Implementing an Electronic Patient Safety Incident Reporting System to Improve Healthcare Quality: A Qualitative Implementation Evaluation

Savitri Citra Budi[1], Vintya Meiliana Putri Nugraheni[2], Rita Dian Pratiwi[1], Angga Eko Pramono[1], Nuryati[1], Nik Azliza[3]

[1]Department of Health Services and Information, Vocational College, Universitas Gadjah Mada, Indonesia
[2]Department of Health Policy and Management, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Indonesia
[3]Faculty of Information Science, Universiti Teknologi MARA, Malaysia

*Email correspondence: savitri@ugm.ac.id

Track Record Article

Revised: 27 July 2026
Accepted: 23 September 2026
Published: 28 September 2026

How to cite :
Budi, S. C., Nugraheni, V. M. P., Pratiwi, R. D., Pramono, A. E., Nuryati, & Azliza, N. (2026). Implementing an Electronic Patient Safety Incident Reporting System to Improve Healthcare Quality: A Qualitative Implementation Evaluation. *Contagion : Scientific Periodical of Public Health and Coastal Health*, 8(3), 485–499.

Abstract

Healthcare facilities in Indonesia are required to report patient safety incidents. However, many hospitals continue to face challenges in integrating incident data, conducting systematic analyses, and using incident reports to inform continuous quality improvement initiatives. The Regional General Hospital of Yogyakarta City faces similar challenges because incident reporting and analysis have not been fully integrated within a single system. Therefore, this study aimed to evaluate the implementation of the Patient Safety Incident Reporting (PaSIR) system and explore its contribution to improving incident reporting practices. This study employed a Research and Development (R&D) approach using a User-Centered Design (UCD) methodology. The qualitative evaluation was conducted between January and June 2025. Purposive sampling was used to recruit10 participants, including members of the patient safety team, information technology staff, and public relations personnel. Data were collected through interviews, surveys, document reviews, and focus group discussions (FGDs). Implementation was evaluated using the Consolidated Framework for Implementation Research (CFIR), and data were analyzed thematically using triangulation. Written informed consent was obtained from all participants, and ethical approval was secured prior to the study. Before implementation, incident reporting was fragmented across paper-based forms, Google Forms, and the hospital information system. PaSIR integrated key incident management process, including reporting, validation, root cause analysis, follow-up, and feedback. The findings indicated that PaSIR was user-friendly, responsive to user needs, and provided a more transparent and integrated workflow for incident management. Key factors supporting implementation included staff engagement, regulatory alignment, cross-functional collaboration, and managerial commitment. PaSIR improved the effectiveness of incident reporting, strengthened the patient safety culture, and supported data-driven decision-making. Nevertheless, greater managerial coordination, organizational readiness, user engagement, and ongoing technological integration are needed to ensure sustainable implementation.

Keywords: Patient Safety, Risk Management, User-Centered Design, Quality Improvement, Electronic Health Records

INTRODUCTION

Patient safety is a critical issue and a global priority in healthcare delivery. Healthcare professionals and other staff may be reluctant to report incidents because of concerns that reporting could result in disciplinary action, including job loss. Despite the risks associated with underreporting medical errors that may cause serious patient harm, some healthcare institutions continue to maintain punitive policies and cultures that discourage open reporting (Damschroder et al., 2024). Patient safety incidents can have substantial consequences for

patients, undermine public trust in healthcare systems, and increase healthcare costs through prolonged hospital stays and additional treatment requirements (Dhamanti et al., 2023). Globally, patient safety incident reporting and learning systems have been implemented in approximately 70% of countries, however, their effectiveness remains limited. Only about one-third of countries report active participation by the majority of healthcare facilities. Furthermore, approximately one-third of countries have aligned their incident-reporting systems with the World Health Organization (WHO) Minimum Information Model (World Health Organisation, 2024). The number of incident reports has increased annually, with trends from 2020 to 2024 showing that incidents consistently accounted for approximately 96% of all reported events, whereas serious events represented approximately 3% to 4%. The proportion of serious adverse events represented from3% in 2020 to 4.1% in 2023 before slightly declining to 4% in 2024. These findings suggest a relatively stable reporting distribution, accompanied by a modest increase in the proportion of serious events over time (Kepner & Jones, 2025).

