



Literature Analysis on the Effectiveness of Referral Systems in Improving Access to Health Services

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ABSTRACT

In Indonesia, the healthcare referral system has undergone a major shift from a conventional model to an integrated electronic system. Seven scientific articles published between 2020 and 2024 are the subject of this study. The purpose of this study is to evaluate the effectiveness of the electronic referral system in improving access to health services. The research results show that the implementation of electronic referral systems such as SISROUTE in the JKN BPJS Kesehatan program has improved the referral process and reduced patient waiting times. However, challenges such as limited technology infrastructure, labor shortages, the complexity of system interfaces, and fear of change still exist. Information quality, ease of use, management support, and data integration greatly influence system performance. The electronic referral system is essential for reducing maternal and infant mortality rates in delivery and maternal care services. Therefore, several important recommendations for the development of a referral system in Indonesia are continuous evaluation, increased employee capacity, strengthening regulations, and integration of health information systems.

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INTRODUCTION

The World Health Organization (WHO) emphasizes that strengthening routine health information systems is essential to support primary health services so that equitable and high-quality access to health services can be achieved to achieve the ideal level of public health (Setiawati & Nurrizka, 2019). In Indonesia, the implementation of the National Health Insurance Program (JKN) has been a strategic step towards UHC since 2014. However, there are still many challenges that hinder programs from achieving the goal of improving access to health services, such as the disparity in workforce and health facilities between urban and rural areas (Azmi et al., 2024).

One of the important components of the health service system is the referral system, which serves to divert patients from the first level of health facilities to a higher level according to their medical needs. The system is built with the principles of efficiency and effectiveness to ensure that patients receive care that is appropriate to the complexity of their health condition (Heryana, 2020). However, there are still many challenges that hinder the implementation of the referral system in Indonesia. Studies show that even if the referral system is right, the completeness of referral letters is still a problem, and patients are still dissatisfied with referral services. In addition, electronic referral systems such as SISROUTE are hampered by poor technological infrastructure, inadequate human resources, and response delays (Pratiwi et al., 2023).

It is important to conduct a thorough examination of the existing literature because the role of referral systems is crucial in improving access to health services. The purpose of this literature review is to evaluate the performance of the referral system from various perspectives, both from the perspective of policy, implementation, and how it impacts access to public health services. By understanding the various findings

and problems that have been discussed in previous research, this paper is expected to help develop a more efficient method of improving the referral system and in accordance with the needs of the community (Anisya Febriyanti et al., 2023).

RESEARCH METHODS

The research method used in this writing is to investigate literature searches, research that is used to analyze based on the various literature selected, and to allow us to reach conclusions and even become new ideas. Research Search to collect multiple literary articles using online search sources through journal databases such as Google Scholar and PubMed. Some of the articles selected in this letter are articles that discuss the subject with the keywords: "referral system" and "health services." The scientific articles obtained were selected based on specific inclusion criteria, i.e. the selected article and the year of publication between 2020 and 2024. A discussion in Indonesian on the importance of the effectiveness of the referral system in improving access to health services was published. The author analyzed several articles and got results for up to seven articles. The articles obtained are considered based on open access journals that have guaranteed the International Standard Serial Number (ISSN) as a guarantee of the material or topic of the article discussed, the language used, the integrity of the article, and the quality of the article.

RESULT

Table 1. Literature Review Results

Name, Year, Title	Result
Susiloningtyas, L. (2020). Referral system in the maternal perinatal health service system in Indonesia.	This article explains that the referral system in maternal perinatal health services in Indonesia faces various significant challenges, including delays in referrals that lead to high maternal and infant mortality rates. These obstacles include unclear relationships with BPJS Kesehatan, transportation problems, and lack of understanding and communication between health facilities. The government has issued regulations, such as Permenkes No. 3/2020, to strengthen the referral system based on competence. However, implementation in the field is still not optimal, especially in terms of coordination and suitability of procedures at various levels of service.
Saing, S. N. M. D., Rosyidah, R., & Rulyandari, R. (2024). The Effectiveness of the Implementation of the Electronic Reference System: Literature Review.	The results of the journal show that the implementation of the Integrated Reference Information System (SISRUTE) in Indonesia has been going well, but still faces challenges such as delayed response and lack of trained human resources. While these systems have the potential to improve the efficiency and quality of healthcare, infrastructure and staff training issues still need to be addressed. Continuous evaluation and strong policy support are essential to ensure the success of SISRUTE.
Indrianingrum, I., & Puspitasari, I. (2021). Evaluation of the Referral System Process of the Health Social Security Administration Agency (Bpjs) at the First Level Health Facility (FKTP) of Jepara Regency.	The results of this study evaluated the referral system of the Health Social Security Administration Agency (BPJS) at the First Level Health Facility (FKTP) of Jepara Regency. The referral system is implemented according to medical indications, where referrals are made based on the capacity of the doctor and not at the patient's request. The referral procedure follows the predetermined flow, and if the patient's diagnosis exceeds the competence of the FKTP, the patient will

