Implementation of IT governance using ITIL Domain Service Operation in Indonesian Hospitals

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Article Info	ABSTRACT
	In the modern era, the rise of IT is transforming various sectors, including governmental institutions and healthcare facilities. These advancements empower organizations to enhance their effectiveness and competitive edge through IT utilization. In Indonesia, hospitals are adopting frameworks such as ITIL to manage their IT resources more effectively. Despite encountering obstacles like integration issues and patient data management complexities, hospitals are dedicated to improving their operational performance. Implementing ITIL Domain Service Operation within Indonesian hospitals marks a significant stride towards refining operational efficiency and service excellence. By focusing on daily functions like incident management and service performance monitoring, ITIL optimizes IT service management, elevating patient satisfaction. Nonetheless, challenges persist, including limited resources and organizational hurdles. Previous studies underscore the significance of structured IT management frameworks in streamlining processes and supporting efficient IT service management. Through systematic literature reviews, researchers aim to offer insights and recommendations for enhancing healthcare service provision. Overall, the proliferation of IT presents promising prospects for advancing healthcare services in Indonesia, fostering superior patient care and organizational efficiency.

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1. INTRODUCTION

In the current era of globalization, information technology is growing rapidly and has experienced rapid advancement, as well as its utilization that has also greatly increase over time. The development of information technology systems has led to many positive changes that have provided solutions and benefits to users [1][2][3]. The use of digital technology has enabled humans to create, process and transmit information more quickly and efficiently than before [4]. Every organization needs IT to support many activities and handling its business processes and ideally, an institution formed an IT organizational structure to manage it, including government institutions that are currently increasing the utilization and investment in information and communication technology. To ensure that the utilization of Information Technology truly supports the goals of governance, it is necessary to pay attention to the efficiency of resource utilization and risk

management [5][6]. Information technology serves as a competitive advantage in facing informational competitiveness and also as a robust tool and strategy for integration and the creation of new products and services, thus enhancing competitiveness in the market [7]. One parameter for determining the quality of healthcare services in hospitals is good and complete medical record data or information. Data security and customer privacy are crucial issues in a digital environment that is vulnerable to cyber-attack[8]. Good medical record quality indicators include completeness of content, accuracy, timeliness, and compliance with legal requirements [9]. Due to the [10] era of technology, lots of institutions and organizations are required to utilize technology, including institutions like hospitals, which are demanded to enhance performance and competitiveness. They have to formulate strategic policies including internal efficiency within the company, organization, management, and agencies [11]. A hospital, as a healthcare institution, prioritizes patient treatment as its primary operational focus for success. However, the administrative functions also play a vital role in evaluating and maintaining the quality of services provided by the hospital [12]. Hospitals are one of the healthcare facilities that empower various units of trained and educated personnel to address and manage medical issues for recovery and maintenance of good health [13]. Increasingly, it is being realized that the activities of Hospitals are very complex not only have a positive impact on the surrounding community, but also possibly negative impacts. Positive impacts include providing good health services to patients and generating revenue for the government and the service institutions themselves. However, hospitals can also have negative impacts such as adverse effects on humans, such as hospital waste and waste that can cause environmental pollution, sources of disease transmission, and hinder the healing and recovery process of patients [14]. The abundance of hospital choices prompts the public to seek the best ones. Through the convenience of technology, people can easily access the Google Reviews. Every rating and comment, from the best to the worst, provided by visitors who have visited or received treatment at the hospital, can clearly read. If these hospitals fail to pay attention to service quality, negative reviews from the public could affect the business goals of the hospitals [15]. To compete effectively with other hospitals, the effectiveness of healthcare services must be further improved to provide excellent service to patients [16]. According to Handiwidjojo in 2009, all stages of the healthcare business process, such as reporting documents, coordination networks, and administrative procedure flows in hospitals, can be integrated and processed with the help of a computer system application [17]. Information Technology for an organization is not only beneficial because of the availability of its infrastructure; the existence of IT infrastructure should also be able to be utilized to improve the quality of IT services oriented towards customer satisfaction [18].