In Indonesia, healthcare facilities are required to collect and report performance data related to incident reporting and other quality-monitoring activities (Ministry of Health of the Republic of Indonesia, 2017). These policies play an important role in improving healthcare services, as the quality of care is reflected in patient satisfaction and the incidence of adverse events. Incident reporting serves both as a patient safety tool and as a learning mechanism to prevent the recurrence of incidents within healthcare settings (Augustine, 2024). Hospitals can use incident reports to identify the causes of incidents, uncover underlying system weaknesses, and implement preventive strategies to enhance patient safety (Coronato & Cuzzocrea, 2022). However, the effectiveness of incident reporting systems is influenced by multiple factors, including organizational governance, data quality and availability, patient safety culture, and the adequacy of information technology support (Hibbert et al., 2023).

According to the preliminary evaluation, several limitations remain in the implementation of incident reporting systems in healthcare practice. Most published studies have focused on either established reporting systems or conceptual models, highlighting a persistent gap between system development and real-world implementation in healthcare settings. Empirical evidence regarding implementation strategies, adaptation processes, and post-implementation evaluations of incident reporting systems developed in one institution and applied in healthcare environments with different organizational characteristics remains limited. This gap suggests the need for further study to understand adaptation and implementation of the Patient Safety Incident Reporting (PaSIR) system, including the consideration of human resources, organizational culture, and governance, as well as specific

characteristics. From an operational perspective, PaSIR is not similar to traditional or fragmented reporting systems. This integrated electronic platform allows real-time incident reporting, automated Root Cause Analysis (RCA) documentation, feedback mechanisms, and mapping of incident profiles.

The incident reporting system has been established in Yogyakarta City Regional General Hospital. However, preliminary observations and interviews indicate that the system is not functioning optimally. The primary challenge is the lack of integration accross the reporting process. To address these issues, the hospital plans to adopt PaSIR, an incident management system that has previously been developed and implemented in other healthcare facilities.

The novelty of this study lies in its systematic examination of quality improvement and patient safety initiatives through the implementation, adaptation, and contextualiation of the PaSIR system at Yogyakarta City Regional General Hospital. The study offers both practical and empirical contributions by systematically identifying and analying the stages involved in adapting an electronic incident reporting (eIR) system to the operational conditions and specific needs of a regional public hospital. The findings are expected to serve as best-practice model for other hospitals seeking to implement health information technology (IT) systems to enhance quality and patient safety.

The research question addressed in this study is “What is the process of developing and adapting a patient safety incident reporting system to meet the needs and workflows of users within the context of an Indonesian hospital?” User-Centered Design (UCD) was selected to guide the iterative development and adaptation of the system based on users’ needs and workflow requirements. Meanwhile, Consolidated Framework for Implementation Research (CFIR) was used to systematically examine contextual and organizational determinants of implementation, thereby addressing both system–user fit and the broader implementation context.

METHODS

Types of Study and Data Collection Techniques

This study adopted a Research and Development (R&D) design as the primary approach to develop and refine the system through systematic procedures (Gregório et al., 2021). Additionally, a User-Centered Design (UCD) approach was incorporated to ensure that the system design was in line with the users' needs and operations (Lyon et al., 2025). The

Consolidated Framework for Implementation Research (CFIR) was used to tackle the organizational and contextual issues impacting the implementation (Kepner & Jones, 2025).

Semi-structured interviews, analysis of documents, surveys, and focus group discussions (FGDs) were used to gather data. To protect the confidentiality of patient safety incident data and to meet hospital data protection regulations, PaSIR was subjected to pre-implementation testing using simulated (dummy) cases of incidents. These simulated cases were used to rehearse the whole incident-reporting workflow, allowing the evaluation of the functionality and completeness of the system module before putting into service with real incident data.

Study Data Analysis Process and Ethical Statement

A CFIR-based coding framework was used to undertake thematic analysis, with codes being iteratively revised during analysis. Trustworthiness was ensured using credibility, confirmability, and data triangulation, peer debriefing, contextual description, detailed documentation of coding and analytic decisions, as well as an audit trail.

