E-ISSN: xxx-xxx

**JPKBK: Jurnal Pengelolaan Kesehatan Berkelanjutan berbasis Kearifan Lokal**

https://ojs.ucp.ac.id/index.php/JPKBK

# Evaluation of Electronic Medical Records Management in Healthcare Facilities

**Andi Aan B. Syaputra[1*], Liskha Ayuningrum[1], M Awaluddin[1], Feby Triadi[1], Muhammad Asdar[1]**

**Universitas Cahaya Prima[1]**

*Correspondence Author: andiaanbsyapura6119@gmail.com

ARTICLEINFO

*Article History*

***Received***: 20-11-2025

***Accepted***: 13-12-2025

**Keywords:**

Integrated, Information System, Health Data Reporting, Effectiveness

**ABSTRACT**

This study aims to analyze the effectiveness of implementing Integrated Information Systems, such as the Community Health Center Management Information System (SIMPUS) and the Health Information System (SIK), in improving public health data reporting in healthcare facilities, particularly community health centers. The method used was a literature review of various studies published between 2020 and 2025. The results of the review indicate that implementing health information systems has been proven to accelerate service processes, improve data accuracy, and facilitate reporting to relevant agencies.

However, implementation effectiveness is still influenced by human resources, technological infrastructure, internet network stability, and support from regional management and policies. Frequent obstacles include lack of operator training, technical system disruptions, and differences in readiness between regions. Therefore, increasing human resource capacity, strengthening infrastructure, and continuous system integration are key to achieving effective, accurate, and sustainable public health data reporting.



## INTRODUCTION

In today's information age, information is an object that must be quickly distributed and received by anyone who needs it. In addition, quality information (data that *valid* and *up-to-date)* is a key factor in effective decision-making that meets existing needs. The availability of health information is essential for implementing effective and efficient health efforts (Suary & Yunengsih, 2024).

Currently, the world of technology and information has experienced very rapid development, so to keep up with the progress and development of technology and information, we are required to follow existing developments (Rewah et al., 2020).

Health services are efforts in planning, implementing, evaluating, recording, and reporting, all of which are compiled into a system carried out by community health centers (Umar & Maksum, 2022). Patient satisfaction depends on the quality of services provided (Wiwiek, 2021). To improve the quality of health services, the government uses information

technology (IT), based on the Decree of the Minister of Health of the Republic of Indonesia Number 128/MENKES/SK/II/2004 as stated in the article (Mawardi et al., 2020).

An information system is a part of an organization or company that functions to produce and provide information that can be accessed by one or more users. This system works in an integrated manner. to collect, process, store, and disseminate information (Awal, 2023). A Health Information System (HIS) is a collection of integrated systems designed to manage data, information, indicators, procedures, technology, devices, and human resources. A HIS supports decision-making and action to achieve health goals (Arwananing Tyas & Nata Negara, 2022).

Information systems act as the main tool in managing. Data is transformed into useful information for decision-makers(Widiyanto et al., 2023). SIMPUS is a crucial structure that supports the decision-making process in Community Health Center management to achieve its service objectives (Ministry of Health of the Republic of Indonesia, 2004). By utilizing data from the Integrated Health Center Recording and Reporting System (SP2TP), SIMPUS is expected to improve the quality of Community Health Center management and support better service delivery (Handayani, 2020).

Another drawback of SIMPUS is data collection issues. Some districts/cities have yet to submit their Community Health Center data reports, the data entry format does not comply with provincial standards, data reports are often late, the data coverage is too broad, and the online SIMPUS system is slow. However, optimal implementation of SIMPUS can reduce the workload of staff and improve the quality of patient care. With the resulting efficiencies in time, effort, and costs, SIMPUS has the potential to increase the satisfaction of both service users and healthcare organizations (Suary & Yunengsih, 2024)).

Although SIMPUS was designed as a solution to address health management issues, its implementation in West Java still faces various technical and operational challenges. Issues such as late reporting, data inaccuracies, limited facilities and infrastructure, and a lack of technological understanding among staff have prevented the system from functioning optimally. If these challenges are not addressed promptly, they could degrade the quality of services at community health centers (*Puskesmas*), hamper data-driven decision-making, and ultimately lower public satisfaction with healthcare services.

Therefore, a literature review is essential to assess the effectiveness of implementing an Integrated Information System in reporting public health data. Through a literature review approach, this research is expected to identify the extent to which the system improves the efficiency, accuracy, and quality of health data, while also identifying factors influencing its success or failure in field implementation.

