Risk Analysis Using the Enterprise Risk Management (ERM) Method in the Implementation of Standard Inpatient Class at Sultan Agung Islamic Hospital

Ayu Sekar Melati[1], Sutopo Patria Jati[1], Septo Pawelas Ars[1]

[1]Master of Public Health, Faculty of Public Health. Universitas Diponegoro, Jl. Prof. Soedarto, Tembalang, Semarang, Central Java 50275, Indonesia

Email correspondence : sekarayu.dr@gmail.com

Track Record Article

Revised: 08 January 2026
Accepted: 20 March 2026
Published: 30 March 2026

How to cite:
Melati, A. S., Jati, S. P., & Ars, S. P. (2026). Risk Analysis Using the Enterprise Risk Management (ERM) Method in the Implementation of Standard Inpatient Class at Sultan Agung Islamic Hospital. *Contagion: Scientific Periodical Journal of Public Health and Coastal Health*, *8*(1), 633–646.

Abstract

The implementation of the Standardized Inpatient Class (KRIS) is a national strategic policy aimed at improving equity and quality of care for participants of Indonesia's National Health Insurance (JKN). However, the transition toward standardized inpatient facilities may generate complex operational, patient safety, and financial risks that extend beyond technical compliance. An Enterprise Risk Management (ERM) approach is therefore required to comprehensively identify and manage these cross-domain risks, which have been insufficiently explored in previous KRIS-related studies. This study aims to identify the risk profile and formulate mitigation strategies for KRIS implementation using an ERM framework. A mixed-methods sequential explanatory design was applied, consisting of a quantitative survey of 30 inpatient unit heads followed by qualitative in-depth interviews and Focus Group Discussions (FGD) with hospital management. Quantitative data were analyzed using descriptive statistics and a 5×5 risk matrix, while qualitative data were analyzed through thematic content analysis. The results identified three highest-priority risks: changes in service flow due to renovation (mean 18.3), reduced bed capacity during the transition period (17.9), and increased cross-infection risk due to crowding in temporary inpatient rooms (17.4). Financial risks, human resource readiness, regulatory uncertainty, and information system limitations were predominantly categorized as moderate to high. Integrated findings emphasize the importance of structured change management, strengthened infection prevention, comprehensive financial planning, and improved staff readiness supported by adequate information systems. In conclusion, KRIS implementation requires a systematic and integrated risk management approach to ensure effective, safe, and sustainable hospital service transformation.

Keywords: Enterprise Risk Management, KRIS Implementation, Hospital Risk Assessment, Patient Safety, Health Policy Transition.

INTRODUCTION

Implementation of the Standardized Inpatient Class (Kelas Rawat Inap Standar, KRIS) represents a major transformation in Indonesia's hospital service delivery system under the National Health Insurance (Jaminan Kesehatan Nasional, JKN) program. As part of the broader mandate of the National Social Security System (Sistem Jaminan Sosial Nasional, SJSN), KRIS is designed to standardize inpatient services to ensure equity and minimum service quality across healthcare facilities. This policy reflects the government's commitment to fulfilling the constitutional right to healthcare and achieving Universal Health Coverage

(UHC), particularly in reducing disparities in access and quality of inpatient care (Mahendradhata et al., 2017; Ministry of Health, 2020; World Health Organization, 2019).

From a global perspective, standardization of hospital services is commonly implemented alongside health financing reforms, such as diagnosis-related group (DRG)–based payment systems in both high-income countries and low- and middle-income countries (LMICs). These reforms have been shown to improve efficiency and transparency; however, they also introduce significant transitional risks, including financial strain, service disruption, workforce challenges, and potential threats to patient safety (Barber et al., 2019; Busse et al., 2011). In Asian and LMIC contexts, these risks are often amplified by resource limitations and variations in institutional capacity, highlighting the importance of organizational readiness and adaptive management strategies.

In Indonesia, the implementation of KRIS has been formally mandated through Presidential Regulation No. 59 of 2024, which requires all hospitals to comply by June 30, 2025. This policy introduces substantial operational implications, including adjustments in bed capacity, redesign of service flow, and infrastructure investment. While initial pilot studies suggest limited impact on hospital revenue and patient satisfaction, the transition poses greater challenges for private hospitals due to financial constraints, reliance on JKN reimbursement, and competitive service dynamics (Kemenkes RI, 2023). These conditions indicate that KRIS implementation is not merely a technical adjustment but a complex organizational transformation affecting multiple aspects of hospital operations.

