Protection strengthens the position of patients as consumers of healthcare services, so that hospitals are obliged to ensure that the services provided are safe and beneficial (Samuji & Ramadhani, 2021). Consumer protection literature emphasizes that service failures due to the internal systems of service providers can form the basis of liability for consumer losses, to the extent that defects in the services or negligence in their management can be proven (Howells et al., 2018). In cases of SIRS failure resulting in service delays or administrative errors, patient losses can be constructed as a direct consequence of services that do not meet promises and standards. This civil law construction shows that information system disruptions can turn into real legal liability consequences.

Furthermore, information technology has now become an important element in fulfilling service obligations. The relationship between hospital obligations and the reliability of electronic systems is further emphasized by Law No. 11 of 2008 concerning Electronic Information and Transactions (ITE). This regulation stipulates that electronic system operators are obliged to implement reliable and secure systems and are responsible for ensuring that the systems function properly. Information technology legal doctrine views the obligation of reliability as part of the standard of care for electronic system operators, especially when the system is used for critical public services (Kuner, 2013). Thus, hospitals that operate SIRS are positioned as electronic system operators for health services, so that system failures that harm patients can be interpreted as an indication of a violation of the system reliability obligation as referred to in the ITE Law, in addition to being civil negligence within the framework of service agreements. This analysis confirms that the reliability and accuracy of Hospital Information Systems are not merely technical issues, but also part of the legal obligations that must be fulfilled by hospitals as healthcare service providers.

Within the framework of government administration, healthcare service standards are binding and place hospitals as legal entities that must comply with state supervision. The administrative aspect of the hospital-patient relationship cannot be separated from the state's authority to regulate and supervise healthcare services. Law No. 44 of 2009 stipulates that hospitals must comply with service standards and be subject to guidance and supervision mechanisms. Minister of Health Regulation No. 88 of 2015 concerning Guidelines for Supervision, Reporting Systems, and Information Systems in the Implementation of Guidance and Supervision of Hospitals emphasizes the need for information systems that support quality and safety supervision functions. In health regulation studies, administrative supervision is understood as an instrument to ensure that general legal obligations are actually operationalized through technical standards and internal procedures (Flood & Gross, 2014). If SIRS failure occurs because the hospital does not meet the requirements for information system management as directed by ministerial regulations, then administrative sanctions such as warnings,

service restrictions, or even revocation of licenses may be justified as a response to violations of operational obligations. Thus, hospitals are not only responsible for patients but also to regulators who ensure administrative compliance in the provision of health services.

Sectoral regulations place SIMRS as an official part of the service process, thereby requiring confirmation of technical obligations regarding the information system. More technical obligations regarding the implementation of SIMRS are regulated in Minister of Health Regulation No. 82 of 2013 concerning Hospital Management Information Systems. This regulation requires hospitals to develop and operate an integrated SIMRS to support medical and non-medical services. The Minister of Health Regulation on Hospital Information Systems should be able to fulfil the principle of openness, so that every hospital can have guidelines and a legal umbrella for information disclosure to various parties, including the Ministry of Health and the public (Novianti et al., 2015). The literature on health information technology governance emphasizes that the obligation to integrate systems must be accompanied by responsibility for quality and operational sustainability, as integration failures can disrupt service continuity and patient data accuracy (Greenhalgh et al., 2017). When SIMRS experiences serious failures that hinder registration, recording, or service monitoring, such events are not merely technical disruptions, but have the potential to be classified as administrative violations of the obligation to operate a proper system according to Permenkes 82/2013, with implications of sanctions from the hospital supervisory authority. With the enactment of this regulation, the SIMRS now has the status of an element that influences service delivery, not merely as a supporting technological tool.