## METHOD

This study employed a literature review approach to analyze the effectiveness of integrated health information systems, specifically SIMPUS and SIK, in public health data reporting. The scope of the review focused on studies conducted in Indonesia, particularly in community health centers (*Puskesmas*). Integrated health information systems were operationally defined as digital systems used for collecting, processing, storing, and reporting health data, while effectiveness referred to improvements in service efficiency, data accuracy, reporting timeliness, and decision-making support.

Articles were retrieved from Google Scholar and limited to publications from 2020 to

2025. Inclusion criteria consisted of peer-reviewed articles discussing the implementation or evaluation of SIMPUS or SIK in healthcare facilities, whereas articles published before 2020, unrelated to health information systems, opinion-based papers, and studies with incomplete full texts were excluded. The literature screening process involved title and abstract review followed by full-text assessment. Data were analyzed using a qualitative descriptive approach by synthesizing key findings related to system effectiveness, benefits, challenges, and influencing factors.

## RESULT AND DISCUSSION

**Table 1. Literature Review Results**

| No. | Title | Author (Year) | Method | Key Results |
|---|---|---|---|---|
| 1 | Implementation of the Community Health Center Management Information System (SIMPUS) in Improving Health Services at Beji Community Health Center, Tulungagung | Cahyanti et al. (2025) | Qualitative descriptive | SIMPUS improves data digitization, service speed, and reduces recording errors. However, technical constraints such as network instability remain a major barrier. |
| 2 | Implementation of the Community Health Center Health Information System in Various Regions | Tyas et al. (2022) | Literature review | Implementation is generally suboptimal, marked by data inconsistency, irregular system maintenance, and inefficiency, although transparency in reporting has improved. |
| 3 | Implementation of Health Information Systems in Community Health Centers in Indonesia | Hanafi et al. (2025) | Literature review | Health information systems enhance efficiency and service quality, but are constrained by limited human resources, inadequate infrastructure, and low technological literacy. |
| 4 | Overview of SIMPUS Implementation at Lawang Gintung Community Health Center, Bogor | Suary et al. (2024) | Qualitative descriptive | SIMPUS increases administrative efficiency; however, unstable internet connectivity, limited training, and incomplete system features hinder optimal utilization. |
| 5 | Evaluation of the Utilization of Health Information Systems in Improving Program Accuracy and Planning | Putri (2025) | Systematic literature review | Health information systems support data-driven decision-making and program planning accuracy, but challenges remain in system integration, infrastructure, and human resource capacity. |

Based on the results of a review of various relevant studies, the implementation of Integrated Information Systems or health information systems such as SIMPUS and SIK has an important role in increasing the effectiveness of reporting public health data in various health service facilities, especially at the Community Health Center level.

In general, the research results show that this information system is capable ofspeed up the service process, increase data accuracy, And facilitate reporting to relevant agenciesHowever, the effectiveness of the system still depends on several key factors, including the quality of human resources, the availability of infrastructure, as well as network stability and management support.

**Discussion**

**Effectiveness of Integrated Information Systems in Public Health Data Reporting**

Based on a literature review, the implementation of Integrated Information Systems (SIMPUS, SIK) has been shown to positively contribute to public health data reporting, particularly at the community health center (*Puskesmas*) level. Several studies have found that these information systems can accelerate administrative service and reporting processes, reduce recording errors, and facilitate data delivery to health offices or relevant policymakers (Tyas & Negara, 2022).

However, actual effectiveness in the field is conditional, depending on supporting factors such as human resource quality, infrastructure availability (hardware and software), network connection stability, and managerial commitment to providing training and technical support. The reviewed studies consistently report obstacles in infrastructure and competency aspects that result in reporting delays, data inconsistencies, and system features that do not yet cover all service units (Suary & Yunengsih, 2024). Furthermore, information system effectiveness is also closely related to aspects of sustainability and technological adaptability at the regional level. Based on research(Hanafi et al., 2025), the success of HIS implementation in Indonesia still varies due to differences in infrastructure readiness between regions.

In addition to improving reporting efficiency and accuracy, the Integrated Information System also plays a crucial role in supporting evidence-based decision-making in the health sector. Through the digitization of public health data, community health centers (Puskesmas) and health offices can monitor disease trends, immunization coverage, and the need for drugs and medical devices in real time. This helps develop health programs that are more targeted and responsive to field dynamics. Research by (Putri, 2025) shows that the implementation of SIK and SIMRS encourages increased program planning accuracy and decision-making efficiency. However, this effectiveness is only achieved if the system is managed consistently and supported by national policies that prioritize cross-sector integration. This system can accelerate service processes, improve data accuracy, and simplify reporting to relevant agencies. Research by (Cahyanti et al., 2025) shows that SIMPUS helps digitize health information, accelerate services, and reduce errors in patient data recording. Furthermore, this system also facilitates coordination between units such as pharmacies, laboratories, and BPJS Kesehatan through horizontal integration, as well as reporting to health offices through vertical integration.