	be referred to an advanced referral health facility (FKTRL). However, the study also found some obstacles, such as limitations in choosing a hospital and technical problems with the online system used for referrals. Although the referral process has been effective, improvements are still needed in the technical aspects and public understanding of referral procedures to improve the efficiency and quality of health services.
Ramadhan, H. A., Arso, S. P., & Nandini, N. (2021). Analysis of factors related to user satisfaction on the online referral system in BPJS Kesehatan participants in Semarang City.	The results of this study analyze the factors that affect user satisfaction with the BPJS Kesehatan online referral system in Semarang City. Of the 100 respondents surveyed, only 54% were satisfied with the system, which was caused by the administrative efficiency and effectiveness of the referral system which was still less than optimal in reducing queues. The study found a significant relationship between performance expectancy, effort expectancy, facilitating condition, and information quality with user satisfaction, with a p value of < 0.05. The researcher recommends BPJS Kesehatan to establish satisfaction indicators, integrate an online referral system with registration at health facilities, and improve the socialization and quality of information related to the online referral system in order to better meet the needs of participants.
Nurul, S. N. K., Anggraini, A. N., & Surya, N. T. (2024). Analysis of the Implementation of the BPJS Kesehatan Online Referral System at the Nusukan Health Center in Surakarta.	The results of this study evaluated the satisfaction of BPJS Kesehatan participants with the online referral system in Semarang City, involving 100 respondents. Only 54% of respondents were satisfied, due to administrative efficiency and system effectiveness that has not been optimal in reducing queues. The study found a significant relationship between performance expectancy, effort expectancy, facilitating condition, and information quality with user satisfaction, with a p-value of < 0.05. Therefore, it is recommended that BPJS Kesehatan set clear satisfaction indicators, integrate the online referral system with registration at health facilities, and improve the socialization and quality of information related to the online referral system.
Aulia, C. M., Alayda, N. F., Ritonga, E. R., & Gurning, F. P. (2024). Analysis of the Implementation of the Childbirth Referral System for National Health Insurance (JKN) Participants at the Simalingkar Health Center Upt.	The results of this study evaluated the implementation of the childbirth referral system for National Health Insurance (JKN) participants at the Simalingkar Health Center UPT. The findings show that the availability of human resources (HR) and health workers, infrastructure, as well as patient registration and handling mechanisms have been running well. However, the Simalingkar Health Center does not have maternity facilities, which is a barrier in providing optimal services. Although antenatal services are adequate with modern equipment such as ultrasound (ultrasound), the lack

	<p>of facilities for childbirth remains an important issue. The percentage of childbirth referrals at the Simalingkar Health Center ranges from 15-20% for normal pregnant women and around 15% for pregnant women with complications, which indicates the need for proper and fast referrals to more complete health facilities. This study emphasizes the importance of an effective referral system to reduce maternal and infant mortality rates and improve the quality of health services. With good management, it is hoped that the referral system can contribute significantly to the safety of mothers and babies during pregnancy and childbirth.</p>
<p>Susanto, P. B. A. C., Kusumawati, H. I., & Aulawi, K. (2023). Evaluation of the Usability of the Integrated Referral System (Sisrute) in the Emergency Room of the Special Regional Hospital of Yogyakarta.</p>	<p>The results of this study analyzed the usability of the integrated referral system (Sisrute) in the Emergency Installation (IGD) of hospitals in the Special Region of Yogyakarta. With a quantitative approach, this study involved 141 health workers as respondents. The average score of the System Usability Scale (SUS) for Sisrute is 52.3, which indicates that the acceptance rate of this application is in the marginal category, so it still needs improvement. While more than half of respondents are willing to use Sisrute again, many find the app difficult and confusing, and it takes time to get used to. The study highlights that although Sisrute has been implemented to simplify the referral process between health facilities, there are still various obstacles in its use, such as lack of consistency and difficulties in navigation. Therefore, it is crucial for Sisrute developers to update the app according to the user's needs, including providing further training and developing more intuitive features. In this way, it is hoped that Sisrute can function more optimally in supporting the patient referral process and improving the efficiency of health services.</p>

DISCUSSION

Based on the results of the literature study that has been conducted, several important aspects related to the referral system in health services in Indonesia can be identified. This discussion will comprehensively analyze the main findings from the literature reviewed, including the development of electronic referral systems, their implementation in various health facilities, factors influencing the effectiveness of the system, and challenges and recommendations for future development.

