DIJEMSS: Dinasti International Journal of Education Management and Social Science
E-ISSN: 2686-6331
P-ISSN: 2686-6358
https://dinastipub.org/DIJEMSS dinasti.info@gmail.com +62 811 7404 455
DOI: https://doi.org/10.38035/dijemss.v6i3

The Impact of Electronic Health Record Usage on The Work Performance of General Practitioners in Emergency Departments

Jessica Riama Tobing[1], Rachmannisa Shauma Aghna Syifa[2], Rezki Jayanti Jahidin[3]
[1]Hospita Management, Universitas Pelita Harapan, Jakarta, Indonesia, jessicatobing97@gmail.com
[2]Hospital Management, Universitas Pelita Harapan, Jakarta, Indonesia, shaumaaghna19@gmail.com
[3]Hospital Management, Universitas Pelita Harapan, Jakarta, Indonesia, ejejayantijhdn@gmail.com

Corresponding Author: jessicatobing97@gmail.com[1]

Abstract: Introduction: Despite significant advancements have been made in Electronic Health Records (EHR), challenges in implementation and adoption continue to persist. The anticipated benefits often fall short of expectations, particularly for general practitioners (GP) working in emergency departments, where the heavy workload poses additional hurdles. The objective is to examine the impact of EHR attributes in work performances of GP working in emergency departments. Methods: This study employs a quantitative-analytic design, utilizing cross-sectional data collected from a sample of 20 participants. Results: The analysis of the sample revealed that the presentation of EHR positively influenced work performance (p-value < 0.05), EHR information (p-value < 0.05), efficiency (p-value < 0.01), and service quality (p-value < 0.05). Reliability analysis demonstrated a Cronbach's alpha of 0.924 across all variables, indicating strong internal consistency (r > 0.60). Conclusion: the use of EHR significantly enhances the work performance for GP working in emergency departments

Keyword: EHR, Work Performance, General Practitioner, Emergency Department.

INTRODUCTION

Technological advancements have become essential in the healthcare industry, especially in efforts to lower costs and improve service quality. A key innovation in this area is the adoption of Electronic Health Records (EHR). EHR unify multiple hospital systems, such as medical records, billing, pharmacy, and accounting, to create comprehensive healthcare service documentation. (Gedikci et al., 2023). In Indonesia, the implementation of EHR is regulated under the Ministry of Health Regulation No. 42 of 2022 concerning medical records. This policy mandates healthcare facilities to adopt electronic systems for recording patients' medical histories. Recent data from Perhimpunan Rumah Sakit Seluruh Indonesia (PERSI) indicates that the average digital maturity level of hospitals in Indonesia in 2023 is 2.61 on a 5-point scale. On the other hand, 94% of hospitals in the country have already adopted EHR. (Kementerian Kesehatan RI, 2022; PERSI, 2023)

The adaptation of technology within healthcare systems undoubtedly has a significant impact on the performance of healthcare services, including general practitioners working in emergency departments, who play a crucial role in patient management. An efficient medical

record system can greatly assist doctors in emergency settings in delivering optimal care. (Mullins, A et al., 2022). Studies have reported that EHR have proven to enhance efficiency in information retrieval, improve adherence to treatment guidelines, reduce medical errors and adverse drug events, and facilitate patient data documentation. However, challenges associated with EHR usage have also been frequently reported in various studies, including increased workload, disruption of workflow, and clinical burnout. (Campanella P, 2015; Tsai CH, 2020) The implementation of EHR in relation to the work performance of doctor needs to be examined from various aspects, such as efficiency, accuracy, and work productivity. The experience of using the system can provide insights into whether the system genuinely supports performance improvement or if it introduces new challenges that need to be addressed. (Kalayou et al., 2021) This study aim to examine the impact of EHR attributes in work performances of GP working in emergency departments.

METHOD

This research employs an analytical quantitative design with a cross-sectional approach, conducted between September and October 2024 in Indonesia. The study targeted all physicians working in emergency departments. A consecutive sampling method was used to select a minimum sample size of 20 participants. Prior to the main data collection, a pilot questionnaire was administered to evaluate the reliability and validity of the survey items, which assessed factors such as presentation, information, efficiency, and services. The pilot test involved 15 respondents. Data analysis was performed using univariate analysis, followed by a normality test specifically Shapiro-Wilk test, and bivariate analysis with the Chi-square test or Fisher's Exact test at a 95% confidence level. A p-value of less than 0.05 was considered statistically significant, whereas a p-value greater than 0.05 indicated no significant results. This research has received ethical approval from the Ethics Commission of the Faculty of Medicine, University of Indonesia/Cipto Mangunkusumo Hospital, under Number: KET-46/UN2.FI/ETIK/PPM.00.06/2024, dated March 20, 2024.