This study received permission from the institutional ethics committee (No. 35/KEPK/RSUD/IV/2025), and written informed consent was obtained from all respondents. Security measures included authenticated, role-based access, database encryption, audit trails, and regular data backups to safeguard the confidentiality of patient safety incident data. The study data set did not include personally identifiable information, and results were shared in aggregated or de-identified formats to safeguard the confidentiality of patients, reporters, and healthcare personnel.

RESULTS

Reporting of Patient Safety Incidents at Yogyakarta City Regional General Hospital

Healthcare professionals, hospital staff, and others may be able to report patient safety incidents in the hospital through three flexible mechanisms. Firstly, manual reporting requires forms to be filled in to report incidents, according to government requirements. This approach has disadvantages, including disjointed reporting and the absence of data integration, traceability, and continuity in the management of incidents, which increases the difficulty of analyzing incidents and improving quality at the right time.

Secondly, there is digital reporting using Google Forms, where authorized staff can enter incident data by providing a link on devices. This mechanism is an electronic form of the manual reporting form. Google Forms can be used for incident reporting but lacks integrated workflows for validation, analysis, follow-up, and feedback. This limits data traceability and

the sustainability of incident management.

Third, reporting takes place through the hospital information system by entering incident data in a feature of the electronic medical record application. This mechanism allows documentation by healthcare professionals directly concerned with the care of the patient, and reports incidents during the provision of healthcare services. The implementation of incident reporting systems has led to some problems. These include variation in reporting data, causing wrong format submissions, documentation issues, and duplicate reports of the same incident. In some instances, incidents also may not be reported because staff assume that another staff member has already reported the information. This situation has given rise to an integrated incident reporting system to cater to the needs of reporting and Incident report management.

Figure 2. Strategy to Increase Incident Reports at Yogyakarta City Hospital

Development of the Incident Reporting System at Yogyakarta City Regional General Hospital

Yogyakarta City Regional General Hospital came up with a strategy to enhance the patient safety incident reporting system, including strengthening IT infrastructure, training and education, and implementing the organizational culture-based approach. The PaSIR system has been implemented to strengthen IT infrastructure, which was designed to meet hospital operational needs. Each member of the hospital staff can report incidents and provide feedback. Ward or unit heads are supervisors who report, validate, and analyze incidents.

The patient safety team will document incidents, conduct a hospital-level RCA, report to the hospital leadership, and make recommendations for corrective action. Hospital

leadership can review analysis results and provide feedback through corrective action and incident reporting. The system administrator has to deal with user data, support the reporting process, and monitor the running of PaSIR components.

A system adaptation process included the IT staff, patient safety team, and the hospital's legal and organizational departments. The IT department dealt with the technical viability and readiness of the system to be implemented. The patient safety team provided feedback on the reporting process and requirements in line with patient safety practice. The legal and organizational units showed that the implementation of the system was in accordance with the laws, regulations, and institutional policies in place.

The quality and quantity improvements for incident reports at the Yogyakarta City Regional General Hospital comprise three key points, namely strengthening the IT infrastructure, enhancing team participation, and facilitating an organizational culture of reporting. A major part of the patient safety team's role in the socialization of the system is to promote staff discipline, honesty, and openness in reporting, as well as to report staff accountability. This is to instill confidence that the reporting system is designed to help them learn and improve, and not to be punished.

Challenges of Implementing PaSIR System

At the beginning of PaSIR system in Yogyakarta City Regional General Hospital, there were some technical and non-technical challenges. Testing was performed with simulated data, and the system's ability to handle complex, dynamic, high-volume patient data was not fully tested. Technical changes were also needed to ensure efficient data exchange and consistency, especially when integrating PaSIR with the existing hospital systems, such as the Electronic Health Record (EHR) system.

From a non-technical perspective, the change in the verifier's role from the Head of the Installation to the Direct Supervisor required adjustments in human resources, workflows, and reporting procedures. Moreover, a comprehensive evaluation of the implementation dynamics in all hospitals and the potential for sustainable implementation was not possible because the system was at an early stage of development and implementation.

Evaluation of Incident Reporting Improvement Across CFIR Domains

The characteristics of the stakeholders included in the incident reporting process are presented in Table 1. CFIR was used to assess the improvements in practices for reporting incidents after the implementation of PaSIR system.