The development of information technology has changed the human perspective on completing work. including the operation of businesses, where humans still need relationships in managing their business units. Previously, before the help of information technology, companies relied on manual processes. However, with the swift progress of information technology, computerization can enhance human performance and conserve resources that required in the process [19]. Information Systems is a combination of information technology and the activities of people using the technology to support operations and management. In a broad context, this term often denotes the interplay between individuals, automated processes, data, and technology. The effective use of information systems by numerous companies to support their business processes has motivated university leaders to implement information technology practices. This adoption aims to enhance competitiveness and bring about improvements in services, work processes, and relationships among academic communities, researchers, and stakeholders of various interests and levels. Therefore, the implementation of IT needs to be carefully prepared through the governance policies (IT Governance). This is conducted to elevate the role of IT in enhancing performance, optimizing organizational assets, reshaping services, markets, and workflows, fostering better business relationships, and ultimately fortifying the organization's competitive advantage. [20]. An Information System is necessary to assist healthcare professionals during patient care and to enable efficient management of healthcare facilities by accessing data on production and resource utilization [21].

The importance of hospital information systems has been regulated in the Minister of Health Regulation No. 82 Year 2013 regarding Hospital Management Information Systems (HMIS). This regulation stipulates that based on Law No. 44 Year 2009, every hospital is required to record and report all operational activities of the hospital in the form of Hospital Information Management Systems [22]. Since 2009, the Indonesian government has mandated that all hospital management activities must be recorded and reported in the form of Hospital Information Management Systems. Hospital Information Management Systems is an IT system that can process and integrate all service processes in hospitals to obtain accurate and timely information. One of the main goals of Hospital Information Management Systems is to improve and support hospital services. Therefore, good IT governance must be aligned with the business objectives of the hospital [23].

A case study conducted at a hospital found that although the hospital had implemented Hospital Management Information Systems for quite some time, its benefits had not been fully felt by stakeholders. Poor implementation of HMIS will certainly affect the quality of hospital services [24]. Therefore, the implementation of Information Technology governance based on Information Technology Infrastructure Library (ITIL) Domain Service Operation in hospitals in Indonesia is an important step towards improving efficiency and service quality. Enhancing the quality of information services will significantly impact the alignment of information presentation with the business processes necessary to fulfill the hospital's vision, mission, and goals. [23][25]. Hospitals, as institutions relying on information systems, require structured and measurable management. In this context, ITIL can be a relevant framework for managing IT services. ITIL Domain Service Operation focuses on day-to-day operations, including incident management, request management, access management, and service performance monitoring. By applying ITIL principles, hospitals can optimize the use of information technology and improve patient satisfaction as well as internal process efficiency [26].

To implement it well [27], we found that various hospitals in Indonesia have implemented IT Governance using ITIL Domain Service Operation, which is crucial given the challenges faced by the healthcare sector in this country. By utilizing ITIL, stakeholders can assess the extent to which the IT Support team is capable of mastering and executing its business processes; this requires measurements using existing best practices. Through performance measurements of the IT Support division, hospitals can establish a basis and direction for improving the quality of their services [28]. In general, many operational issues hinder efficiency and affect service quality, such as the lack of complete IT system integration, difficulty in managing complex patient data, and uncertainty in maintaining hardware and software. Additionally, better coordination between service units and departments within hospitals is also a significant challenge. Therefore, a good understanding of how to apply the principles of ITIL Domain Service Operation is essential to improve operational performance and healthcare services overall. This research aims to investigate how hospitals in Indonesia can use these principles to address these challenges and enhance the quality of the services they provide.

