The Use of Electronic Medical Records to Support Service Efficiency at the Pulmonary Polyclinic of Bhayangkara Level II Sartika Asih Hospital, Bandung

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Abstract. The aim of this study is to evaluate the implementation of Minimum Service Standards at Bhayangkara Level II Sartika Asih Hospital in Bandung, with a specific focus on outpatient waiting times and the contributing factors to service delays. A quantitative research method with a descriptive approach was employed. Data were collected through observations and interviews with four key informants. The findings reveal that since January 2025, the hospital has set a standard outpatient waiting time of less than 60 minutes. However, observational data from 70 patients indicate that only 47% were served within this standard, while 33% experienced waiting times of 60 minutes or more. The main factors contributing to prolonged waiting times include the registration process, issues with the Electronic Medical Record (EMR) system, and the occurrence of duplicate medical records.

Keywords: *Electronic Medical Records, Minimum Service Standards Outpatient Service Waiting Time, and Factors Causing Delays in Waiting Times.*

Introduction

Law Number 17 of 2023 Article (3) on Health states that "Health services are all forms of activities provided directly to individuals or communities to maintain and improve public health, including promotive, preventive, curative, rehabilitative, and palliative services" (President of the Republic of Indonesia, 2023). Furthermore, as stipulated in the Ministry of Health Regulation (Permenkes) Number 6 of 2024, “The Minimum Service Standards (SPM) in the health sector refer to the guidelines for the types and quality of essential health services that constitute a mandatory government function and are the right of every citizen to receive at a minimum level” (Republic of Indonesia, 2023).

A hospital is a healthcare facility that provides comprehensive services to individuals, including emergency care, inpatient care, and outpatient services (Ministry of Health, 2019). Hospital services are classified as socio-economic health services, meaning that although they serve a social function, they are managed professionally to generate financial returns by applying economic principles (Apriliyani, 2021a).

With the growing population in Indonesia each year, public demand for healthcare services continues to rise. This necessitates hospitals to improve the quality of their services, one of which is by enhancing their hospital information systems. The rapid development of information technology has had a significant impact on these systems, particularly through the implementation of Electronic Medical Records (EMR). EMRs contain information that is created, transmitted, stored, or retrieved in digital form and can be accessed as needed for specific purposes (Kesuma, 2023).

According to a previous study conducted by the Indonesian Hospital Association (PERSI) in March 2022, only about 50% of the 3,000 hospitals in Indonesia had implemented an electronic system for storing medical records, and only 16% of those had effectively adopted Electronic Medical Record systems. The survey results indicate that many hospitals in Indonesia still need to transition from manual to electronic systems urgently. This transition is crucial to enable hospitals to use and implement electronic systems effectively (Vitaloka et al., 2024).

As a healthcare facility, Bhayangkara Level II Sartika Asih Hospital in Bandung uses medical records to document each interaction between healthcare providers and patients on a monthly basis. The medical records unit is responsible for ensuring the completeness of records in both inpatient and outpatient services. The hospital has adopted and utilized an application-based Electronic Medical Record system to support effective service delivery. However, despite the significant benefits, the implementation of EMR has not always been smooth—there are numerous technical and policy-related challenges that must be addressed.

Therefore, research on the analysis of EMR usage is crucial to improving the quality of patient services in hospitals. By using an application-based Electronic Medical Record system, hospitals can enhance operational efficiency and deliver better care to patients. This study aims to explore the role and benefits of the Electronic Medical Record system in supporting service efficiency at the pulmonary polyclinic of Bhayangkara Level II Sartika Asih Hospital in Bandung.

Methodology

This research employs a quantitative method, utilizing available data presented in numerical form collected from the field (Nasuttion, 2023). The author uses a descriptive approach in this study. The research was conducted at Bhayangkara Level II Sartika Asih Hospital in Bandung. The population consists of 223 outpatient pulmonary clinic patients, recorded between April 21 and May 1. A sample of 70 patients was selected using the Slovin formula.