Table 1. Characteristics of Respondents

Profession	Number of Respondents (N)	Age Range (years)
Physician	1	45
Nurse	6	35 – 56
IT Staff	1	38
Other Professions	2	32 – 43
Total	10	32 - 56

Results from the evaluation of the improvement in incident reporting after implementation of the PaSIR system are shown in Figure 3 on the basis of CFIR framework. The visualization combines the perception of the respondents to show the interaction between intervention characteristics, the external environment, the internal organizational context, individual characteristics, and the implementation process.

These inter-related domains show the contribution of technological, organizational, and behavioral aspects to the effectiveness of incident reporting. The results also report the importance of hospital management to coordinate the components, promote adoption, engage staff, and help facilitate a supportive safety culture to enhance the quality, consistency, and sustainability of patient safety incident reporting.

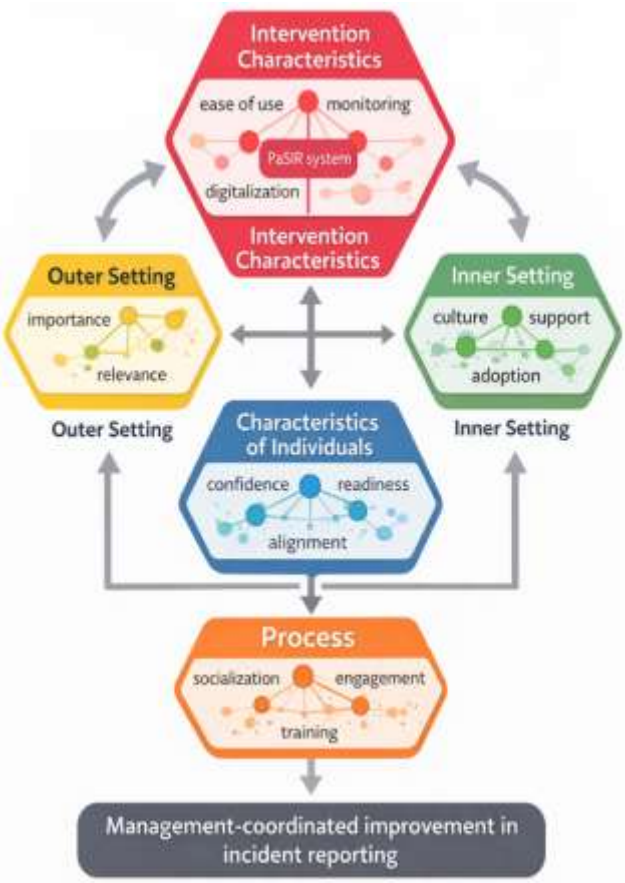

Figure 3. CFIR-Based Evaluation of Incident Reporting Improvement Using PaSIR

The constructs and survey items used to probe the perceptions were mapped to CFIR domains as outlined in Table 2. Regarding the "Intervention Characteristics" domain, the results of the evaluations show that PaSIR possesses relative advantages over the old reporting system. The respondents from the patient safety and nursing teams indicated that the system is user-friendly, helps with digital reporting, and has the capacity to monitor the follow-up process of incidents.

The results suggest that the management approach to creating a technology-based reporting system fits with user needs and the actual service workflow. The Outer Setting domain was seen as pertinent and significant to the incident reporting needs of the hospital. This is because the perception is in line with the need of the outside world for real-time reporting and transparency in the digital age. The evaluation suggests that the organizational environment for open and active reporting of incidents is favorable in the Inner Setting domain. Patient safety culture and institutional support were found to be important factors in facilitating adoption.

Respondents were very confident and ready to use the system independently based on the evaluation of the Characteristics of Individuals domain. The consistency of the system with standard operating procedures (SOPs) and the clarity of the workflow had an impact on confidence.

An informant expressed readiness by stating, *"The application has an easy-to-understand workflow... I believe that is something that the hospital community as a whole believes is a cornerstone of healthcare services"* (Informant, Other). Therefore, the system has high congruence with the internal goals of the organization.