The integration of population data and hospital systems is an important aspect that strengthens patient identity administration. The relevance of Law No. 23 of 2006 in conjunction with Law No. 24 of 2013 on Population Administration arises in relation to the integration of population data and patient data in hospitals. The shift in identity management and social interaction in the broader digital era also influences the context of public services, including how institutions such as hospitals and population services manage citizen data (Safira et al., 2021). Many hospitals rely on population registration numbers and demographic data from population administration systems for patient identity verification and medical record compilation. Studies on the interconnection between health and population systems show that integration failures can lead to administrative problems, such as duplicate identities, data inconsistencies, or financing claim obstacles (World Bank, 2018). If SIRS failure results in hospitals being unable to utilize or update population data appropriately, administrative consequences may arise, both in the form of reporting errors and disruptions to patients' administrative rights, for example, related to health financing guarantees. This condition confirms that hospital information system failures have a significant public administration dimension (Firmansyah & Utomo, 2021). This connection illustrates that technical disruptions to the SIRS can have a direct impact on patients' rights as citizens in the healthcare process.

Civil law in Indonesia provides two dispute resolution mechanisms that patients can pursue when they suffer losses due to service system disruptions. From a civil liability perspective, patients who are harmed by service disruptions due to SIRS failures have two main avenues: breach of contract claims and unlawful act claims. Modern civil law literature explains that when the basic relationship between the parties is a service agreement, the first test lies in whether the service provider has fulfilled the performance in accordance with the quality, time, and manner that can be reasonably expected (Hartkamp et al., 2013). If a hospital fails to provide timely services due to an easily disrupted information system or a lack of alternative procedures, this situation can be argued as negligence in fulfilling performance. On the other hand, if the loss arises from a general breach of the duty of care in managing technological facilities for the safety of others, the tort route may be used, especially if the loss exceeds the scope of the explicit contract. Thus, it can be understood that system failure can be assessed as a contractual breach or a general legal fault that can result in legal liability.

Consumer protection regimes add a layer of security for patients facing the risk of loss from technology-based service systems. The Consumer Protection Act provides an additional basis for patients to claim compensation for losses arising from services that do not meet safety standards. Howells and colleagues' emphasis that modern consumer protection regimes recognize complex forms of services that rely on technological infrastructure, so that the provider's responsibility does not stop at direct actions, but includes the management of the system that is the medium of service (Howells et al., 2018). In the case of SIRS failure, patients can argue that hospital services as a

business are not only medical actions, but also include a guarantee that the information system used is reliable enough to prevent reasonably foreseeable losses. If it is proven that the hospital neglected system maintenance or did not prepare a proper contingency plan, compensation claims under the Consumer Protection Law have a strong basis. This position confirms that SIRS failure in service can be considered a violation of the service provider's obligations under the Consumer Protection Law.

Furthermore, supervisory efforts are directed at risk mitigation so that service providers do not cause systemic losses to the community. In the administrative sphere, the authority of the Ministry of Health and hospital supervisory agencies to impose sanctions must be interpreted within the framework of risk regulation (Ramanathan, 2014). Hood, Rothstein, and Baldwin explain that the risk regulation regime aims to encourage organizations to control the risks they create or manage, through a combination of standards, monitoring, and sanctions (Hood et al., 2001). In hospital management, Permenkes 88/2015 provides a basis for authorities to assess whether the information system used supports reporting, quality monitoring, and safety. If recurring patterns of SIRS failure are found and are not responded to with adequate corrective action, administrative sanctions such as written warnings, restrictions on service units that depend on the system, or more severe measures may be justified as corrective measures to protect patients and ensure accountability of services. In this case, the administrative sanction mechanism serves as a risk management instrument that is not intended to punish, but rather to restore and improve service standards.

The distinction between civil and administrative liability facilitates the mapping of the scope of responsibility when a service system disruption occurs. The analysis of the legal relationship between hospitals and patients in the context of SIRS failure also requires a distinction between the scope of civil and administrative liability (Suyoko et al., 2021). Flood and Gross point out that in many jurisdictions, civil malpractice regimes and administrative oversight coexist with different objectives: the former focuses on compensating victims, while the latter focuses on system correction and incident prevention (Flood & Gross, 2014). In cases of service disruption due to system failure, civil lawsuits from patients are aimed at obtaining compensation for individual losses, while administrative sanctions aim to encourage hospitals to improve their systems and procedures so that similar incidents do not recur. This separation of functions helps to avoid overlap and ensures that SIRS failures are viewed as a matter of both individual and institutional accountability. This classification demonstrates a more systematic mapping of responsibilities in modern healthcare risk management.