The data were collected through observations and interviews at the pulmonary clinic during the internship period from March 3 to May 3, 2025. The goal was to assess the Minimum Service Standards (SPM) at Bhayangkara Level II Sartika Asih Hospital, outpatient waiting times, and factors that may influence the use of the Electronic Medical Record (EMR) system. Interviews were conducted with four informants: three outpatient registration service officers and one administrative nurse from the pulmonary clinic.

Table 1. Operational Definitions

Variabel	How to Measure	Measuring instrument	Measurement results	Scale
SPM	Observation	Interview Guidelines	available	-
Outpatient waiting time	Observation	RME Buku	According to the standard if the outpatient waiting time is < 60 minutes Not according to the standard if the outpatient waiting time is ≥ 60 minutes	Nominal
Factors causing long waiting times for outpatient services	Observation and interviews	Interview Guidelines	-	-

Results and Discussion

1. Minimum Service Standards for Outpatient Service Waiting Time

Based on the results of observations and interviews with sources from Bhayangkara Hospital Class II Sartika Asih Bandung, the hospital has set the waiting time for outpatient services in the Minimum Service Standards (SPM) of Bhayangkara Hospital Class II Sartika Asih Bandung. Based on the results of the interviews that have been conducted, the SPM of Bhayangkara Hospital Class II Sartika Asih Bandung has been in effect since January 2025. This Minimum Service Standard (SPM) contains the definition, objectives, policies, governance, and procedures that can be used as a guideline for officers in providing services to patients. The waiting time for outpatient services listed in the SPM of Bhayangkara Hospital Class II Sartika Asih Bandung is <60 minutes. The following is data on the length of outpatient waiting time compared to the standard outpatient waiting time that has been set in the SPM of Bhayangkara Hospital Class II Sartika Asih Bandung.

2. Outpatient Service Waiting Time

Based on the results of observations using an electronic medical record system, the following is data on the length of outpatient waiting time compared to the outpatient waiting time standards set in the SPM of Bhayangkara Hospital Class II Sartika Asih Bandung.

Tabel 2. Tabel Lama Waktu Tunggu Rawat Jalan

Waiting Time	Frequency	Percentage
< 60 minute	47	67%
≥ 60 minute	23	33%
Total	**70**	**100%**

The study was conducted from the registration administration process to calling the patient to the doctor's service room, obtained as many as 47 (67%) patients who had a waiting time of <60 minutes which indicated a waiting time that was in accordance with the standard, namely less than the minimum service standard. Obtained as many as 23 (33%) patients had a waiting time of ≥ 60 minutes. The table above shows an increase in the efficiency of RME services for patients with a service time of less than 60 minutes, this is because many patients register using mobile JKN so as to speed up the service. although with that there are still patients who get a service duration of more than 60 minutes.

3. Factors Causing Service Waiting Time

The results of direct observation conducted by the researcher, found patients with a service time of less than 60 minutes whose number is more than patients with a service time of ≥ 60 minutes. The effectiveness of outpatient service waiting time in the lung polyclinic is increasing thanks to the use and utilization of electronic medical record technology, one of which is through online registration using the JKN mobile application. Patients with a waiting time of less than 60 minutes are generally patients who register online before coming to the health facility so that patients get a queue number before patients who register onsite, patients who register using the JKN mobile application will also get information on the estimated time of service so that patients can arrive on time according to the estimated time of service.

In addition, it was found that the cause of the long waiting time for patients who registered was because onsite patients registered manually at the hospital so that patients get a larger queue number than patients who registered online, this is a factor causing the long time for patients to be served. In addition, patients who register onsite do not get information on the estimated time of service so that patients tend to come before the doctor's practice hours start, this is because there is no information that patients get for the doctor's schedule. Patients usually come earlier before the practice schedule so that the patient's waiting time seems longer. Meanwhile, usually the doctor's practice starts at 10:00 until finished, where the outpatient registration officer must register the patient 1 hour before the practice starts. This is the biggest factor in the slow service time.