In previous studies, such as the one mentioned by Wardani in her work titled "Perancangan tata kelola Sistem Informasi Manajemen Rumah Sakit (SIMRS) berbasis ITIL V3 & Service Desk Standard (Studi Kasus: RSUD Kota Kediri)", the result of analysis and design related to the governance of hospital management information systems based on the ITIL V3 framework and Service Desk Standard have been conducted. A case study was conducted at the Regional General Hospital of Kediri City to illustrate the practical implementation of these concepts in the context of a hospital [26]. This study discusses the design of an efficient IT organizational structure to manage the Hospital Management Information System (HMIS) at the Regional General Hospital of Kediri City, as well as relevant IT processes associated with HMIS, including incident management, change management, and service management. The implementation of ITIL V3 helps optimize these processes and identify the necessary documents to support HMIS, including policies, procedures, and guidelines that align with the ITIL framework. Based on this research, ITIL V3 can be applied by integrating it with the Service Desk Standard framework. Thus, hospitals can design IT organizational structures, optimize IT processes, and produce documents that support the efficient management of IT services.

There is also another study that can be quoted from Matindas E entitled "Self-Assessment Manajemen Layanan Menggunakan Framework Information Technology Infrastructure Library (ITILv4) Pada Incident Management Rumah Sakit Hermina, Lembean, Sulawesi Utara" [11]. This research implements the ITIL V3 framework in the Incident Management and Problem Management processes within the operational HMIS. Recommendations are provided for improving operational service management at level 2 (Repeatable), but there is still a need for standard operating procedures to enhance maturity. It is recommended to make operational improvements in IT service management within HMIS.

Based on the background provided above, this research aims to analyze the quality of IT services using the ITIL V.3 service operation framework in the HMIS section by ensuring that the existing IT supports business processes and that available resources are used responsibly and risks are properly controlled. Furthermore, the study seeks to determine the extent to which the quality of IT services has been implemented. [29]. By focusing on incident, request, access, and service performance monitoring management, ITIL provides a relevant framework to optimize the use of information technology. However, challenges such as incomplete IT system integration and difficulties in patient data management highlight the urgent need for effective implementation. This research aims to provide insights to investigate how hospitals in Indonesia can use these principles to address these challenges and enhance the quality of the services they provide

2. METHOD

Methodology research serves as a guide for conducting the various stages of research to ensure they proceed smoothly [26]. The research conducted inevitably requires a method or approach commonly referred to as research methodology [30]. Research is an organized investigation, it can also be interpreted as a continuous search for knowledge and giving meaning to something. Research methodology can be defined as a more detailed procedure regarding the stages of conducting a research [31]. In this paper [32],the research is conducted using the literature review method or Systematic Literature Review (SLR), which involves a thorough evaluation of previous research conducted systematically by applying relevant standards. The aim of this research method is to gather, identify, evaluate, and synthesize scientific evidence related to the topic under discussion [32][33]. Systematic Literature Review in IT Service management has been widely researched [34]. The method employed in crafting this protocol and evaluation aids the authors in compiling reports and reviewing several articles, making it easier to process data in the Systematic Literature Review [35]. In this research method, there are several stages involved. The first stage is determining the problem, which is the initial step taken. Clearly identifying the problem ensures that the collected data addresses the issue.

In determining the problem, several factors need to be considered, namely the research background, the impact of the research, and practical significance. Establishing specific research questions serves as a guide for literature search and data analysis [36]. In the second stage, the research topic is determined after the problem is identified. When determining the research topic, several factors need to be considered, such as the research needs and the relevance of the topic to the problem. Then, in the third stage, data collection is conducted, which can be done through literature studies, observation, and document analysis using various media sources such as Google Scholar and other scholarly sources with appropriate keywords. Next to the fourth stage, is the step to analysis the collected data is performed to obtain relevant and interpretable information. In the final stage, writing and organizing the paper are carried out to present the research results systematically and structuredly. The paper's organization must be done well so that the data and information presented are related to the content of the research conducted [37].

The components of research questions should be based on five elements: Population (P), Intervention (I), Comparison (C), Outcomes (O), Context (C). The TLS protocol needs to be established to determine the research steps. The research stages consist of a plan containing procedures and methods chosen for conducting TLS. The TLS stages include 7 aspects: Background, Research Questions, Search terms, Selection criteria, Quality checklist and procedures, Data extraction strategy, Data synthesis strategy [38]. The data used in this research are secondary data obtained not from direct observation but from previous studies or research. Secondary data sources can include accredited national articles or journals with themes predetermined by the researcher. Literature search in this literature study uses the Microsoft Academic database. The search process is used to obtain relevant sources that are used to answer the research problem formulation or research questions (RQ) and other related references [39].