RESULTS AND DISCUSSION

This study was carried out by researchers between September and October 2024, utilizing online questionnaires distributed to GP working in emergency departments with different hospitals. A total of 20 samples were obtained. The characteristics of the respondents from the results of this study are detailed and can be found in Table 1. The questionnaire data revealed that gender distribution were equal with 50% male and 50% female 34 respondents. Mean ages 29.2 ± 3.5 years, with median of work experience 2 (1-15) years.

Table 1. Distribution Of Respondent Characteristics

Characteristics	n	n (%) or median (IQR)
Total number of samples	20	
Gender		
Female	10	50
Male	10	50
Age	20	29.2 (3.5)
Length of Work	20	2 (1-15)

The findings of this study demonstrate that the data collected follows a normal distribution in gender and age of respondent characteristics. This study identifies four independent variables including EHR presentation, information, efficiency and service quality. The performance of GP working in emergency department is analyzed as the dependent variable. Reliability analysis demonstrated a Cronbach's alpha of 0.924 across all variables,

indicating strong internal consistency (r > 0.60). The results of the conducted questionnaire are presented in the following table.

Table 2 demonstrate a varied distribution of respondents' perceptions regarding the usability and functionality of the Electronic Health Record (EHR) system. The majority of respondents selected "strongly agree" (SA) for several items, particularly for question 5, "Laboratory results can be displayed in the EHR," and question 6, "Radiology results (digital images and/or interpretations) can be displayed in the EHR," with 14 respondents (70%) affirming each. Similarly, question 7, "EHR can display the selected type of laboratory test in less than a minute," received high support, with 10 respondents (50%) selecting "strongly agree" and 10 (50%) selecting "agree."

Neutral responses (N) were most frequent for question 9, "EHR printed on paper still needs to be manually edited to ensure it looks good and is properly formatted," with 8 respondents (40%) opting for this answer. In contrast, neutral responses were entirely absent in questions 5, 6, 7, and 8, highlighting their lower perceived ambiguity or dissatisfaction.

Table 2. Distribution of Respondents' Answers to EHR presentation in work performance

No	Question Items	Respondents' Answers				
		1	2	3	4	5
		SD	D	N	A	SA
1	EHR can be easily printed into a physical (paper) medical record	2 (10%)	1 (5%)	6 (30%)	5 (25%)	6 (30%)
2	Education becomes easier because it can be recorded in the EHR	1 (5%)	2 (10%)	4 (20%)	5 (25%)	8 (40%)
3	A sick leave medical certificate can be printed in the EHR format	1 (5%)	1 (5%)	4 (20%)	6 (30%)	8 (40%)
4	Doctors can easily print referral letters with EHR	0 (0%)	1 (5 %)	3 (15%)	8 (40%)	8 (40%)
5	Laboratory results can be displayed in the EHR	0 (2%)	0 (0%)	1 (5%)	5 (25%)	14 (70%)
6	Radiology results (digital images and/or interpretations) can be displayed in the EHR	0 (0%)	1 (5%)	0 (0%)	5 (25%)	14 (70%)
7	EHR can display the selected type of laboratory test in less than a minute	0 (0%)	0 (0%)	0 (0%)	10 (50%)	10 (50%)
8	EHR can display the selected type of radiology test in less than a minute	0 (0%)	0 (0%)	0 (0%)	11 (55%)	9 (45%)
9	EHR printed on paper still needs to be manually edited to ensure it looks good and is properly formatted	2 (10%)	5 (25%)	8 (40%)	2 (10%)	3 (15%)
10	The interpretation from the radiology specialist must be retyped into the EHR	1 (5%)	7 (35%)	5 (25%)	2 (10%)	5 (25%)