Other factors that cause long waiting times for outpatient services are due to NIK not being filled in automatically so that manual data input is needed, and the presence of duplicate patients (double RM). Based on the interview results, the informant also said that "When inputting new patient data that is currently not bridged for patient NIK that is not filled in automatically, also when encountering patients with double RM we have to edit patient data which can take quite a long time". This is one of the factors that delays patients in getting services so that they are late to come to the polyclinic. In addition, the informant also said that "The name of the system is sometimes not perfect, if possible the server should be improved again because sometimes there are still bugs and buffering in this RME application because the application we use is already bridged with BPJS so if for example there is a server repair from BPJS it has an impact on our application resulting in the application being temporarily unusable. this greatly hinders the process of registering patients to check into the polyclinic". The system constraints that occur also increase the waiting time for outpatient services. Regardless of the factors that cause long waiting times for outpatient services, the use of Electronic Medical Records is actually quite effective in helping to increase service times. The resource person also said, "Electronic Medical Records make it easier to search for patients through RM, Name, Date of Birth, and queue number are also directly available from the application itself." This states that the use of EMR can help improve the efficiency of the work of registration officers. Patient data can be accessed quickly and accurately, thus accelerating the registration process, diagnosis, and

minimizing diagnostic errors. This explains that EMR also contributes to accelerating patient registration.

DISCUSSION

1. Minimum Service Standards for Waiting Time for Outpatient Services

Minister of Health Regulation Number 129/MENKES/SK/II/2008 Concerning Minimum Service Standards for Hospitals defines SPM as "Minimum Service Standards" in the form of provisions regarding the types and quality of basic services which are mandatory regional affairs that every citizen has the right to receive at a minimum. And is a technical specification related to the minimum service benchmark provided by the Public Service Agency to the community". (Ministry of Health, 2008). SPM is used as a standard for service quality in every hospital in Indonesia. Every hospital is required to carry out assessments, evaluations, and services in accordance with SPM. (Astuti et al., 2015). SPM is a vital part that needs to be the focus of attention of hospital leaders as an effort to demonstrate performance accountability in fulfilling citizen rights at a minimum (Ningsih et al., 2020).

Bhayangkara Hospital TK II Sartika Asih Bandung already has a Minimum Service Standard (SPM) related to the length of waiting time for outpatient services. The SPM of Bhayangkara Hospital TK II Sartika Asih Bandung was created and determined in January 2025 and has been implemented well for patient services. The SPM also states in writing that the length of waiting time for outpatient services is <60 minutes in line with the time standard based on Permenkes Number 129 / MENKES / SK / II / 2008. There is no Minimum Service Standards that specifically regulate waiting times for outpatient lung polyclinic services, the waiting time standards set in the SPM of Bhayangkara Hospital Class II Sartika Asih Bandung become the standard for all polyclinics in the hospital.

In line with the research results of Mahadewi et al. in 2019 which took place at the Tangerang Regional Hospital, the Hospital has established SPMs containing regulations regarding outpatient service waiting times that are adjusted to the time standards based on the Minister of Health Regulation Number 129/MENKES/SK/II/2008 (Mahadewi et al., 2019).

2. Outpatient Service Waiting Time

All hospitals are required to meet the Minimum Service Standards (SPM) for outpatient waiting times based on both the Hospital SPM and the Ministry of Health Policy Instructions Number 129/Menkes/SK/II/2008. Both based on the Minimum Service Standards (SPM) of Bhayangkara Hospital Class II Sartika Asih Bandung and the Ministry of Health Policy Instructions Number 129/Menkes/SK/II/2008 outpatient waiting time is <60 minutes calculated from when the patient registers at the outpatient registration counter until the patient is called to the doctor's service room. Based on

the results of the study, the patient waiting time that was slow and inappropriate was 23 patients (33%) and the most appropriate was 47 patients (67%). This duration shows that the majority of patients waited less than 60 minutes.