Recent studies on KRIS and inpatient service standardization primarily focus on technical readiness and compliance with the 12 KRIS criteria. Findings from these studies highlight key challenges such as infrastructure limitations, the need for facility renovation, and differing stakeholder perceptions regarding implementation feasibility (Puspitasari & Handayani, 2022; Siregar et al., 2022). However, broader evidence from healthcare management literature suggests that large-scale policy transitions often involve interconnected risks across strategic, financial, operational, and patient safety domains (Levy et al., 2019). Despite this, existing research on KRIS remains limited in addressing these multidimensional risks in an integrated manner.

A review of recent literature (within the last five years) indicates that hospital transformation policies frequently encounter gaps in risk identification and prioritization, particularly in developing countries where institutional capacity varies significantly. Most studies emphasize compliance and infrastructure readiness but provide limited analysis of how hospitals manage uncertainty, financial exposure, and service continuity during policy

transitions. This gap underscores the need for a more comprehensive analytical framework that can capture cross-domain risks and support evidence-based decision-making.

The Enterprise Risk Management (ERM) framework offers a systematic approach to identifying, assessing, and managing risks across organizational domains, including strategic, operational, financial, human resources, regulatory compliance, and patient safety (COSO, 2017). In healthcare settings, ERM has been recognized as a critical tool to enhance organizational resilience, particularly during periods of systemic change, by enabling proactive risk mitigation and integrated governance (Levy et al., 2019). However, empirical application of ERM in the context of national health policy implementation, such as KRIS in Indonesia, remains limited.

Based on these considerations, the research problem in this study is how hospitals can comprehensively identify, assess, and manage risks arising from KRIS implementation within an integrated framework. Therefore, this study aims to analyze the risk profile and develop mitigation strategies for KRIS implementation using an Enterprise Risk Management approach. This study is expected to provide empirical insights into cross-domain risks and contribute to strengthening hospital management strategies in navigating large-scale health policy transitions in Indonesia.

METHODS

This study employed a mixed-methods sequential explanatory design, integrating quantitative and qualitative approaches in a sequential manner. This design was selected to enable systematic risk identification and prioritization through quantitative assessment, followed by in-depth qualitative exploration to contextualize the findings, identify underlying risk factors, and formulate feasible mitigation strategies.

The study was guided by the Enterprise Risk Management (ERM) framework based on the COSO ERM Framework (COSO, 2017), which emphasizes integrated risk management across strategic, operational, financial, compliance, and reporting domains. This framework was applied throughout all stages of the study, including risk identification, risk analysis and evaluation, and risk response formulation in the implementation of the Standardized Inpatient Class (KRIS).

Study Setting

The study was conducted in a private general hospital established in 1971. The hospital provides inpatient services with a wide range of class variations, from Class III to President Suite, managed under principles of efficiency and equity in service delivery.

Prior to the implementation of the Standardized Inpatient Class (KRIS), the hospital had a total capacity of 400 beds. However, during the transition toward KRIS compliance, the hospital underwent capacity restructuring, resulting in a reduction to 350 beds. In accordance with National Health Insurance (JKN) policy, private hospitals are required to allocate at least 40% of their total inpatient bed capacity to KRIS. This requirement represents a significant structural adjustment in hospital operations.

The reduction in bed capacity, combined with the mandatory allocation for KRIS, has direct implications for hospital capacity management and operational sustainability. In 2024, the hospital reported a Bed Occupancy Rate (BOR) of approximately 69%, indicating relatively high utilization prior to the KRIS transition. Therefore, capacity reduction poses potential challenges in maintaining service performance indicators, including bed availability, patient flow, and service efficiency.

From an organizational perspective, these changes introduce substantial cross-domain risks, including operational disruption, financial pressure, and potential impacts on patient satisfaction. As a result, the hospital is required to adopt adaptive and defensive strategies based on systematic risk analysis to maintain service performance and organizational sustainability.

Given these characteristics, the hospital provides a relevant and strategic setting for examining the implementation of KRIS within a private hospital context. The ongoing transition toward KRIS compliance, combined with operational complexity and capacity adjustments, makes this setting appropriate for analyzing risk management practices using an Enterprise Risk Management (ERM) approach in Indonesia.