11	Laboratory results must be retyped into the EHR	2 (10%)	8 (40%)	4 (20%)	2 (10%)	4 (20%)
12	EHR already contains the history of illness, physical examination, laboratory tests, radiological examinations, therapy, and recommendations	0 (0%)	1 (5%)	2 (10%)	6 (30%)	11 (55%)
13	EHR contains all types of medical procedures performed at the hospital	0 (0%)	0 (0%)	4 (20%)	6 (30%)	10 (50%)
14	EHR contains the minimum stock, maximum stock, and current stock for all types of medications available in the hospital	1 (5%)	2 (10%)	3 (15%)	5 (25%)	9 (45%)
15	EHR sometimes cannot be accessed on certain computers	2 (10%)	2 (10%)	4 (20%)	7 (35%)	5 (25%)
16	Images in the EHR sometimes cannot be accessed	3 (15%)	1 (5%)	7 (35%)	7 (35%)	2 (10%)
17	Data entered into the EHR sometimes gets lost	2 (10%)	1 (5%)	8 (40%)	4 (20%)	5 (25%)

"Disagree" (D) responses peaked in question 10, "The interpretation from the radiology specialist must be retyped into the EHR," with 7 respondents (35%), indicating concerns regarding manual input requirements. Conversely, disagreement was completely absent in question 5, signifying a strong consensus regarding its functionality.

"Strongly disagree" (SD) responses were the least frequent overall. The highest frequency was noted in question 16, "Images in the EHR sometimes cannot be accessed," with 3 respondents (15%). However, this response was entirely absent across

several questions, including questions 4, 5, 6, 7, 8, and 13, reflecting general satisfaction with the features assessed by these items.

Table 3 demonstrated a general consensus among respondents regarding the effectiveness of the EHR system's functionalities. For question 1, a significant proportion of participants (60%) selected "strongly agree," indicating that the system consistently displays patient age based on the entered date of birth, facilitating physicians' workflows. Similarly, for question 2, 45% of respondents each chose "agree" and "strongly agree," confirming the accurate daily patient count display functionality.

The "strongly agree" response was most frequently observed for question 1 (60%), reflecting high satisfaction with this feature. In contrast, the lowest frequency of "strongly agree" responses was reported for questions 8 and 9, where only 20% of respondents endorsed this level of agreement. Neutral responses were most common for question 13 (35%), which assessed the ease of copying and pasting radiological interpretation data, and least frequent for question 1 (10%).

The response "disagree" was observed at its highest in questions 7 and 11, with 15% of respondents selecting this option, whereas several questions, including 1, 2, and 5, recorded no "disagree" responses. Similarly, "strongly disagree" was minimally selected across the survey, with the highest occurrence (5%) noted in questions 4, 8, and 9.

Table 4 indicate varying levels of respondent agreement regarding the efficiency and usability of the EHR system. For question 1, the majority of respondents expressed positive

agreement, with 45% selecting "agree" and 30% selecting "strongly agree," suggesting that the system can be reused effectively in conjunction with software updates. In contrast, question 5 highlighted notable dissatisfaction, as 40% of respondents selected "disagree" regarding the complexity of teaching the EHR to new staff, and no respondents selected "strongly agree."

Neutral responses were particularly prominent for questions 2 and 10, with 50% of respondents selecting "neutral" when asked about the exhausting nature of staff training and the resolution of EHR issues by restarting the computer, respectively. These findings indicate mixed perceptions of these aspects.

For question 8, which evaluated the ease of remembering laboratory test terms, the majority of respondents provided favorable responses, with 45% selecting "agree" and 20% selecting "strongly agree." Conversely, question 9, concerning the difficulty of recalling disease terms in the ICD-10, showed a high frequency of disagreement, with 40% of respondents selecting "disagree."

Table 3. Distribution of Respondents' Answers to EHR information in work performance

No	Question Items	Respondents' Answers				
		1	2	3	4	5
		SD	D	N	A	SA
1	EHR always displays the patient's age based on the entered date of birth, making it easier for doctors	0 (0%)	0 (0%)	2 (10%)	6 (30%)	12 (60%)
2	EHR always accurately displays the daily patient count	0 (0%)	0 (0%)	2 (10%)	9 (45%)	9 (45%)
3	The physical examination template in the EHR aligns with the required standards	0 (0%)	2 (10%)	4 (20%)	5 (25%)	9 (45%)
4	The ICD-10 template in the EHR meets the required standards	1 (5%)	1 (5%)	3 (15%)	8 (40%)	7 (35%)
5	The procedure template in the EHR meets the required standards	0 (0%)	0 (0%)	4 (20%)	10 (50%)	6 (30%)
6	The laboratory test template in the EHR meets the required standards	0 (0%)	1 (5%)	2 (10%)	11 (55%)	6 (30%)
7	The referral letter template in the EHR meets the required standards	0 (2%)	3 (15%)	2 (10%)	10 (50%)	5 (25%)
8	The informed consent template in the EHR meets the required standards	1 (5%)	3 (15%)	3 (15%)	9 (45%)	4 (20%)