Figure 1. Systematic Literature Review Method

3. RESULTS AND DISCUSSION

The Hospital Management Information System (HMIS) is a system that aligns various hospital management activities such as medical records, pharmacy warehousing, billing, and patient databases. Various benefits of having HMIS include maintaining data consistency, where the data can be shared and used by doctors, nurses, pharmacists, and other departments [40].

Overall, Hospital Management Information Systems (HMIS) provide numerous benefits to hospital business processes and can improve the healthcare services provided by hospitals. Although some studies still indicate that HMIS is not yet perfect, it is still superior to the old paper-based systems. Despite being considered superior, the transition between the new and old systems is still faced with difficulties. Many factors contribute to this transition difficulty, ranging from system imperfections to the existing culture within healthcare facilities that are not yet accustomed to new technologies in service delivery practices, such as pharmacy logistics management in hospitals [41].

In addition to the challenges posed by transitioning from paper-based systems to Hospital Management Information Systems (HMIS), it's imperative to address the importance of ongoing training and support for hospital staff. Adequate training programs and continuous support are essential to ensure that healthcare professionals can effectively utilize HMIS to its fullest potential. Moreover, fostering a culture of adaptability and innovation within healthcare facilities is crucial for embracing technological advancements and optimizing the benefits offered by HMIS. By investing in training initiatives and promoting a culture of openness to change, hospitals can overcome the challenges associated with HMIS implementation and pave the way for enhanced efficiency and quality in healthcare delivery.

3.1 The following are various analysis results from the research we had conducted on various types of services in hospital.

3.1.1. *Analisis* maturity level *pada* Rumah Sakit XYZ [42]

XYZ Hospital, a healthcare institution dedicated to serving the community with quality care, recognizes the importance of leveraging information technology to enhance its services. The Hospital Management Information System (HMIS) plays a pivotal role in supporting various hospital functions.

To ensure effective utilization of IT resources, management oversight is crucial for assessing and improving the IT processes. In the context of XYZ Hospital, measuring the readiness and effectiveness of HMIS implementation is imperative. This study employs the Information Technology Infrastructure Library Version 3 framework, specifically focusing on the Service Operation domain, to analyze IT management practices.

The findings reveal a maturity level of 3.17, indicating a Defined level of readiness, as determined through questionnaire responses and recommendations stemming from the assessment. The focus now shifts towards achieving a level 4 maturity, denoted as Managed, through targeted improvements and enhancements in IT management practices.

3.1.2. *Analisis kualitas layanan Teknologi Informasi menggunakan* service operation framework itil V3 *pada bagian SIMRS* RSUD Salatiga [43]

RSUD Salatiga, recognizing the pivotal role of Information Technology (IT) in enhancing service quality, has implemented the Hospital Management Information System (HMIS). This system is designed to streamline operations, improve efficiency, and ultimately elevate the standard of care provided to patients.

Beyond HMIS development, the IT division at RSUD Salatiga extends its services to encompass all aspects of IT support within the hospital. In order to uphold the quality of IT services, RSUD Salatiga adopts the ITIL V3 framework as a guiding mechanism for achievement.

This framework provides a structured approach to IT service management, ensuring consistency and reliability in service delivery. However, despite these efforts, the research findings highlight challenges stemming from inadequate Human Resources (HR), which hinder the optimal management of HMIS and consequently impact the maximization of IT service quality.

3.1.3. *Analisis kepuasan pengguna SIMRS pada* Rumah Sakit Jiwa provinsi Bali [44]

This study aims to evaluate the level of user satisfaction with the Hospital Information System (HIS) at the Provincial Mental Hospital of Bali (RSJ Propinsi Bali) and formulate appropriate improvement recommendations. With increasing complaints from users and a lack of previous research examining user satisfaction with HIS at RSJ Propinsi Bali, researchers used the End User Computing Satisfaction (EUCS) method to measure user satisfaction.