Table 2. CFIR of PaSIR System

Domain	Question
Intervention Characteristics	1. How easy is the PaSIR system to use compared to the previous incident reporting system? 2. What is your opinion on the ease and usefulness of using PaSIR as compared to the old system for reporting incidents?
Outer Setting	1. How do you think the introduction of PaSIR system meets the key needs of the hospital for patient safety reporting? 2. What is your impression of the significance of the implementation of the PaSIR system to fulfil the needs of patient safety incident reporting at the Yogyakarta City Regional General Hospital?
Inner Setting	1. How do your work conditions promote and facilitate open, proactive reporting of incidents? 2. What is the extent to which your readiness to adopt and use the PaSIR system is affected by your organizational culture, team communication, and

Domain	Question
	institutional support?
Characteristics of Individuals	1. How comfortable and confident are you in being able to use the PaSIR system on your own? 2. What are the factors that influence your confidence to use PaSIR system independently and consistently in your work?
Process	1. How clear, adequate, and useful do you find socialization and training given in the PaSIR system? 2. What are your thoughts on the process of socialization and participation of staff in introducing PaSIR system, and what can be carried out to make this better?

In the Process domain, the evaluation showed that system socialization and staff engagement were effectively carried out during the implementation of PaSIR. Stakeholders' active participation in introducing and using the system led to effective engagement. Respondents accepted the implementation efforts, but spoke of the need for ongoing support. An informant from the IT staff suggested that the system could be improved by allowing users to experience all the features while receiving in-person support. This feedback shows the importance of facilitating the implementation stage. To maintain sustainability, a process of continuous reflection and evaluation is necessary, as well as active management participation with continuous communication, user support, and monitoring.

DISCUSSION

Reporting of Patient Safety Incident at Yogyakarta City Regional General Hospital

Effective reporting of patient safety incidents requires consideration of multiple factors. Reporting systems should be accessible, flexible, and well integrated into organizational processes. Incident management should also be documented in a streamlined manner, with clearly defined timelines, coordination mechanisms, communication pathways, and accountability structures (Santos et al., 2025). These implementation challenges were evident in the findings from the Regional General Hospital of Yogyakarta. Prior to the implementation of PaSIR, the hospital used three separate reporting systems: manual reporting forms, Google Forms, and a reporting module within the hospital information system. The availability of multiple reporting channels reflects an intervention characteristic captured within the Characteristics of Intervention domain of the Consolidated Framework for Implementation Research (CFIR). However, this flexibility was not accompanied by functional integration, resulting in fragmented data and disconnected workflows. A critical constraint was the lack of coordination among the reporting, validation, analysis, follow-up, and monitoring processes. Similar challenges have been reported in other low- and middle-income countries

(LMICs) where fear of blame, inadequate feedback mechanisms, hierarchical organizational cultures, and limitations in health information infrastructure hinder effective patient safety incident reporting (Id & Mkhize, 2024).

CFIR framework supports adaptation since the concept pertains to the need for intervention to be compatible with the work practices and organization. The Inner Setting domain provides an explanation for the result. Validation was delegated to the unit heads because of the proximity to service delivery and the circumstances surrounding reported incidents.

The implementation of PaSIR is a socio-technical adaptation process in the Characteristics of Intervention, Inner Setting, and Process domains of CFIR. The key contribution is the shift from a disjointed approach to incident reporting toward an integrated management model that connects reporting with validation, root cause analysis, corrective action, feedback, and monitoring. The results show that digital incident reporting can only be effective when there is a fit between the intervention and the organizational context. This describes the appropriate readiness of the internal environment and the capability of key stakeholders to manage implementation as an organizational learning and safety process.

Strategy to Increase Incident Reports at Yogyakarta City Regional General Hospital

Investing in IT infrastructure is a key means of enhancing the effectiveness of patient safety incident reporting and management. Reporting systems should be designed, created, and include appropriate groups from various unit areas of the hospital for operational needs and sustainable implementation. There is a significant patient safety issue with underreporting (Budi et al., 2022). System evaluation must be carried out regularly, and awareness of reporting among healthcare workers needs to be increased.