Development of Referral System in Indonesia

The health referral system in Indonesia has undergone a significant transformation from a conventional model to an integrated electronic system. According to Susiloningtyas (2020), the referral system in maternal perinatal health services in Indonesia initially ran with a conventional mechanism that often experienced obstacles in coordination between health facilities¹. The development of this referral system is in line with the implementation of the National Health Insurance (JKN) program which encourages reforms in the tiered health service mechanism.

The transformation towards an electronic referral system has begun to be intensively implemented as an effort to improve the efficiency and effectiveness of health services. Saing et al. (2024) stated that electronic referral systems were developed to overcome various obstacles to conventional referral systems, including administrative and coordination problems between health facilities that are often bottlenecks in the patient referral process. This development is also driven by the need for an integrated database that can

facilitate tracking and monitoring of referred patients.

The implementation of the electronic referral system has become an integral part of the implementation of JKN by BPJS Kesehatan, with the support of regulations and information technology infrastructure that continues to be developed in various regions. This transformation aims not only to improve administrative efficiency but also to ensure the continuity of healthcare services from first-level healthcare facilities to follow-ups.

Implementation of Electronic Referral System in Health Facilities

The implementation of electronic referral systems shows varying degrees of success in various health facilities. Nurul et al. (2024) in their research at the Nusukan Health Center in Surakarta found that the implementation of the BPJS Kesehatan online referral system has increased the speed of the referral process and significantly reduced patient waiting time. This system allows real-time information exchange between health centers and referral hospitals, so that patient handling preparations can be carried out early.

On the other hand, Indrianingrum and Puspitasari (2021) in an evaluation of the BPJS Kesehatan referral system process at FKTP Jepara Regency found that there are still gaps in implementation, especially related to the readiness of human resources and information technology infrastructure. Some health facilities in the region still face obstacles in operating the electronic referral system optimally, caused by the limited ability of health workers to operate technology and the limitations of a stable internet network.

At the hospital level, Susanto et al. (2023) evaluated the usability of the Integrated Referral System (Sisrute) at the emergency room of the Special Regional Hospital of Yogyakarta, revealing that although this system has provided benefits in improving the efficiency of the referral process, there are still aspects of usability that need to be improved to maximize the system's function. The evaluation identified a need for interface simplification and increased system responsiveness, especially when handling emergency cases.

Factors Affecting the Effectiveness of the Referral System

The effectiveness of an electronic referral system is influenced by various interrelated factors. Ramadhan et al. (2021) identified several factors related to user satisfaction with the online referral system in BPJS Kesehatan participants in Semarang City. These factors include the quality of information provided by the system, ease of use, technical support, and speed of response from referral health facilities.

A study conducted by Saing et al. (2024) underlines that the effectiveness of the implementation of electronic referral systems is highly dependent on data integration between health facilities and compliance with standard operational procedures. When data integration goes well, the continuity of patient information can be maintained, thereby improving the quality of care and reducing the risk of duplication of medical procedures.

Policy support and commitment of health facility management are also determining factors for the successful implementation of the electronic referral system. Indrianingrum and Puspitasari (2021) found that health facilities with strong management support tend to be more successful in implementing electronic referral systems. This support includes the provision of adequate infrastructure, ongoing staff training, and regular monitoring and evaluation of system performance.

Referral System in Maternal and Maternal Health Services

Maternal and childbirth health services are critical areas in the referral system that require special attention. Susiloningtyas (2020) emphasized the importance of an effective referral system in maternal and perinatal health services to reduce maternal and infant mortality rates¹. A well-functioning referral system allows for early detection of pregnancy and childbirth complications, so that treatment can be carried out in a timely manner.

Aulia et al. (2024) in their analysis of the implementation of the delivery referral system for JKN participants found that there were variations in compliance with the tiered referral flow in childbirth cases. Some of the factors that affect compliance include the level of urgency of cases, the availability of facilities at FKTP, and patient preferences. In the case of childbirth with complications, the electronic referral system has been proven to be able to speed up the process of transferring patients to facilities that have appropriate handling capabilities.

