



The Impact of Electronic Medical Record Entry on Service Efficiency at Sitti Khadijah Women's and Children's Hospital In Gorontalo

Merlin Abd. Rahman^{1*}, Juwita Mooduto², Moh. Ichsan A. Antu³

^{1,2,3}Prodi D-III Rekam Medis Dan Informasi Kesehatan, Stikes Bakti Nusantara Gorontalo

*Corresponding author: merlinabd.rahman@gmail.com

Article Info

Article history:

Received 26 May, 2026

Revised 08 July, 2026

Accepted 25 July, 2026

Keywords:

Electronic Medical Records;
EMR Entry; Service
Efficiency; Hospital
Information Systems

ABSTRACT

Electronic Medical Records (EMR) are an important component of digital transformation in healthcare and are expected to improve the quality and efficiency of hospital services. Nevertheless, incomplete patient data, delayed entry, limited accessibility, technical problems, and differences in user readiness may reduce the benefits of EMR implementation. This study aimed to determine the impact of EMR entry on service efficiency at Sitti Khadijah Women's and Children's Hospital in Gorontalo. A quantitative observational analytic study with a cross-sectional design was conducted in June 2026. The study population comprised healthcare workers involved in EMR entry, and 30 respondents were selected using total sampling. Data were collected using a questionnaire measured on a five-point Likert scale and analyzed using univariate analysis and simple linear regression. The findings showed that patient-data completeness was significantly associated with service efficiency ($B = 0.385$; $t = 2.160$; $p = 0.040$), whereas the accuracy of EMR entry did not show a statistically significant effect ($B = 0.263$; $t = 1.361$; $p = 0.184$). Ease of data access showed a positive and statistically significant effect on service efficiency ($B = 0.673$; $t = 8.920$; $p < 0.001$). Overall, the study concludes that EMR entry contributes to service efficiency, particularly through complete patient information and easy access to data. Continued improvement of EMR quality, infrastructure, user competence, monitoring, and standard operating procedures is recommended.

INTRODUCTION

Hospitals are healthcare institutions that provide medical, nursing, diagnostic, and treatment services and are required to deliver services that are effective, efficient, and responsive to patient needs. The quality of hospital services is influenced not only by clinical care but also by the availability and management of accurate health information. In this context, medical records are essential because they document patient identity, diagnoses, examinations, treatments, and other services provided during care.

The development of information technology has transformed patient documentation from predominantly paper-based records toward Electronic Medical Records (EMR). EMR systems enable health information to be stored, managed, and accessed digitally. In Indonesia, the implementation of EMR is supported by Minister of Health Regulation No. 24 of 2022 on Medical Records. The intended benefits include faster information access, improved documentation, reduced paper use, better communication among healthcare professionals, and support for more efficient services.

Despite these potential benefits, implementation is not free from challenges. The source study reports incomplete patient data, delayed data entry, limited user understanding, system errors, slow loading, unstable internet connections, human error, duplicate or unsynchronized data, and difficulties locating information during initial observations at Sitti Khadijah Women's and Children's Hospital in April 2026. These conditions may increase the time required for administrative and clinical processes and may reduce the efficiency gains expected from EMR.

The present study therefore examined EMR entry from three principal dimensions: patient-data completeness, accuracy of EMR entry, and ease of data access. The objective was to determine how these dimensions relate to service efficiency at Sitti Khadijah Women's and Children's Hospital in Gorontalo.

METHODS

This study used a quantitative observational analytic approach with a cross-sectional design. The independent variable was EMR entry, operationalized through patient-data completeness, accuracy of EMR entry, and ease of data access. The dependent variable was service efficiency, defined as the ability of healthcare services to provide care quickly, accurately, and optimally using the EMR system.

The study was conducted at Sitti Khadijah Women's and Children's Hospital in Gorontalo in June 2026, focusing on healthcare workers involved in EMR entry. The population consisted of all healthcare workers involved in EMR entry at the hospital. Because the population was limited, total sampling was used, resulting in 30 respondents.

Primary data were collected through questionnaires, supported by interviews and observation. The questionnaire used a five-point Likert scale ranging from 1 (Strongly Inefficient) to 5 (Very Efficient). The instrument covered five items for each of the three EMR-entry dimensions and five items for service efficiency. The study states that questionnaire validity was assessed using Pearson Product Moment correlation and reliability using Cronbach's Alpha. Normality was assessed before regression analysis. Data were analyzed descriptively using frequency distributions and inferentially using simple linear regression at a significance level of $\alpha = 0.05$.

The source document reports a Kolmogorov–Smirnov normality test with an Asymp. Sig. of 0.996. For the three independent dimensions, tolerance values ranged from 0.839 to 0.887 and VIF values from 1.128 to 1.192, while the scatterplot was interpreted as showing no heteroscedasticity. These findings were used by the original study to support continuation of the regression analysis.