The modified PaSIR system improves the process by combining incident reporting and follow-up actions. Supervisors and persons charged with the units were directly assigned the corrective actions identified through incident analysis. The reporting system forms part of an ongoing quality improvement process including incident identification, analysis of underlying causes, implementation of preventive measures, and subsequent monitoring. Technological advancements can augment these functions, as reported in the use of artificial intelligence (AI) to increase patient safety, operational efficiency, and diagnostic precision (AlDhaen, 2025). Therefore, IT infrastructure should be considered as a method of digitizing administration and the capacity to detect, analyze, respond to, and prevent patient safety incidents within the organization.

Leadership support is among the basic requirements for improving patient safety

systems. This support should be provided with electronic reporting systems that work to document incidents and support organizational learning. Integrated systems enable incident data to be systematically analyzed and used to develop organizational learning (Amany Farag et al., 2020).

Full commitment to implementation is essential to make sure there is consistency in the methodology, accountability, and a safety culture (Anemaat et al., 2025). A relevant mechanism is critical incident debriefing, which helps staff to reconstruct events, analyze experiences, as well as gain lessons and support after incidents. Debriefing can follow a multi-stage approach, with an initial session addressing pressing issues, structured follow-up sessions supporting in-depth reflection, and facilitator training strengthening the capacity (Porteous et al., 2025). These processes show that PaSIR is an administrative reporting tool and a forum for collective learning.

Socio-technical factors such as continuous improvement, safety culture, leadership commitment, communication, error prevention and correction, incident reporting, and closed-loop feedback are known to affect effective error management in Health Information Systems (HIS) (Yusof et al., 2024). In line with the National Health Service (NHS) approach, strategies to enhance reporting include the use of simplified reporting forms, real-time monitoring and tracking, and team meetings to improve communication and accountability (Santos et al., 2025). Willingness and intention also play a part in reporting behavior, which can be seen in attitudes, subjective norms, and perceived behavioral control (Ahola et al., 2025). Therefore, a change in organizational culture is needed to view incident reporting as a learning and improvement process.

Challenges of Implementing PaSIR System at Yogyakarta City Regional General Hospital

Challenges to implementation of PaSIR revolve around user adoption, procedural clarity, organizational support, and workload. Clear and consistent organizational policies can help to reinforce user acceptance. For some professionals, incident reporting is seen as an extra burden in the administration of health care with direct benefit to the care of patients. Therefore, the successful realization of the implementation process needs to be based on collaboration among several stakeholders.

Practical barriers include lack of clarity on the process and location in which incidents should be reported, and lack of support post-reporting (Dhamanti et al., 2020). These measures are particularly relevant to near-miss reporting, as staff members may perceive incidents without patient harm as less urgent. Reporting may be perceived as additional documentation

that competes with time for direct patient care, reducing the potential contribution to organizational learning and prevention (Braiki et al., 2024). Pressure and workload can also rise for staff as users change work patterns in adjusting to new systems (Newton et al., 2025). Therefore, the implementation of PaSIR should be regarded as a change process, which should be managed through a proper procedure, including the users, supported by leadership, and managed in terms of workload.

Evaluation of Incident Reporting Improvement Across CFIR Domains

CFIR offers a framework to consider factors that support or impede implementation. This framework is divided into five domains, namely Intervention characteristics, outer setting, inner setting, characteristics of individuals, and implementation process (Damschroder et al., 2024). For the evaluation of the adapted PaSIR system, open-ended questions were used to elicit users' experiences and perceptions. The co-occurrence analysis of qualitative data was used to determine relationships between concepts and themes mentioned by the respondents (Narong & Hallinger, 2023). CFIR-based evaluation shows that the relative advantage of the intervention, external requirements, organizational support, individual readiness, and intervention implementation processes are factors affecting improvement in the implementation of incident reporting. PaSIR offers relative advantages due to the active participation of the staff, management, and IT personnel, as well as legislative adjustment of the data content and work context adaptation in the hospital. An intuitive interface and workflow are supported through the use of UCD (Amanda & Putri, 2024).

In the Outer Setting, there are regulations that necessitate monitoring patient safety and reporting the foundation for implementation. Organizational readiness, commitment to a non-punitive culture, and a supportive work environment are key elements of change in the Inner Setting. Evidence-based practices (EBP) are adopted when supported by a positive learning culture and organizational climate (Damschroder et al., 2024). Therefore, the implementation of PaSIR is influenced by the interplay between technological benefits, legal mandates, organizational factors, individual willingness, and organized implementation actions.