9	Physical examination data from external sources can be easily copied and pasted into the EHR	1 (5%)	1 (5%)	4 (20%)	8 (40%)	6 (30%)
10	Patient recommendation data from external sources can be easily copied and pasted into the EHR	0 (0%)	1 (5%)	6 (30%)	7 (35%)	6 (30%)
11	Physical examination records from outside the EHR can be easily copied and pasted into the EHR	0 (0%)	3 (15%)	4 (20%)	8 (45%)	5 (25%)
12	Recommendations from outside the EHR can be easily copied and pasted into the EHR	0 (0%)	3 (15%)	4 (20%)	8 (45%)	5 (25%)
13	Radiological interpretation data can be easily copied and pasted into the EHR	0 (0%)	1 (5%)	7 (35%)	7 (35%)	5 (25%)

Table 4. Distribution of Respondents' Answers to EHR efficiency in work performance

No	**Question Items**	**Respondents' Answers**				
		1	2	3	4	5
		SD	D	N	A	SA
1	EHR can be reused easily in line with the development of software updates	0 (0%)	0 (0%)	5 (25%)	9 (45%)	6 (30%)
2	Staff training on the EHR is very exhausting	0 (0%)	3 (15%)	10 (50%)	5 (25%)	2 (10%)
3	Data modification in the EHR requires a login and password	0 (0%)	2 (10%)	4 (20%)	8 (45%)	6 (30%)
4	EHR is never affected by computer viruses	2 (10%)	3 (15%)	8 (45%)	6 (30%)	1 (10%)
5	EHR is too complicated to be taught to new staff	1 (5%)	8 (40%)	9 (45%)	2 (10%)	0 (0%)
6	New staff require a long time to be able to use the EHR	2 (10%)	6 (30%)	8 (40%)	4 (20%)	0 (0%)
7	The medical procedure terms in the EHR are difficult to remember, making them hard to find	1 (5%)	6 (30%)	8 (45%)	5 (25%)	0 (0%)

8	The laboratory test terms are easy to remember, making them easy to find	0 (0%)	0 (0%)	7 (35%)	9 (45%)	4 (20%)
9	The disease terms in the ICD-10 within the EHR are difficult to remember, making them hard to search for	2 (10%)	8 (40%)	6 (30%)	4 (20%)	0 (0%)
10	EHR issues can often be resolved simply by restarting the computer	2 (10%)	4 (20%)	10 (50%)	3 (15%)	1 (5%)
11	EHR issues can only be fixed by IT staff	0 (0%)	0 (0%)	6 (30%)	8 (40%)	6 (30%)

"Strongly disagree" responses were infrequent across all questions, with the highest frequency of 10% recorded for questions 4, 6, 9, and 10. Additionally, for questions 1 and 11, no respondents selected either "disagree" or "strongly disagree," reflecting strong alignment on these aspects of the EHR system.

Table 5 responses highlight varied perceptions of the service functionalities of the EHR system. For question 1, which addressed data saving reliability, the majority of respondents selected "disagree" (40%), suggesting issues with this functionality. Similarly, for question 2, 50% of respondents "disagreed" that the EHR always displays a print preview when the corresponding button is clicked, indicating significant dissatisfaction.

A majority of respondents expressed challenges with data accuracy in question 3, where 50% "disagreed" that the EHR consistently displays data as previously entered. However, a notable shift was observed in question 11, where 55% "agreed" and 30% "strongly agreed" that laboratory results could be accessed through the EHR, demonstrating confidence in this functionality.

Neutral responses were frequent across several questions, peaking at 40% for question 13, which assessed whether the EHR simplifies doctors' work. This neutrality indicates mixed feelings about the system's overall impact on workflow efficiency.