Sectoral and general regulations in health services form a complementary legal framework. The Electronic Information and Transactions Law, the Hospitals Law, and the Consumer Protection Law, together with related Minister of Health regulations, create integrated norms. The effectiveness of regulations depends on the integration of sectoral norms with cross-sectoral principles such as system reliability (Gostin & Wiley, 2016). This positions the hospital-patient relationship uniquely, such that a single system failure can result in both civil and administrative liability.

In operational practice, procedural readiness and contingency planning are key to maintaining the continuity of technology-based services. From a practical perspective, the above analysis shows that hospitals have an obligation to design service agreements and operational procedures that recognize the central role of SIRS in the legal relationship with patients. Informing patients about possible system failures and alternative procedures during disruptions, documenting SIRS incidents, and reporting to regulatory authorities will be an important part of the defense if disputes arise. At the same time, the existence of clear regulations provides a reference for patients, advocates, and law enforcement to assess whether a system failure is a reasonable risk or indicates a neglect of normative obligations. Thus, the legal relationship between hospitals and patients does not stop at the promise of clinical services, but includes overall responsibility for the technological structures that support those services. This perspective emphasizes that technology risk management is an important element that needs to be considered in the legal obligations of providers of technology-based healthcare services.

A comprehensive study shows that information systems are an integral part of the legal responsibilities of hospitals. Ultimately, it can be concluded that the legal relationship between hospitals and patients in the era of SIRS-based services places the failure of technology systems at the center of the legal relationship between hospitals and patients.

Based on research, the failure of the Hospital Information System (SIRS) is an integral part of assessing the legal responsibility of hospitals. The legal framework consisting of the Hospital Law,

Consumer Protection Law, ITE Law, and Minister of Health Regulations No. 82/2013 and No. 88/2015 provides the basis for determining whether service disruptions constitute a breach of contract, unlawful acts, or administrative violations. In conclusion, the digitization of healthcare services demands stricter and more measurable accountability standards.

CONCLUSION

The discussion shows that the failure of SIRS is related to the legal obligations of hospitals. Normatively, service disruptions can be considered institutional negligence. The contractual and normative relationship between hospitals and patients, according to the Hospital Law, Consumer Protection Law, and ITE Law, allows for the imposition of civil liability. Meanwhile, Minister of Health Regulations No. 82/2013 and No. 88/2015 provide the basis for administrative sanctions. Thus, the legal construction of liability includes compensation for patients and correction through state supervision.

The implications of this study emphasis the need to strengthen SIRS governance as an integral part of fulfilling hospitals' legal obligations. Hospital management must place the planning, maintenance, and testing of information systems within the framework of legal risk management. From a regulatory perspective, the results of this study provide an argumentative basis for formulating oversight policies that are more sensitive to information system failures, for example by emphasizing the obligation to document SIRS incidents and service continuity plans. For law enforcement officials and advocates, mapping the types of civil and administrative liabilities that may arise provides guidance in preparing claims and assessing the proportionality of sanctions when patient harm is related to service disruptions resulting from system failures.

Hospitals are advised to develop written internal policies on SIRS management, covering risk analysis, recovery standards in the event of disruptions, incident reporting mechanisms, and clear information to patients about service procedures when the system is down. Central and local governments need to update their oversight guidelines to include SIRS reliability performance indicators, including mandatory load testing and periodic security audits. Further research is recommended to combine normative analysis and empirical data on patterns of lawsuits and administrative sanctions related to hospital information system failures, so that assessments of institutional negligence can be supported by broader evidence of practice.

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