CONCLUSIONS

In conclusion, Yogyakarta City Regional General Hospital (RSKUD) previously experienced suboptimal patient safety incident reporting due to the lack of system integration. The PaSIR system was developed and implemented to establish a more streamlined and standardized reporting process. Key factors facilitating implementation included fostering a

non-punitive safety culture, strengthening information technology infrastructure, and enhancing interprofessional collaboration. However, integration with the electronic medical record (EMR) system and users' adaptation to the new workflow presented notable challenges during the implementation process. An assessment of PaSIR implementation using the Consolidated Framework for Implementation Research (CFIR) demonstrated that successful implementation depended not only on the quality of the technology but also on the management's ability to align organizational readiness, implementation coordination, and individual engagement to improve patient safety.

REFERENCES

Ahola, K., Butavicius, M., McCormac, A., & Sturman, D. (2025). Hey "CSIRI", should I report this? Investigating the factors that influence employees to report cyber security incidents in the workplace. Information and Computer Security, 33(2), 242–266. https://doi.org/10.1108/ICS-11-2023-0214

AlDhaen, F. S. (2025). AI-Powered Transformation of Healthcare: Enhancing Patient Safety Through AI Interventions with the Mediating Role of Operational Efficiency and Moderating Role of Digital Competence—Insights from the Gulf Cooperation Council Region. Healthcare (Switzerland), 13(6). https://doi.org/10.3390/healthcare13060614

Amanda, R. T., & Putri, R. A. (2024). Application of User-Centered Design Method in E-Commerce Sales System. Sistemasi, 13(3), 1295. https://doi.org/10.32520/stmsi.v13i3.4145

Amany Farag, Vogelsmeier, A., Knox, K., Perkhounkova, Y., & Burant, C. (2020). Predictors of Nursing Home Nurses' Willingness to Report Medication Near-Misses. Journal of Gerontological Nursing, 46(4), 23–30. https://doi.org/10.3928/00989134-20200303-03

Anemaat, L., Copland, D. A., Palmer, V. J., & Wallace, S. J. (2025). Co-Designing Aphasia Services: Evaluation of Involvement and Processes to Support Inclusion of People With Post Stroke Aphasia. Health Expectations, 28(4). https://doi.org/10.1111/hex.70372

Augustine, L. (2024). Investigating Electronic Incident Reporting Systems and Its Role Within Healthcare to Improve Patient Safety: An Integrative Literature Review. International Journal of Business Administration, 15(2), 26051–26051. https://doi.org/10.5430/ijba.v15n2p82

Braiki, R., Douville, F., & Gagnon, M.-P. (2024). Factors influencing the reporting of medication errors and near misses among nurses: A systematic mixed methods review. International Journal of Nursing Practice, 30(6), e13299. https://doi.org/10.1111/ijn.13299

Budi, S. C., Suartini, Lazuardi, L., & Dewi, F. S. T. (2019). Information Systems and Patient Safety Incident Reports : A Systematic Review of Literature and Observational Incident Reporting System in Hospitals. May, 807–814. https://www.ijrte.org/download/volume-8-issue-1c2/

Budi, S. C., Sunartini, Lazuardi, L., & Tetra, F. S. (2019). Incident Trends Based on Patient Safety Goals. Journal of Health Management and Information, 7(2), 141–146. https://doi.org/10.33560/jmiki.v7i2.236

Budi, S. C., Sunartini, S., Dewi, F. S. T., Lazuardi, L., & Rokhman, N. (2022). Incident Reporting Development: PaSIR (Patient Safety Incident Reporting) System for Better Patient Safety. Jurnal Aisyah : Jurnal Ilmu Kesehatan, 7(4). https://doi.org/10.30604/jika.v7i4.1287

Coronato, A., & Cuzzocrea, A. (2022). An Innovative Risk Assessment Methodology for Medical Information Systems. IEEE Transactions on Knowledge and Data Engineering, 34(7), 3095–3110. https://doi.org/10.1109/TKDE.2020.3023553