RESULTS

Table 1 Respondent Characteristics

Characteristic	n	%
Female	22	73.3
Male	8	26.7
Work experience <1 year	2	6.7
Work experience 1–5 years	19	63.3
Work experience 6–10 years	8	26.7
Work experience >10 years	1	3.3
Nurse	17	56.7
Midwife	10	33.3
Medical records officer	2	6.7
Casemix	1	3.3

Among the 30 respondents, 22 (73.3%) were women and 8 (26.7%) were men. Most respondents had 1–5 years of work experience (63.3%). Nurses represented the largest professional group (56.7%), followed by midwives (33.3%), medical records officers (6.7%), and casemix staff (3.3%).

Table 2 Descriptive Findings

Variable / indicator	Category	n	%
Patient-data completeness	Very efficient	23	76.7
Patient-data completeness	Efficient	7	23.3
Accuracy of EMR entry	Very efficient	21	70.0
Accuracy of EMR entry	Efficient	9	30.0
Ease of data access	Very efficient	16	53.3
Ease of data access	Efficient	13	43.3
Ease of data access	Less efficient	1	3.3
Service efficiency	Very efficient	16	53.3
Service efficiency	Efficient	14	46.7

The descriptive results indicate generally favorable assessments. Patient-data completeness was rated very efficient by 76.7% of respondents. Accuracy of EMR entry was rated very efficient by 70.0%. Ease of data access was rated very efficient by 53.3%, while one respondent (3.3%) rated it less efficient. For service efficiency, 53.3% of respondents selected very efficient and 46.7% selected efficient.

Table 3 Regression Analysis

Predictor	B	t	p-value	Interpretation
Patient-data completeness	0.385	2.16	0.04	Significant positive effect
Accuracy of EMR entry	0.263	1.361	0.184	Not statistically significant
Ease of data access	0.673	8.92	<0.001	Significant positive effect

Patient-data completeness had a positive and statistically significant coefficient ($B = 0.385$; $t = 2.160$; $p = 0.040$). The corresponding simple regression equation reported in the source was $Y = 13.202 + 0.385X_1$.

Accuracy of EMR entry had a positive coefficient ($B = 0.263$), but the association was not statistically significant ($t = 1.361$; $p = 0.184$). The source therefore concludes that differences in accuracy of EMR entry were not sufficient to demonstrate a statistically significant effect on service efficiency in this study.

Ease of data access had the largest reported positive coefficient among the three separate simple regressions ($B = 0.673$; $t = 8.920$; $p < 0.001$). The reported equation was $Y = 7.534 + 0.673X_3$. The result indicates that higher ease of access was statistically associated with higher service-efficiency scores in the study population.

DISCUSSION

The finding on patient-data completeness indicates that complete information can support more efficient hospital workflows. When patient identity, diagnosis, procedures, examination results, and treatment information are available in the EMR, healthcare workers can obtain required information without repeatedly searching for missing records or confirming incomplete entries. The original study links this mechanism to faster administrative and clinical processes and to better coordination among healthcare professionals.

The result for accuracy of EMR entry requires a more cautious interpretation. Although the regression coefficient was positive, the p-value of 0.184 exceeded the 0.05 threshold. The source discusses several possible contextual explanations, including relatively standardized entry practices, system features such as mandatory fields or validation, and the possibility that service efficiency at the hospital is more sensitive to completeness and accessibility than to variation in entry accuracy. These explanations are presented as interpretations in the source rather than directly tested mechanisms.

Ease of data access showed a statistically significant positive effect and was described in the source as an important component of EMR implementation. Easy access can reduce the time needed to locate patient information and may facilitate coordination between service units. The source also emphasizes that access should remain secure and limited to authorized users, consistent with the need to protect patient confidentiality and personal data.

Taken together, the results suggest that EMR implementation should not be evaluated solely by whether an electronic system exists. The practical value of the system depends on the quality of information entered and the ability of authorized users to retrieve information efficiently. The study recommends continued monitoring of completeness and accuracy, infrastructure maintenance, improvements in network quality, user training, and periodic system evaluation.

The study also has limitations that should be recognized when interpreting the findings. The sample consisted of 30 respondents from a single hospital, and the cross-sectional design captures perceptions and measurements at one point in time. In addition, the statistical results presented in the source are separate simple regressions for the three dimensions rather than one reported multivariable model containing all three predictors simultaneously. Therefore, the findings should be understood as dimension-specific regression results rather than as estimates of independent effects after adjustment for the other dimensions.