In areas with stable internet connections and strong local government support, health information systems have proven effective and provide tangible benefits to improving

service quality. Conversely, in remote areas, limited facilities and operator competency remain major obstacles. Therefore, strategies for increasing human resource capacity, technology funding, and systems integration policies from the central government to the regions are needed to ensure more effective, accurate, and sustainable public health data reporting.

**The main benefits of a health information system**

A review of various studies shows that Health Information Systems (HIS), including SIMPUS (Community Health Center Management Information System), play a crucial role in improving the effectiveness of data management and the quality of healthcare services in various healthcare facilities. These systems offer significant benefits in accelerating service processes, improving data accuracy, and simplifying reporting to healthcare institutions.

Research (Putri, 2025) confirms that health information systems play a major role in supporting data-based decision making (*data-driven decision making*) in healthcare facilities. Through an integrated system, public health data can be processed in real time and used as a basis for program planning and health resource allocation. However, this study also found that low operator competency and network limitations remain barriers to achieving the full effectiveness of the information system.

In addition, (Tyas & Negara, 2022) through*literature review*concluded that the implementation of HIS in various regions in Indonesia has contributed to increased effectiveness, efficiency, and transparency in health data management. However, these benefits have not been optimal due to persistent challenges such as data inconsistency, lack of user training, and irregular system maintenance. This suggests that improving human resource capacity and infrastructure support are crucial for maximizing the benefits of information systems.

Another point was also made by (Amin et al., 2024). An integrated information system makes the service process faster and more structured. Patients don't have to wait long for registration or medication pick up. Furthermore, doctors and medical personnel can easily access patients' medical histories, allowing them to provide more accurate diagnoses and treatments.

**Factors Affecting the Effectiveness of Health Information Systems**

Based on the results of various studies, the effectiveness of health information systems such as SIMPUS and SIK is greatly influenced by several main factors, namely the competence of human resources (HR), the availability of technological infrastructure, the stability of the internet network, and management support in system implementation. The quality and capability of HR are very important aspects, because the success of system implementation depends not only on the software, but also on the ability of officers to operate and utilize the system optimally. Research (Cahyanti et al., 2025) shows that although SIMPUS helps speed up services and improve administrative efficiency, limited understanding of technology among officers remains a major obstacle in system implementation in Community Health Centers.

One crucial factor affecting the effectiveness of health information systems is the limited competence of human resources (HR) in information technology. Many healthcare workers lack adequate skills in operating SIMPUS, while the training programs provided are often general and not conducted continuously. However, managing information systems

requires technical expertise and a sound understanding of health data management. This situation has resulted in suboptimal implementation of SIMPUS, as implementing personnel have not been fully able to utilize the system's features effectively. As a result, data recording and reporting processes at community health centers continue to face obstacles, thus the system's primary goal of supporting data-driven decision-making has not been fully achieved (Faris Muhammad, Lufhfia Dara Janitra, 2025).

In some cases, SIMPUS is only used to a limited extent or even not used at all due to frequent technical glitches. However, in the context of digital-based public services, a stable infrastructure is a key prerequisite for real-time and accurate recording, referral, and reporting (Adha et al., 2023).

## ACKNOWLEDGMENT

The authors would like to express their gratitude to all supervisors, colleagues, and institutions who provided support, guidance, and valuable contributions that made this study possible.

## CONCLUSION

Based on a literature review, the implementation of Integrated Information Systems such as SIMPUS and SIK has been shown to increase the effectiveness of public health data reporting, particularly at the community health center (Puskesmas) level. These systems help expedite services, improve data accuracy, and simplify reporting to relevant agencies. However, their effectiveness still depends on human resource readiness, infrastructure availability, network stability, and management support. Common challenges identified include limited operator training, system disruptions, and differences in readiness across regions.

## REFERENCES

Adha, F. R., Sahria, Y., Febriani, N. I., Nurul Fauziah, R., Sa'adah, W., & Hidayati, A. (2023). Analisis Literatur Sistem Informasi Kesehatan (SIK): Tren, Tantangan, dan Manfaat dalam Peningkatan Pelayanan Kesehatan di Indonesia. *Prosiding Seminar Nasional UNIMUS*, *6*, 928–942.