Damschroder, L. J., Reardon, C. M., Widerquist, M. A. O., & Lowery, J. (2024). The updated Consolidated Framework for Implementation Research based on user feedback. Implementation Science, 0, 1–16. https://doi.org/10.1186/s13012-022-01245-0

Dhamanti, I., Juliasih, N. N., Semita, I. N., Zakaria, N., Guo, H. R., & Sholikhah, V. (2023). Health Workers' Perspective on Patient Safety Incident Disclosure in Indonesian Hospitals: A Mixed-Methods Study. Journal of Multidisciplinary Healthcare, 16, 1337–1348. https://doi.org/10.2147/JMDH.S412327

Dhamanti, I., Leggat, S., & Barraclough, S. (2020). Practical and Cultural Barriers to Reporting Incidents Among Health Workers in Indonesian Public Hospitals. Journal of Multidisciplinary Healthcare, 13, 351–359. https://doi.org/10.2147/JMDH.S240124

Gregório, J., Reis, L., Peyroteo, M., Maia, M., Mira da Silva, M., & Lapão, L. V. (2021). The role of Design Science Research Methodology in developing pharmacy eHealth services. Research in Social and Administrative Pharmacy, 17(12), 2089–2096. https://doi.org/10.1016/J.SAPHARM.2021.05.016

Hibbert, P. D., Stewart, S., Wiles, L. K., Braithwaite, J., Runciman, W. B., & Thomas, M. J. W. (2023). Improving patient safety governance and systems through learning from successes and failures: qualitative surveys and interviews with international experts. International Journal for Quality in Health Care, 35(4), 1–11. https://doi.org/10.1093/intqhc/mzad088

Id, T. M. H. G., & Mkhize, S. W. (2024). Barriers to implementing patient safety incident reporting and learning guidelines in specialised care units , KwaZulu-Natal : A qualitative study. 1–16. https://doi.org/10.1371/journal.pone.0289857

Kepner, S., & Jones, R. (2025). Patient Safety Trends in 2024: An Analysis of 315,418 Serious Events and Incidents From the Nation's Largest Event Reporting Database. Patient Safety, 7(2). https://doi.org/10.33940/001c.133876

Lyon, A. R., Aung, T., Bruzios, K. E., & Munson, S. (2025). Human-Centered Design to Enhance Implementation and Impact in Health. Annual Review of Public Health, 46(1), 467–485. https://doi.org/10.1146/ANNUREV-PUBLHEALTH-071823-122337/CITE/REFWORKS

Ministry of Health of the Republic of Indonesia. (2017). Regulation of the Minister of Health of the Republic of Indonesia Number 11 of 2017 concerning Patient Safety.

Narong, D. K., & Hallinger, P. (2023). A Keyword Co-Occurrence Analysis of Research on Service Learning: Conceptual Foci and Emerging Research Trends. In Education Sciences, 13(4).

Newton, N., Bamgboje-Ayodele, A., Forsyth, R., Bruce, L., McPhail, S. M., Shaw, T., Naicker, S., Tariq, A., & Baysari, M. T. (2025). Opportunities and Challenges Associated with the Pilot Implementation of Clinical Decision Support Systems in a Rural Hospital: A Qualitative Study. Applied Clinical Informatics, 16(4), 777–785. https://doi.org/10.1055/a-2581-6236

Porteous, K. Y., Robertson, C., & Lafferty, A. (2025). Perioperative practitioners' experiences of critical incident debriefing: A qualitative explorative study. Journal of Perioperative Practice. https://doi.org/10.1177/17504589241293340

Santos, C., Ajayi-Obe, A., & Aurelio, M. (2025). Using Quality Improvement to improve serious incident reporting in the English NHS. BMJ Open Quality, 14(3). https://doi.org/10.1136/bmjoq-2024-003234

World Health Organization. (2024). Global Patient Safety Report 2024. In World Health Organization (Vol. 1, Issue 1).

Yusof, M. M., Takeda, T., Shimai, Y., Mihara, N., & Matsumura, Y. (2024). Evaluating health information systems-related errors using the human, organization, process, technology-fit (HOPT-fit) framework. Health Informatics Journal, 30(2). https://doi.org/10.1177/14604582241252763