Quantitative Phase

Population, Sample, and Sampling Technique

The quantitative phase targeted all inpatient unit leaders directly involved in KRIS planning and implementation. A total of 30 respondents participated, consisting of 15 inpatient ward heads and 15 senior nurse team leaders. A census approach was applied, as the number of eligible inpatient unit leaders was limited and all met the study inclusion criteria. Therefore, the sample was considered representative of all inpatient units within the hospital and reflective of relevant managerial perspectives on KRIS implementation. The inclusion criteria were: (1) holding a position as ward head or senior nurse team leader, (2) direct involvement in inpatient service management, and (3) a minimum of one year of experience in the current role. Individuals on extended leave or not involved in KRIS implementation were excluded.

Instrument and Measurement

Data were collected using a structured questionnaire developed based on ERM domains, including strategic, operational, patient safety, financial, human resources, regulatory, information technology, and hazard risks. The instrument consisted of 19 risk items assessed using a 5-point Likert scale to measure impact (*severity*) and probability (*likelihood*). Risk scores were calculated by multiplying severity and likelihood scores and categorized as low (1–5), moderate (6–12), or high (13–25). A 5×5 risk matrix was used to visualize and rank priority risks.

Validity and Reliability

Content validity was assessed through expert judgement by a hospital management specialist to ensure alignment with the ERM framework and relevance to KRIS implementation. Empirical validity testing was conducted on 30 respondents from hospitals of similar type that were preparing for KRIS implementation. Corrected item–total correlation was used with a threshold of > 0.30 and a significance level of $p < 0.05$, and all items met the validity criteria. Reliability testing using Cronbach's alpha yielded a coefficient of 0.666, indicating an acceptable level of internal consistency for an exploratory study. Given the relatively small sample size, this quantitative phase is positioned as a **pilot study**, intended to provide preliminary validation of the instrument and initial risk mapping. This limitation is acknowledged and further discussed in the study limitations section.

Qualitative Phase

Participant Selection and Data Collection

The qualitative phase aimed to validate and deepen the quantitative findings and to develop context-specific risk mitigation strategies. Participants were selected using purposive sampling based on their involvement in KRIS-related decision-making and implementation processes. In-depth interviews were conducted with four key informants: the Director of Medical Services, the Finance Director, the Nursing Manager, and the Medical Support Services Manager. In addition, two Focus Group Discussions (FGDs) were conducted with a total of ten participants from cross-functional management units, including medical services, nursing, medical support services, finance, facilities, and quality management. Each FGD session lasted approximately 90–120 minutes. Data collection continued until data saturation was achieved, indicated by the absence of new themes or relevant information in the final interviews and FGD sessions.

Data Analysis

Quantitative data were analyzed using descriptive statistics to calculate means, medians, and score distributions, followed by risk prioritization using a 5×5 risk matrix. Qualitative data were analyzed using *thematic content analysis*, which included verbatim transcription, open coding, code categorization, theme development, and thematic interpretation aligned with ERM domains. Data integration was conducted by linking quantitatively prioritized risks with qualitative explanations to generate a comprehensive understanding of risk drivers and mitigation strategies.

Research Rigor and Data Triangulation

Qualitative rigor was enhanced through methodological triangulation by integrating survey data, in-depth interviews, and FGDs. *Peer debriefing* was conducted among the research team during coding and theme interpretation. Limited *member checking* was also performed with selected key informants to ensure that interpretations accurately reflected participants' perspectives. The sequential quantitative–qualitative design inherently strengthened data triangulation and methodological rigor.

Ethical Considerations

This study received ethical approval from the Health Research Ethics Committee of Sultan Agung Islamic Hospital (Approval No. 83/KEPK-RSISA/VI/2025). Ethical clearance was granted on May 28, 2025, and is valid until May 28, 2026. The ethical review confirmed that the study complied with the seven WHO ethical standards, including social value, scientific value, equitable assessment of benefits and risks, confidentiality and privacy, and informed consent, in accordance with the 2016 CIOMS Guidelines. Written informed consent was obtained from all participants prior to data collection. Participants were informed about the study objectives, procedures, potential risks, and their right to withdraw at any time without consequences. Confidentiality and anonymity were strictly maintained throughout the research process.