Data was collected through Likert scale questionnaires validated by two assessors and analyzed using various descriptive statistical techniques. The research findings indicate that the level of user satisfaction with the information quality (IQ) variable has a mean score of 83.0, falling into the "very satisfied" category, while the system quality (SQ) variable has a mean score of 76.9, categorized as "satisfied."

Further analysis reveals three dimensions with significant influences: content, system speed, and training. Based on the data findings, researchers developed 12 improvement recommendations for HIS, which were discussed in a Focus Group Discussion (FGD) with RSJ Propinsi Bali to obtain feedback and approval.

However, further analysis is still needed to comprehensively understand user satisfaction levels and implement HIS improvement recommendations effectively at RSJ Propinsi Bali.

3.1.4. *Perbandingan sebelum dan setelah penerapan SIMRS pada* **Layanan Farmasi Rumah Sakit** [45]

This study aims to determine the comparison of pharmacy service quality before and after the implementation of electronic prescriptions. The instruments used in this literature review are databases from PubMed, ProQuest, and Google Scholar by searching for journals between 2010 and 2020. A total of 9 review journals were included in this review.

Based on the research, it is concluded that the pharmacy service after implementing the Hospital Information Management System is superior to the previous system. In other words, the use of electronic prescriptions can improve the quality of pharmacy services, including in terms of medication dispensing speed, reducing errors in treatment, ensuring compliance with formularies, and increasing patient satisfaction compared to manual prescription use.

3.1.5 *Penerapan* **Framework ITIL** *untuk Manajemen Bencana dan Pemulihan pada* **Rumah Sakit ABC** [46]

ABC Hospital uses health information technology to provide health services to the community. The application of information technology at ABC Hospital is of course also inseparable from the risk of disaster and disruption. In operational activities, disturbances that often occur include disorders such as paralysis IT services, integration problems between IT components, and bugs occurring in system development There is. This disturbance was handled by the limited staff of the Information Systems unit at ABC Hospital. This limitation is due to unclear and overlapping policies and procedures. Today, ABC hospitals need a clear disaster management and recovery procedure in order can ensure the operational continuity of ABC Hospital in providing services health.

Compilation of disaster management and recovery procedures at ABC Hospital using ITIL v3 framework that is tailored to the needs of the hospital. Stages that are passed from the preparation stage, analysis of information, adjusting procedures (fit-in), preparation of procedures, and then do verification and validation so that the procedures that are built can be implemented specifically at ABC Hospital.

3.1.6. *Analisis Manajemen Layanan Teknologi Informasi Menggunakan* **ITILV3 Domain Service Operation** *pada* **RSU PKU MUHAMMADIAH PURBALINGGA** [47]

RSU PKU Muhammadiyah Purbalingga has implemented information technology that facilitates users in carrying out service management and processing company administration data. Through research on three processes, namely Event Management, Request Fulfillment, and Problem Management, it was concluded that an increase in hardware, software and adequate infrastructure is needed to increase the work effectiveness of RSU PKU Muhammadiyah Purbalingga.

3.1.7. *Analisis Pemanfaatan Sistem Informasi Manajemen Rumah Sakit (SIMRS) pada* **RRSUDDOKIIJayapura** [48]

Based on the research on the Analysis of the Use of the Hospital Management Information System at RSUD Dok II Jayapura, several conclusions can be drawn as follows:

1. Quality of Hospital Management Information System: Informants indicated that changes in hospital management are one of the obstacles in the development of HMIS in the hospital. Issues in HMIS include server bottlenecks and application mismatches. This highlights the need for increased awareness among relevant parties about the importance of HMIS.
2. Quality of Hospital Management Information System in terms of Human Resources: Informants stated that the number of human resources is considered adequate, except for programmers. However, there is no routine training program organized to enhance the competencies of the human resources. Additionally, there is a lack of discipline among the staff, as well as the absence of a reward and punishment system.