The impact of the EHR on doctor-patient interactions elicited divided responses. For question 6, 35% of respondents "disagreed" that EHR usage distracts doctors, while 30% remained neutral. Additionally, in question 8, 30% "disagreed" that the EHR disrupts the doctor-patient relationship, but 20% "strongly agreed" or "agreed," reflecting differing experiences among users.

"Strongly disagree" responses were relatively low overall, with the highest frequencies recorded for question 1 and question 3 (20% each), highlighting areas of notable concern.

Table 5. Distribution of Respondents' Answers to EHR service in work performance

No	**Question Items**	**Respondents' Answers**				
		1	2	3	4	5
		SA	A	N	D	SD
1	EHR always saves data when the save button is clicked.	1 (5%)	1 (5%)	6 (30%)	8 (40%)	4 (20%)

2	EHR always displays a print preview when the print preview button is clicked	0 (0%)	0 (0%)	6 (30%)	10 (50%)	4 (20%)
3	When reopened, the EMR always displays the data exactly as it was previously entered	0 (0%)	1 (5%)	5 (25%)	10 (50%)	4 (20%)
4	Doctors can listen to patients while using the EHR	1 (5%)	5 (25%)	5 (25%)	6 (30%)	3 (15%)
5	Doctors can talk to patients while using the EHR	1 (5%)	7 (35%)	5 (25%)	4 (20%)	3 (15%)
6	The use of EHR distract the doctor's focus	0 (0%)	3 (15%)	6 (30%)	7 (35%)	4 (20%)
7	Doctors tend to focus more on the computer than the patient while filling out the EHR	0 (0%)	2 (10%)	7 (35%)	6 (30%)	5 (25%)
8	The doctor-patient relationship is disrupted due to the EHR	2 (10%)	4 (20%)	4 (20%)	6 (30%)	4 (20%)
9	Doctors provide better therapy due to the EHR	1 (5%)	2 (10%)	8 (40%)	6 (30%)	3 (15%)
10	Doctors can access medical records quickly due to the EHR	0 (0%)	2 (10%)	2 (10%)	9 (45%)	7 (35%)
11	Doctors can access laboratory results through the EHR	0 (0%)	1 (5%)	2 (10%)	11 (55%)	6 (30%)
12	Prescribing medication becomes faster due to the EHR	2 (10%)	0 (0%)	6 (30%)	7 (35%)	5 (25%)
13	Overall, a doctor's work becomes easier with the EHR	1 (5%)	0 (0%)	8 (40%)	6 (30%)	5 (25%)
14	Radiology images are stored using the EHR	1 (5%)	1 (5%)	4 (20%)	11 (55%)	3 (15%)
15	Prescriptions are created using the EHR	1 (5%)	0 (0%)	3 (15%)	10 (50%)	6 (30%)
16	Referral letters are created using the EHR	0 (0%)	3 (15%)	5 (25%)	9 (45%	3 (15%)

Table 6. Distribution of Respondents' Answers to Perception of Work Performance using EHR

No	Question Items	Respondents' Answers				
		1	2	3	4	5
		SA	A	N	D	SD
1	Doctors complete their work according to established standards due to the use of the EHR	0 (0%)	1 (5%)	4 (20%)	10 (50%)	5 (25%)
2	The use of EHR ensures that doctors consistently maintain discipline in their work	0 (0%)	0 (0%)	3 (15%)	10 (50%)	6 (30%)
3	Doctors can meet the required quality standards in their work	0 (0%)	1 (5%)	3 (15%)	11 (55%)	5 (25%)
4	The work carried out by doctors is done correctly in accordance with applicable principles	0 (0%)	0 (0%)	2 (10%)	13 (65%)	5 (25%)
5	The outcomes produced by doctors meet the performance requirements set by the hospital	0 (0%)	0 (0%)	5 (25%)	10 (50%)	5 (25%)
6	The results achieved by doctors are proportional to the sacrifices they make	2 (10%)	3 (15%)	3 (15%)	9 (45%)	3 (15%)
7	The use of EHR makes doctors reliable in completing their tasks	0 (0%)	0 (10%)	3 (15%)	12 (60%)	5 (25%)
8	Doctors are trusted to make every decision	0 (0%)	0 (0%)	2 (10%)	11 (55%)	7 (35%)
9	Doctors maintain good ethics in their work	0 (0%)	0 (0%)	2 (10%)	4 (20%)	14 (70%
10	The use of EHR enables doctors to collaborate and work well with other healthcare professionals	0 (0%)	0 (0%)	2 (10%)	5 (25%)	13 (65%)