RESULTS

Based on the analysis of 19 risk items across eight ERM domains, the risk scores ranged from 11.3 to 15.2, corresponding to moderate to high risk categories. This indicates that the implementation of the Standard Inpatient Class (KRIS) at RS Islam Sultan Agung is perceived by respondents to carry substantial potential risks that require

Table 1. Quantitative Risk Assessment and Ranking Based on ERM Domains

No.	ERM Domain	Risk Description	Mean Risk Score	Risk Category	Rank
1	Strategic	Decreased hospital reputation due to inadequate readiness for KRIS implementation	15.2	High	1
2	Patient Safety	Reduced patient safety and comfort due to suboptimal facility standards	14.5	High	2
3	Patient Safety	Increased cross-infection risk due to denser room design	13.8	High	3
4	Operational	Service disruptions due to adjustments to new KRIS standards	13.9	High	4
5	Human Resources	Increased workload for medical and nursing staff due to service system changes	13.6	High	5
6	Technology	Information system disruptions affecting patient administration	13.5	High	6
7	Hazard	Fire risk associated with inpatient room redesign or renovation	13.4	High	7
8	Financial	Increased operational costs due to investments required to meet KRIS standards	13.4	High	8
9	Strategic	Reduced hospital competitiveness compared to more KRIS-ready hospitals	13.1	High	9
10	Regulatory	Risk of sanctions due to non-compliance with KRIS regulations	13.2	Moderate	10
11	Operational	Insufficient facilities and infrastructure to meet the 12 KRIS criteria	12.9	Moderate	11
12	Human Resources	Insufficient trained personnel to optimally implement KRIS	12.9	Moderate	12
13	Technology	Unprepared information systems for changes in patient data classification	12.6	Moderate	13
14	Financial	Financial pressure due to delayed adjustment of service tariffs	12.4	Moderate	14
15	Strategic	Slow internal adaptation to KRIS policy changes	12.3	Moderate	15
16	Regulatory	Divergent interpretations of KRIS regulations causing compliance issues	12.2	Moderate	16
17	Financial	Decreased hospital revenue from non-JKN services	11.8	Moderate	17
18	Operational	Inadequate bed capacity following KRIS implementation	11.8	Moderate	18
19	Hazard	Natural disasters or emergencies exacerbating KRIS-related infrastructure limitations	11.3	Moderate	19

Quantitative Risk Prioritization

Based on the assessment of 19 risk items across eight Enterprise Risk Management (ERM) domains, the calculated risk scores ranged from 11.3 to 15.2, corresponding to moderate to high risk categories. This distribution indicates that the implementation of the Standardized Inpatient Class (KRIS) is perceived by inpatient unit managers as involving multiple risks requiring prioritized management. Table 1 complete risk register, including risk descriptions, mean risk scores, risk categories, and rankings. The highest mean score was observed for Strategic Risk 1—the risk of decreased hospital reputation due to inadequate readiness for

KRIS implementation—with a mean score of 15.2 (high risk) and ranked first. The second-highest ranked risk was Patient Safety Risk 8, related to reduced patient safety and comfort due to suboptimal facility standards (mean 14.53; high risk). Other high-priority risks included Operational Risk 6 (service disruptions due to adjustments to KRIS standards; mean 13.91), Patient Safety Risk 7 (increased cross-infection due to denser room design; mean 13.80), and Human Resources Risk 12 (increased workload for medical and nursing staff; mean 13.60).

Financial risks showed predominantly moderate to high scores, particularly Risk 9 (increased operational costs due to investment requirements; mean 13.4) and Risk 11 (financial pressure related to delayed tariff adjustments; mean 12.4). Regulatory, technology, and hazard risks were generally categorized as moderate, although several items approached the high-risk threshold. Overall, the quantitative results indicate that strategic, operational, patient safety, and human resources risks occupy the highest priority levels in the KRIS implementation risk profile, while financial, regulatory, technology, and hazard risks form supporting but relevant risk clusters.

Qualitative Findings

Qualitative data were obtained from in-depth interviews and focus group discussions (FGDs) involving cross-functional hospital managers. The qualitative findings primarily served to confirm, contextualize, and elaborate the quantitative risk priorities.

Research informants in the quantitative phase consisted of inpatient ward heads and senior shift leaders, who were selected based on their direct involvement in inpatient service management. These individuals were considered to have sufficient knowledge of inpatient care processes, enabling them to assess the potential impact and likelihood of risks associated with KRIS implementation.

For the qualitative phase, participants were purposively selected to support the stages of risk prioritization, risk response, and risk monitoring. A total of 7 participants were involved in the Focus Group Discussion (FGD), representing key managerial functions, including medical services, nursing, medical support services, finance, general affairs and facilities, marketing, and human resources. Their cross-functional perspectives contributed to the identification and validation of key risk themes and mitigation strategies.

Participants consistently described financial risks related to renovation costs, investment needs, and dependency on BPJS reimbursement mechanisms. Managers noted that renovation and infrastructure upgrades required to meet KRIS standards created financial pressure that could affect operational planning and cash flow management.