The integration of electronic referral systems with maternal and child health programs can improve the quality of maternal and neonatal services. Susiloningtyas (2020) suggested strengthening coordination between village midwives, health centers, and hospitals through an integrated referral system to ensure continuity of antenatal, childbirth, and postnatal services¹. This strengthening is crucial, especially to overcome the gap in access to maternal health services in remote areas.

Challenges and Obstacles in the Implementation of the Referral System

Although electronic referral systems show the potential to improve the efficiency of health services, their implementation still faces various challenges. Based on a study by Indrianingrum and Puspitasari

(2021), the main challenges in the implementation of the BPJS Kesehatan referral system at FKTP include the limitations of information technology infrastructure, lack of trained personnel, and resistance to changes from conventional to electronic systems.

Susanto et al. (2023) identified that the complexity of the Integrated Referral System (Sisrute) interface is a barrier for some users, especially in emergency departments that require a quick response. A less intuitive system design can slow down the data input process, reducing the efficiency that should be the main advantage of electronic reference systems.

Another challenge identified is the uneven distribution of health facilities and specialists in different regions. Aulia et al. (2024) found that the limitations of facilities and specialist personnel in some areas led to a build-up of referrals to certain health facilities, thereby reducing the effectiveness of the overall referral system. This imbalance becomes more pronounced in cases of childbirth with complications that require specialist handling.

Evaluation and Development of Integrated Referral Systems

Continuous evaluation is an important component in the development of an effective referral system. Susanto et al. (2023) conducted a usability evaluation of the Integrated Referral System (Sisrute) using a multi-dimensional approach that includes aspects of effectiveness, efficiency, and user satisfaction. The results of the evaluation show the need for improvements in the aspects of user interface and system responsiveness to improve the user experience.

Saing et al. (2024) emphasized the importance of a comprehensive evaluation of the effectiveness of electronic referral systems that not only focus on technical aspects, but also consider their impact on patient clinical outcomes. This holistic evaluation approach will provide a more complete picture of the contribution of electronic referral systems to improving the overall quality of health services.

The development of an integrated referral system in the future needs to consider interoperability with various other health information systems. Nurul et al. (2024) suggest the integration of an online referral system with electronic medical records and hospital management information systems to ensure the continuity of patient information. This integration will minimize duplication of data and improve the accuracy of clinical information available to healthcare providers.

Implications and Recommendations for Referral System Improvements

Based on the literature analysis carried out, there are several implications and recommendations for improving the referral system in Indonesia. First, it is necessary to strengthen information technology infrastructure, especially in areas with limited internet networks. Saing et al. (2024) emphasized the importance of adequate infrastructure support to ensure the smooth implementation of electronic reference systems.

Second, increasing the capacity of human resources through continuous training and technical assistance. Indrianingrum and Puspitasari (2021) recommend a comprehensive training program for health workers involved in the operationalization of electronic referral systems. This training must include the technical aspects of using the system as well as an understanding of the tiered referral flow.

Third, simplifying the process and interface of the electronic reference system to improve usability. Susanto et al. (2023) suggest redesigning the Sisrute interface by considering the principles of user-centered design. This simplification is expected to reduce the cognitive burden on users and speed up the data input process, especially in emergency situations.

Fourth, strengthening regulations and standardization of the national referral system. Ramadhan et al. (2021) emphasized the importance of uniformity of standards and operational procedures of referral systems to ensure interoperability between health facilities. This standardization will facilitate data integration and information exchange between various levels of health facilities.

Fifth, improving the monitoring mechanism and evaluating the performance of the referral system periodically. Aulia et al. (2024) recommend a routine audit of referral flow compliance and service quality at referral health facilities. This periodic evaluation will allow for early identification of problems and adjustments to the required implementation strategies.

CONCLUSION

The health service referral system in Indonesia has been significantly transformed towards an integrated electronic system, especially through the Integrated Referral Information System (SISRUTE) in the JKN program by BPJS Kesehatan. This transformation aims to improve efficiency, effectiveness, and service quality through real-time information exchange. The implementation of electronic referral systems has been proven to speed up the referral process and reduce patient waiting times.

The effectiveness of electronic reference systems is influenced by the availability of information technology infrastructure, the quality of human resources, management support, and data integration. Challenges faced include infrastructure limitations, complex system interfaces, uneven distribution of

healthcare facilities, and resistance to change. Information quality, ease of use, and system responsiveness also determine user satisfaction.

Electronic referral systems play an important role in maternal and childbirth health services, especially in reducing maternal and infant mortality rates through early detection of complications. To improve the effectiveness of the referral system in the future, continuous evaluation, development of interoperability with other health information systems, increased socialization, and quality of information related to online referral systems are needed.

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