3.1.8. *Analisis kepuasan pelanggan terhadap penggunaan aplikasi SIMRS di* **VK ponek RSUD abepura** [49]

The study presented in the provided document evaluates user satisfaction with the Hospital Management Information System application using the End-User Computing Satisfaction (EUCS) method. The EUCS framework assesses various aspects of system performance including content, accuracy, format, ease of use, and timeliness. These components are critical in determining the effectiveness of the Hospital Management Information System application in supporting hospital operations.

In the research findings, the satisfaction scores across different categories were notably high. The content dimension received an 83% satisfaction rate, which indicates that the users found the information provided by the Hospital Management Information System to be largely relevant and useful. Similarly, the accuracy of the system, which refers to the correctness and reliability of the information, scored 86%, suggesting a high level of trust in the data processed by the application.

The results of this research are that user satisfaction of the Hospital Management Information System application using the EUCS method starting from the Content section gets a score of 83%, accuracy 86%, format 85%, ease of use 83%, and timeliness 82%.

3.1.9. *Evaluasi Penerapan Sistem Informasi Manajemen Rumah Sakit (SIMRS)* di RSUD Praya Kabupaten Lombok Tengah Nusa Tenggara Barat [50]

A comprehensive evaluation of the implementation of Hospital Management Information System in hospital units is crucial to understanding its impact on service quality. This evaluation should encompass various aspects such as usability, operational efficiency, data security, and its benefits to patient care. Hospitals must prioritize developing Hospital Management Information System by considering factors that influence its effectiveness and the advantages it brings. This evaluation will provide valuable insights for further improvement and optimization of Hospital Management Information System in hospital settings.

From the results of data analysis, it is concluded that partially there is a significant influence between human, organizational, technological, user knowledge, and regulatory factors on the net benefit of Hospital Management Information System. In addition, simultaneously there is also a significant influence between these factors on the net benefits of Hospital Management Information System, as indicated by the Sig.t and Sig.F values which are less than 0.05. This indicates that the variables studied have an important contribution in increasing the net benefits of Hospital Management Information System implementation in hospitals.

3.1.10. *Analisis Kualitas Pelayanan Rumah Sakit Terhadap Pasien menggunakan* Pendekatan Lean Servperf (LEAN SERVICE DAN SERVICE PERFORMANCE Studi Kasus Rumah Sakit X) [51]

In a detailed examination of Hospital X's service quality, the study adopts the Lean ServPerf Approach, combining aspects of Lean Service and Service Performance. The Lean Service component is strategically applied to identify and eliminate wasteful activities within the hospital's service delivery processes, thus focusing only on those actions that add substantial value to the patient care experience. This methodology is pivotal in enhancing operational efficiency and effectiveness by minimizing unnecessary resource consumption.

The Service Performance aspect of the approach involves a meticulous analysis of various service performance instruments. This analysis is critical as it evaluates each service attribute systematically, determining their effectiveness and impact on overall service quality. Through this rigorous assessment, the study aims to pinpoint areas that are critical for improving interactions and outcomes for patients, thereby directly boosting the overall quality of care provided by the hospital.

The results from this study are quite revealing, indicating that there are 15 specific service attributes that require significant improvement. These attributes, essential for elevating the standard of care at Hospital X, range from patient communication and responsiveness to medical accuracy and appointment availability. Each identified attribute represents a potential area for strategic enhancement, with the ultimate goal of not only meeting but exceeding patient expectations in healthcare delivery. This focus on specific service attributes allows for targeted interventions that could lead to substantial improvements in the quality of service at Hospital X.