The varying waiting time is due to the registration method used by the patient. The majority of patients who have registered online, one of which is through the JKN mobile application, have a relatively shorter waiting time compared to patients who register onsite.

The results of this study are consistent with the study conducted by Pratiwi and Sani in 2017 which was conducted on a random sample of 86 patients at the Obstetrics and Gynecology Polyclinic of Surakarta City Hospital, it was found that the majority of respondents' service waiting time was <60 minutes, 53 people (61.6%), and the respondent's service waiting time was >60 minutes, 33 people (31.4%) (Pratiwi Rissa Muthiah & Sani, 2017). Based on the research results of Sumayku et al. In 2023, on 353 patients, a good time (less than 60) minutes was obtained at 94.1%. Meanwhile, patient waiting times of more than 60 minutes were obtained at a percentage of 5.9% (Sumayku et al., 2023). The results of the study showed that the waiting time of less than 60 minutes was greater than the waiting time of more than 60 minutes. Although the patient's waiting time has met the established SPM standards, the hospital should evaluate the waiting time and pay attention to the causal factors that can increase the waiting time for care services that are still above the standard value.

3. Factors Causing Long Waiting Time for Outpatient Services

The majority of patients in the lung polyclinic have received a waiting time that is in accordance with the established SPM standards. According to the results of observations and interviews with several sources to determine the factors causing the long waiting time for patient services at the Bhayangkara Hospital Class II Sartika Asih Bandung. There are at least several factors that determine the length of the waiting time for services. The main factor that influences the duration of the waiting time for services is the registration method used by the patient.

Patients with a waiting time of <60 minutes are generally patients who have registered online via the Mobile JKN application before the patient comes to the health facility. Patients who have registered online get a queue number earlier than patients who register directly. Not only that, patients who have registered with the JKN mobile application will also get information on the estimated time of service so that patients can arrive on time according to the estimated time of service.

Patients who register directly or manually at the hospital generally have a longer waiting time, this happens because patients who register onsite get a larger queue number than patients who register online. This is the main factor causing the increase in waiting time for outpatient services. Patients who register onsite do not receive information regarding the doctor's schedule, therefore patients usually come earlier before the doctor's practice schedule begins. Meanwhile, the doctor's practice

schedule usually starts at 10:00 WIB so that the patient's waiting time seems longer. On the other hand, outpatient registration officers must register patients 1 hour before the practice begins. This condition is the biggest factor in the slow service time. In line with the results of research by Janah et al. In 2020, the patient waiting time at IRJA RSUD Ratu Zalecha Martapura for patients who had registered online was an average of 50.3. While for patients who registered offline, the average patient waiting time was 165.46 minutes (Jannah et al., 2020). Registration carried out online based on software can increase the effectiveness of service time. The results of research by Rohman, et al. In 2022, regarding the implementation of online registration for web-based outpatients at health centers, it is stated that patients who register online will automatically receive a queue number when online registration takes place. The registration page used also has a notification feature that can provide information regarding the queue number and estimated service. Therefore, the waiting time for services will become more efficient. In this case, the participation and awareness of health service users in carrying out the online registration process is very important (Jannah et al., 2020).

Patient waiting time is also influenced by the registration counter which is already open much earlier than the doctor's practice schedule, so those who do not register online can register directly onsite. In line with the results of research by Wulandari et al. in 2022 which stated that the factor in the long waiting time for outpatient services is because patients come earlier, so patients have to wait longer because the doctor's practice only starts at 08.00 while the registration counter has started since 05.30 in the morning (Wulandari et al., 2023).