Table 7. Bivariate analysis

Independent Variable	Dependent Variable	Statistical Test	p-value	Significance
EHR Presentation	Perception of Work Performance	Fisher Exact	<0.05	Significance

EHR Information	Perception of Work Performance	Fisher Exact	<0.05	Significance
EHR Efficiency	Perception of Work Performance	Chi-Square	<0.01	Significance
EHR Service	Perception of Work Performance	Fisher Exact	<0.05	Significance

The results of the bivariate analysis reveal significant associations between EHR variables and the perception of work performance. EHR presentation and EHR information demonstrated statistically significant relationships with work performance perceptions, each with a p-value of <0.05 based on the fisher exact test. EHR efficiency showed a highly significant association with work performance perceptions ($p < 0.01$, chi-square test), emphasizing the critical role of system efficiency. Similarly, EHR service was significantly associated with the perception of work performance ($p < 0.05$, Fisher exact test).

DISCUSSION

This study highlights the multifaceted impact of EHR on the work performance of GP in emergency departments. The significant relationships identified between EHR attributes including presentation, information, efficiency, and service quality and work performance underscore the system's integral role in supporting clinical operations. The Cronbach's alpha of 0.924 across variables underscores the reliability of the study's measurements, reinforcing confidence in the validity of these findings. These results are consistent with prior research, which has demonstrated the potential of EHR systems to enhance healthcare delivery when optimally implemented (Mullins et al., 2022; Kalayou et al., 2021).

The clinical benefits of using EHR have been extensively documented in the literature, particularly in terms of improving patient care quality, enhancing safety, and increasing clinical efficiency. King et al. (2014) found that 78% of physicians reported an overall improvement in patient care. EMRs were highlighted as highly beneficial for clinicians, especially in terms of accessibility. Data show that 81% of physicians emphasized the ability to access patient records remotely, thereby supporting more timely and informed decision-making

The presentation of information through EHR systems emerged as a key determinant of work performance. Respondents frequently "agreed" or "strongly agreed" on the system's ability to display laboratory and radiology results quickly and accurately, attributes essential in high-pressure ED environments. These findings support the assertion by Sutton et al. (2020) that well-designed EHR interfaces can significantly enhance the speed and accuracy of clinical decision-making. However, the need for manual retyping of data, particularly in radiological interpretations and laboratory results, suggests persistent inefficiencies. Addressing these issues through automation and interoperability could further optimize workflow and reduce administrative burdens on GPs.

EHR efficiency demonstrated the strongest statistical association with work performance ($p < 0.01$), underscoring its critical importance. While the majority of participants expressed positive views on the system’s adaptability to updates and ease of use for experienced staff, the complexity of onboarding new users emerged as a significant challenge. Nearly half of the respondents rated the training process for new users as "exhausting,". Clemens et al. (2016), identified inadequate training as a primary barrier to successful EHR adoption. Enhancing onboarding programs and simplifying user interfaces could help bridge this gap and ensure broader usability across diverse clinical teams.

Service quality facilitated by EHR systems was another critical factor in improving GP work performance. Rapid access to patient medical records and laboratory results was highly valued, with many respondents highlighting its positive impact on clinical efficiency. However, concerns regarding the system's potential to detract from doctor-patient interactions were noted, with some respondents indicating that EHR use shifted their focus away from patients during consultations. Similar findings were reported by (Evans et al., 2016; Tsai et al., 2020), who emphasized the need for EHR designs that integrate seamlessly into patient consultations without compromising interpersonal communication. Strategies such as voice-enabled data entry or optimized screen layouts could mitigate these challenges and enhance both clinical and relational outcomes.

Reliability issues, including inconsistencies in data saving and accessibility, were notable drawbacks. These challenges reflect broader concerns in the literature about the technical robustness of EHR systems (Geneva et al., 2024). Persistent system errors, such as lost data or inaccessible files, undermine user confidence and pose risks to patient safety. Ensuring high system reliability through rigorous testing, routine updates, and robust IT support systems is essential to fully realize the benefits of EHR technologies in ED settings.