3.2 Comparative Pros and Cons Analysis on Various Aspects of Hospital Services.

Table 1Pros and cons comparison

No	Paper	Pros	Cons
1	*Analisis* maturity level *pada* Rumah Sakit XYZ	Utilizes ITIL V3 framework to analyze IT management practices with a focus on the Service Operation domain.	Focus on achieving level 4 maturity still remains a challenge.
2	*Analisis kualitas layanan Teknologi Informasi menggunakan* service operation framework itil V3 *pada bagian SIMRS* RSUD Salatiga	Adopts ITIL V3 framework to maintain IT service quality.	Faces challenges of inadequate Human Resources (HR).
3	*Analisis kepuasan pengguna SIMRS pada* Rumah Sakit Jiwa provinsi Bali	Uses End User Computing Satisfaction (EUCS) method to measure user satisfaction.	Further analysis needed for comprehensive understanding of user satisfaction levels.

4	*Perbandingan sebelum dan setelah penerapan SIMRS pada* Layanan Farmasi Rumah Sakit	SIMRS implementation enhances pharmacy service quality.	-
5	*Penerapan* Framework ITIL *untuk Manajemen Bencana dan Pemulihan pada* Rumah Sakit ABC	Implements ITIL V3 framework for disaster management and recovery.	Issues of server bottlenecks and application inconsistencies.
6	*Analisis Manajemen Layanan Teknologi Informasi Menggunakan* ITILV3 Domain Service Operation *pada* RSU PKU MUHAMMADIAH PURBALINGGA	Highlights the need for increased hardware, software, and infrastructure for improved work effectiveness.	-
7	*Analisis Pemanfaatan Sistem Informasi Manajemen Rumah Sakit (SIMRS) pada* RRSUDDOKIIJayapura	Highlights changes in hospital management as one of the obstacles in SIMRS development.	-
8	*Analisis kepuasan pelanggan terhadap penggunaan aplikasi SIMRS di* VK ponek RSUD abepura	EUCS method shows high user satisfaction with the HMIS application.	-
9	*Evaluasi Penerapan Sistem Informasi Manajemen Rumah Sakit di* RSUD Praya Kabupaten Lombok Tengah Nusa Tenggara Barat	Highlights significant influence of various factors on the net benefit of SIMRS implementation.	-
10	Analisis Kualitas Pelayanan Rumah Sakit Terhdap Pasien menggunakan Pendekatan Lean Servperf (LEAN SERVICE DAN SERVICE PERFORMANCE Studi Kasus Rumah Sakit X)	Adopts Lean ServPerf approach to enhance hospital service quality.	-

3.3 LESSON LEARN

Implementing Hospital Management Information Systems brings significant advantages to healthcare facilities, such as data consistency and improved service quality. However, challenges remain during the transition from traditional paper-based systems to digital ones. Factors contributing to this challenge include system imperfections and cultural resistance within healthcare facilities.

Analyses across different hospitals reveal common themes. For instance, while some hospitals have reached a defined level of maturity in HMIS implementation, there's still a dependency on specific individuals, posing risks of inaccuracies. Additionally, improvements are needed in IT service channels, infrastructure, and disaster recovery procedures.

Furthermore, user satisfaction with HMIS applications varies, indicating areas for enhancement such as server capacity, network connectivity, and user training programs. Despite these challenges, the implementation of HMIS generally leads to improved pharmacy services, operational efficiency, and patient satisfaction.

In conclusion, adopting a Lean ServPerf approach can identify areas for improvement in service quality. For example, a study identified 15 service attributes requiring enhancement at Hospital X. These findings emphasize the ongoing need for optimization and adaptation in healthcare service delivery.

4. CONCLUSION

The advancement of information technology brings many positive changes in various fields, including in government institutions and hospitals. They can become more efficient and competitive by harnessing this technology. In Indonesia, hospitals use frameworks like ITIL to manage their information technology for the better. Although there are still challenges such as imperfect system integration and difficulties in managing patient data, hospitals continue to strive to improve their performance.

The implementation of Hospital Management Information Systems presents numerous advantages, notwithstanding initial implementation hurdles. Such as, transitioning from traditional paper-based systems to digital platforms poses inherent challenges, yet hospitals remain steadfast in their quest to elevate service quality. Leveraging frameworks like ITIL alongside other strategic approaches, hospitals aspire to not only enhance patient care but also optimize organizational efficiency, thereby reaffirming their commitment to continuous improvement.

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