The next factor is in the patient data input process, there is an obstacle in the form of NIK which is not filled in automatically so that officers have to input the data manually. In line with the research of Setyadi and Nadjib in 2023 which stated that the RME system has not automatically filled in NIK data, so officers have to enter the numbers one by one (Setyadi & Nadjib, 2023). This manual input process can increase patient waiting time, because filling in data manually takes longer when compared to an electronic system that has been integrated in real-time.

Cases of patients with duplicate data (duplicate medical records) are also a factor that causes the patient's waiting time to increase. When one patient is recorded in more than one medical record number, officers must cross-check and merge data before continuing the administration process (Mcclellan, 2009). This case of duplicate medical records can slow down the flow of medical record services because data verification and correction takes time.

Technical disruptions are also a factor that can increase waiting time. Based on the informant's statement, the RME system implemented at the Bhayangkara Hospital Class II Sartika Asih Bandung has been integrated (bridging) with the BPJS system. Although it has been integrated with the BPJS system.

Conclusion

1. Bhayangkara Hospital Class II Sartika Asih Bandung has set a standard waiting time for outpatient services of <60 minutes which has been in effect since January 2025. This standard is the general standard for outpatient waiting time used in all polyclinics at Bhayangkara Hospital Class II Sartika Asih Bandung.

2. Based on observation data from 70 patients, 67% of patients received services with a time of <60 minutes, while 33% of patients experienced a waiting time of ≥60 minutes.

3. The main factors that can determine the length of waiting time for outpatient services include the patient registration method, patients who arrive earlier before the doctor's practice hours, especially patients who register onsite, obstacles in the system, namely NIK data that is not automatically filled in, problematic server networks and the presence of patients with duplicate medical records.

References

Apriliyani, S. (2021a). Penggunaan Rekam Medis Elektronik Guna Menunjang Efektivitas Pendaftaran Pasien Rawat Jalan di Klinik dr. Ranny. Cerdika: Jurnal Ilmiah Indonesia, 1(10), 1399–1410. https://doi.org/10.36418/cerdika.v1i10.209

Apriliyani, S. (2021b). Penggunaan Rekam Medis Elektronik Guna Menunjang Efektivitas Pendaftaran Pasien Rawat Jalan di Klinik dr. Ranny. Cerdika: Jurnal Ilmiah Indonesia, 1(10), 1399–1410. https://doi.org/10.36418/cerdika.v1i10.209

Astuti, S. I., Arso, P., Wigati, A., Fakultas, M., Masyarakat, K., Diponegoro, U., Dosen,), Administrasi, B., & Kesehatan, K. (2015). Analisis Standar Pelayanan Minimal Pada Instalasi Rawat Jalan Di Rsud Kota Semarang. Jurnal Kesehatan Masyarakat, 3(1), 2356–3346. http://ejournal-s1.undip.ac.id/index.php/jkm

Dewi, T. S., & Silva, A. A. (2023). Hambatan Implementasi Rekam Medis Elektronik dari Perspektif Perekam Medis Dengan Metode PIECES. Jurnal Manajemen Informasi Kesehatan Indonesia (JMIKI), 11(2), 150–156. https://doi.org/10.33560/jmiki.v11i2.597

Jannah, M., Rizany, I., Setiawan, H., Studi Ilmu Keperawatan Fakultas Kedokteran, P., & Lambung Mangkurat, U. (2020). Perbandingan Waktu Tunggu Dan Kepuasan Pasien Rawat Jalan Rsud Ratu Zalecha Martapura. Jurnal Perawat Indonesia, 4(2), 402–412.

Kemenkes. (2008). Kepmenkes Nomor 129/Menkes/SK/II/2008 Tentang Standar Pelayanan Minimal Rumah Sakit. Kementerian Lesehatan Republik Indonesia.

Kemenkes RI. (2019). Peraturan Menteri Kesehatan Nomor 30 Tahun 2019 tentang Klasifikasi dan Perizinan Rumah Sakit. 3, 1–80.