CONCLUSION

The study at Sitti Khadijah Women's and Children's Hospital in Gorontalo found that EMR entry was generally rated efficient to very efficient by respondents. Patient-data completeness showed a statistically significant positive effect on service efficiency, while accuracy of EMR entry had a positive but statistically non-significant association. Ease of data access showed a statistically significant positive effect on service efficiency. Overall, the source concludes that EMR entry contributes to service efficiency, particularly through complete patient information and accessible data.

For practice, the study recommends strengthening EMR implementation through routine monitoring of data completeness and accuracy, improvement of information systems and network infrastructure, maintenance of supporting equipment, continuing education for healthcare workers, and regular system evaluation. Future studies are encouraged to use larger samples, different hospitals, and additional explanatory variables such as human-resource capability, information-system quality, user satisfaction, workload, motivation, and organizational factors.

BIBLIOGRAPHY

- Ahmad Diaz Triadi, D. W. (n.d.). Pengaruh Pendistribusian Rekam Medis Elektronik Pasien Rawat Jalan terhadap Efektivitas Pelayanan di Rumah Sakit Umum. *Jurnal Kesmas Asclepius*. <https://doi.org/10.31539/jka.v5i2.7651>
- Amin, M., Setyonugroho, W., & Hidayah, N. (2021). Penulisan Kuesioner Penelitian. *JATISI (Jurnal Teknik Informatika dan Sistem Informasi)*, 8(1), 430–442.
- Ansori, O. A., Shafa, A. N., Puteri, D. M., & Bernarto, I. (2024). Analisis efisiensi, frekuensi penggunaan dan penggunaan harian rekam medis elektronik terhadap kepuasan tenaga kesehatan di RSKGMP Jakarta Selatan. *Prepotif: Jurnal Kesehatan Masyarakat*, 8(3), 6814–6823. <https://doi.org/10.31004/prepotif.v8i3.37974>
- Indrayadi, H. A. Astia. (2023). Research on Electronic Medical Records in Indonesia, 6(1), 182–198. <http://journal.unpacti.ac.id/index.php/JPP>
- Kesehatan, P., Simanjuntak, E., Sitorus, M. S., Permata, S., Lubis, S., & Sihite, G. A. (2025). Records (EMR) and Health Worker Satisfaction at Imelda, 11(November), 536–545.
- n. Purnama. (2021). Kelengkapan Data Pasien Rekam Medik di Rumah Sakit, 1–8.
- Pasalli', A., & Patattan, A. A. (2021). Hubungan mutu pelayanan kesehatan dengan kepuasan pasien di Rumah Sakit Fatima Makale di era new normal. *Jurnal Keperawatan Florence Nightingale*, 4(1), 14–19. <https://doi.org/10.52774/jkfn.v4i1.57>
- Rahmayuli. (2025). Pengaruh pemahaman dan implementasi rekam medis elektronik terhadap efisiensi pelayanan rawat jalan dimediasi keterlibatan pengguna pada Rumah Sakit Permata Hati. *Jurnal Ilmiah Multi Disiplin*, 3, 564–582.
- Rasyid, M., Pt, J., Teknologi, M., Jakarta, K., Id, I. R., & Aqid, B. M. (2023). Implementation of EMR System in Indonesian Health Facilities: Benefits and Constraints.
- Renaya, C., Kesya, A., & Saputra, I. (2026). Strategi efektivitas biaya untuk meningkatkan efisiensi pelayanan kesehatan primer di pusat kesehatan masyarakat: Literature review, 3(1), 42–56.
- Risnawati, E. P. (2024). Analisis hambatan dalam implementasi rekam medis. *Pengabdian Kepada Masyarakat Nusantara*, 5(2), 1603–1608.
- Rubiyanti, N. S. (2023). *Jurnal Kesehatan STIKes Sumber Waras. ALADALAH: Jurnal Politik, Sosial, Hukum dan Humaniora*, 1(1), 179–187.
- Sari, I. (n.d.). Analisis Sistem Informasi Rekam Medis Elektronik terhadap Efisiensi Waktu Pelayanan di Unit Pendaftaran Rawat Jalan Rumah Sakit X, 10–20.
- Supartiningsih, S. (2017). Kualitas pelayanan dan kepuasan pasien rumah sakit: Kasus pada pasien rawat jalan. *Jurnal Medicoeticolegal dan Manajemen Rumah Sakit*, 6(1), 9–15. <https://doi.org/10.18196/jmmr.6122>
- Wibowo, T. I., & Rahayu, A. H. (2025). Pengaruh penggunaan rekam medis elektronik terhadap efektifitas pelayanan rawat jalan di Rumah Sakit Umum (RSUD) Welas Asih. *Jurnal Kesehatan Tambusai*, 6(3), 12699–12705.
-