Amin, M., Irawati, N., Siagian, Y., Tinggi, S., Informatika, M., Tinggi, S., & Informatika, M. (2024). Peningkatan Efisiensi Layanan Puskesmas Melalui Penerapan Sistem Informasi Terpadu Jurnal Pengabdian Kepada Masyarakat Mitra Kreasi Cendekia. *Jurnal Pengabdian Kepada Masyarakat Mitra Kreasi Cendekia*, *2*(1), 84–92. https://ejurnal.mitrakreasicendekia.com/index.php/mkc

Arwananing Tyas, Z., & Nata Negara, W. (2022). Literature Review: Implementasi Sistem Informasi Kesehatan Puskesmas di Berbagai Daerah. *Journal of Technopreneurship and Information System (JTIS)*, *5*(1), 21–24. https://doi.org/10.36085/jtis.v5i1.3444

Awal, H. (2023). Implementasi Sistem Informasi Pelayanan Publik Pada Puskesmas Kambang Berbasis Web. *Jurnal Sains Informatika Terapan*, *2*(1), 31–37. https://doi.org/10.62357/jsit.v2i1.185

Cahyanti, S., Zahrani, T. P., Amalya, B. R., Cahyono, A. S., & Hariyanto, S. (2025). Penerapan Sistem Informasi Manajemen Puskesmas (Simpus) Dalam Meningkatkan Pelayanan

Kesehatan Di Upt Puskesmas Beji Tulungagung. *Journal of Governance and Public Administration*, *2*(2), 323–330. https://doi.org/10.70248/jogapa.v2i2.1668

Faris Muhammad, Lufhfia Dara Janitra, R. A. D. (2025). Peran Sistem Informasi Manajemen Puskesmas dalam Mendukung Pelayanan Dasar Sesuai Standar Pelayanan Minimal. *11*(3), 1412–1419. https://doi.org/10.35870/jemsi.v11i3.4103

Hanafi, S. T., Panjaitan, W. U., Ramadhan, A. R., & Purba, S. H. (2025). Penerapan Sistem Informasi Kesehatan di Puskesmas di Indonesia. *Sagita Academia Journal*, *3*(1), 19–23. https://doi.org/10.61579/sagita.v3i1.333

Handayani, N. (2020). Penerapan Sistem Informasi Manajemen Puskesmas (SIMPUS) dalam Meningkatkan Pelayanan di Puskesmas Sawangan, DEPOK. *Semnas*, *511*, 161–170.

Mawardi, M. I., Rohman, H., Mardiyoko, I., Priastiti, N., Bhakti, P. K., & Indonesia, S. (2020). Evaluasi Pengguna terhadap Penerapan Simpus dengan Metode Taks Technology Fit di Puskesmas Imogiri I. *JCOMENT (Journal Of Community Empowerment)*. *1*(1), 36–41. https://doi.org/10.55314/jcoment.v1i2.305

Putri, N. A. (2025). *Evaluation of the Use of Health Information Systems in Improving the Accuracy and Planning of Programs in Healthcare Facilities in Indonesia*. *June*. https://www.researchgate.net/publication/392518462

Rewah, D., Sambiran, S., & Pangemanan, F. (2020). Efektivitas Penerapan Sistem Informasi Manajemen Puskesmas (Simpus) Di Kota Manado. *Jurnal Eksekutif*, *2*(5), 2–5.

Suary, S. I., & Yunengsih, Y. (2024). Gambaran Penerapan Sistem Informasi Manajemen Puskesmas (SIMPUS) Di UPTD Puskesmas Lawang Gintung Kota Bogor. *Jurnal Media Informatika [Jumin]* *8*(3), 136–147. https://ejournal.undip.ac.id/index.php/jmki/article/view/33201/18511

Tyas, Z. A., & Negara, W. N. (2022). Literature Review: Implementasi Sistem Informasi Kesehatan Puskesmas di Berbagai Daerah. *Journal of Technopreneurship and Information System*, *5*(1), 21-24. https://doi.org/10.36085/jtis.v5i1.3444

Umar, M. F., & Maksum, T. S. (2022). Efektivitas Penerapan Sistem Informasi Kesehatan Berdasarkan Model Delone dan Mclean. *Afiasi: Jurnal Kesehatan Masyarakat*. *8*(3), 512–519. https://doi.org/10.31943/afiasi.v8i3.302

Widiyanto, W. W., Igiany, P. D., & Sari, A. A. (2023). Program Sosialisasi dan Pelatihan Penggunaan Sistem Informasi Posyandu: SIMBAT (Sistem InforMasi BalitA Sehat Terpadu). *Jurnal Abdi Mas Adzkia*, *4*(1), 129. https://doi.org/10.30829/adzkia.v4i1.18253

Wiwiek Indriany Sary S, Bur, N., & Septiyanti. (2021). Hubungan Kualitas Pelayanan dengan Kepuasan Pasien Rawat Inap Peserta BPJS. *Window of Public Health Journal*, *April*, 445–452. https://doi.org/10.33096/woph.v1i5.142