Kesuma, S. I. (2023). Rekam Medis Elektronik Pada Pelayanan Rumah Sakit Di Indonesia: Aspek Hukum Dan Implementasi. Jurnal Politik, Sosial, Hukum Dan Humaniora, 1(1), 195–2025.

Mahadewi, P. E., Heryana, A., Kurniawati, Y., & Ayuba, I. (2019). Analisis Waktu Tunggu Pelayanan Poliklinik Paru di Rumah Sakit Umum Daerah (RSUD) Tangerang Analysis of Waiting Time Lung Polyclinic Service at The Regional General Hospital (RSUD) Tangerang. Journal of Public Health, 2(1), 110–119.

Mcclellan, M. A. (2009). Duplicate Medical Records: A Survey of Twin Cities Healthcare Organizations. AMIA 2009 Symposium Proceedings, 421–425.

Nasuttion, A. F. (2023). Metode Penelitian Kualitatif. Harva Creative.

Nawawi, A., Sufyana, C. M., & Gunawan, E. (2024). Implementasi Sistem Informasi Triase IGD Pasien Rawat Jalan di Rumah Sakit X. Jurnal Teknologi Sistem Informasi Dan Aplikasi, 7(2), 752-759.

Ningsih, K. P., Nugroho, S., Prodi, A., Medis, R., Kesehatan, I., Jenderal, U., Yani, A., Brawijaya, J., Barat, R., Ambarketawang, G., & Korespondensi, S. (2020). Evaluasi Standar Pelayanan Minimal Rekam Medis di RSUD Panembahan Senopati Bantul. Health Information Management Journal , 8(2), 2655–9129.

Pratiwi Rissa Muthiah, & Sani, N. F. (2017). The Relationship Between Service Waiting Time On Patient Satisfaction Level In Obstetric And Gynecology Polyclinic Of Surakarta District General Hospital. PROFESI, 14(2), 24–31.

Presiden RI. (2023). Undang-Undang Republik Indonesia Nomor 17 Tahun 2023 Tentang Kesehatan. Undang-Undang, 187315, 1–300.

Republik Indonesia. (2023). Undang-Undang Republik Indonesia Nomor 17 Tahun 2023 Tentang Kesehatan (No 187315 A). Sekretariat Negara.

Setyadi, D., & Nadjib, M. (2023). The Effect of Electronic Medical Records on Service Quality and Patient Satisfaction: A Literature Review. Journal Research of Social Science, Economics, and Management, 2(12), 2780–2791. https://doi.org/10.59141/jrssem.v2i12.500

Sumayku, I. M., Pandelaki, K., Kandou, G. D., Wahongan, P. G., & Nelwan, J. E. (2023). Analisis Faktor-faktor yang Berhubungan dengan Waktu Tunggu Pelayanan di Poliklinik Rawat Jalan Rumah Sakit Sentra Medika Kabupaten Minahasa Utara Analysis of Factors Associated with Waiting Time for Services at Outpatient Clinic of Sentra Medika Hospital, North Minahasa Regency. EClinic, 11(1), 1–10.

Vitaloka, R., Sari, I., Medis, R., Informasi, D., & Diii, K. (2024). Tinjauan Implementasi Rekam Medis Elektronik Dalam Menunjang Efektivitas Pelayanan Rawat Inap Di Rs Paru Dr.H.A.Rotinsulu. Jurnal Infokes, 8(1), 52–61. https://doi.org/https://doi.org/10.56689/infokes.v8i1.1411

Wulandari, F. R., Fannya, P., Dewi, D. R., & Putra, D. H. (2023). Tinjauan Lama Waktu Tunggu Pelayanan Pasien Rawat Jalan Poli Jantung di Rumah Sakit Angkatan Laut Marinir Cilandak Tahun 2022. Student Scientific Creativity Journal, 1(4), 27–40. https://doi.org/10.55606/sscj-amik.v1i4.1548