CONCLUSION

The studies substantiates the positive impact of EHR systems on the performance of general practitioners in emergency departments, while also identifying critical areas requiring enhancement, particularly concerning usability and seamless integration into clinical workflows. To build on these findings, future research should prioritize studies with larger and more diverse sample populations to validate the results and examine the long-term outcomes associated with EHR utilization. Additionally, a comprehensive investigation into the socio-technical aspects of EHR implementation, including user training protocols and interdepartmental coordination, is essential to gain deeper insights and optimize the effectiveness of these systems.

REFERENCE

Gediki Ondogan Y, Sargin M, Canoz K. Use of electronic medical records in the digital healthcare system and its role in communication and medical information sharing among healthcare professionals. 2023;42:101373. doi:10.1016/j.imu.2023.101373.

Kementerian Kesehatan Republik Indonesia. Peraturan Menteri Kesehatan Republik Indonesia Nomor 42 Tahun 2022 tentang Rekam Medis. Jakarta: Kementerian Kesehatan RI; 2022.

Perhimpunan Rumah Sakit Seluruh Indonesia (PERSI). Data Rumah Sakit di Indonesia Tahun 2023. Jakarta: PERSI; 2023.

Mullins A, O'Donnell R, Mousa M, Rankin D, Ben-Meir M, Boyd-Skinner C, Skouteris H. Health Outcomes and Healthcare Efficiencies Associated with the Use of Electronic Health Records in Hospital Emergency Departments: a Systematic Review. J Med Syst. 2020 Oct 19;44(12):200. doi: 10.1007/s10916-020-01660-0. PMID: 33078276.

King J, Patel V, Jamoom EW, Furukawa MF. Clinical benefits of electronic health record use: national findings. Health Serv Res. 2014 Feb;49(1 Pt 2):392-404. doi: 10.1111/1475-6773.12135. Epub 2013 Dec 21. PMID: 24359580; PMCID: PMC3925409.

Kalayou MH, Endehabtu BF, Guadie HA, Abebaw Z, Dessie K, Awol SM, Mengestie ND, Yeneneh A, Tilahun B. Physicians' Attitude towards Electronic Medical Record Systems: An Input for Future Implementers. Biomed Res Int. 2021 Aug 28;2021:5523787. doi: 10.1155/2021/5523787. PMID: 34493979; PMCID: PMC8418928.

Campanella P, Lovato E, Marone C, Fallacara L, Mancuso A, Ricciardi W, Specchia ML. The impact of electronic health records on healthcare quality: a systematic review and meta-analysis. Eur J Public Health. 2016 Feb;26(1):60-4. doi: 10.1093/eurpub/ckv122. Epub 2015 Jun 30. PMID: 26136462.

Evans RS. Electronic Health Records: Then, Now, and in the Future. Yearb Med Inform. 2016 May 20;Suppl 1(Suppl 1):S48-61. doi: 10.15265/IYS-2016-s006. PMID: 27199197; PMCID: PMC5171496.

Tsai CH, Eghdam A, Davoody N, Wright G, Flowerday S, Koch S. Effects of Electronic Health Record Implementation and Barriers to Adoption and Use: A Scoping Review and Qualitative Analysis of the Content. Life (Basel). 2020 Dec 4;10(12):327. doi: 10.3390/life10120327. PMID: 33291615; PMCID: PMC7761950.

Sutton RT, Pincock D, Baumgart DC, Sadowski DC, Fedorak RN, Kroeker KI. An overview of clinical decision support systems: benefits, risks, and strategies for success. NPJ Digit Med. 2020 Feb 6;3:17. doi: 10.1038/s41746-020-0221-y. PMID: 32047862; PMCID: PMC7005290.

Kruse, Clemens & Kristof, Caitlin & Jones, Beau & Mitchell, Erica & Martinez, Angelica. (2016). Barriers to Electronic Health Record Adoption: a Systematic Literature Review. Journal of Medical Systems. 40. doi: 10.1007/s10916-016-0628-9.

Igwama, & Olaboye, Janet & Maha, Chukwudi & Ajegbile, Mojeed & Abdul, Samira. (2024). Integrating electronic health records systems across borders Technical challenges and policy solutions. International Medical Science Research Journal. 4. 788-796. doi: 10.51594/imsrj.v4i7.1357.