Operational risks were discussed in relation to changes in ward layout, bed redistribution, and patient flow management. Participants reported that adjustments during the transition period could lead to temporary service disruptions, including congestion in certain service areas when coordination between units was suboptimal.

In terms of patient safety, managers highlighted concerns related to room density, infection control, and the adjustment of supporting facilities during the transition phase. These concerns were particularly evident during periods when physical renovations were still ongoing or when inpatient capacity was temporarily reduced.

Strategic risks were frequently mentioned in relation to hospital reputation and competitiveness. Participants expressed concern that delayed or incomplete KRIS implementation could influence patient perceptions and hospital choice in a competitive service environment.

Human resources risks were primarily associated with increased workload and adaptation demands among nursing and medical staff. Participants described changes in service systems and bed distribution as factors contributing to workload pressure, particularly when staffing levels and training had not yet fully adjusted to the new service configuration.

Confirmation by Senior Management

In-depth interviews with senior hospital leadership confirmed that financial, operational, strategic, and human resources risks were perceived as the most relevant during the KRIS implementation process. Senior managers provided examples related to renovation scheduling, bed redistribution, and service continuity during the transition period, which were consistent with the risk priorities identified in the quantitative assessment.

Integrated Risk Profile

Integration of quantitative and qualitative findings demonstrates a convergent risk profile, in which high-priority risks identified through quantitative scoring were consistently reinforced by managerial narratives. Strategic risks related to reputation and competitiveness, along with operational, patient safety, and human resources risks, emerged as the most prominent risk domains. Financial risks were identified as cross-cutting factors that interacted with multiple risk domains.

Taken together, the results indicate that KRIS implementation at RS Islam Sultan Agung is characterized by a set of interrelated priority risks across strategic, operational, patient safety, human resources, and financial domains, as reflected through both quantitative assessment and qualitative confirmation.

DISCUSSION

This study provides an integrated risk profile of Standardized Inpatient Class (KRIS) implementation using an Enterprise Risk Management (ERM) framework, combining quantitative prioritization with qualitative contextualization. The findings indicate that KRIS implementation constitutes a multidimensional organizational transformation, with dominant risks concentrated in the strategic, operational, financial, and human resource domains. This pattern reflects broader evidence from health system reforms, where structural standardization policies interact with institutional capacity, financing mechanisms, and workforce readiness (McKee et al., 2019; World Health Organization, 2020).

The highest-priority risk identified was the potential decline in hospital reputation resulting from inadequate preparedness for KRIS implementation. Hospital reputation plays a critical role in shaping patient trust, utilization patterns, and competitive positioning, particularly in pluralistic healthcare markets where patients have multiple provider options. Previous studies in healthcare services research demonstrate that perceived quality, transparency, and visible compliance with standards strongly influence patient choice and loyalty (Helm, 2011; Van Dijk-de Vries et al., 2020). During periods of regulatory transition, hospitals perceived as lagging in readiness may experience shifts in patient volume and market share, even when clinical outcomes remain stable (Mehrotra et al., 2021). The present findings reinforce this evidence by highlighting reputation as a primary strategic risk in the context of KRIS, extending prior KRIS-focused studies that emphasized infrastructural compliance but did not explicitly address reputational vulnerability.

Operational risks, particularly those related to bed redistribution, service flow changes, and transitional facility readiness, also emerged as high priorities. These findings are consistent with international literature documenting temporary workflow inefficiencies and service disruptions during hospital renovation and ward reconfiguration processes (Battle et al., 2017; Joseph et al., 2018). Concerns regarding increased cross-infection risk further align with evidence linking spatial crowding, ventilation adequacy, and transitional layouts to heightened nosocomial infection risk (Alshamsi et al., 2021; Harris et al., 2020). In this regard, the study enriches existing KRIS literature by demonstrating that compliance with physical standards alone may be insufficient if operational and infection control processes are not simultaneously strengthened.

Although financial risks were not consistently ranked as the highest in quantitative scoring, qualitative findings revealed their foundational role in shaping other risk domains. Dependence on BPJS reimbursement schedules, significant capital investment requirements,

and uncertainty regarding post-KRIS revenue composition were perceived as central constraints. Similar challenges have been reported in low- and middle-income countries implementing DRG-based or case-based payment reforms, where reimbursement delays and constrained fiscal space undermine organizational resilience and slow reform implementation (Barber et al., 2019; Johar et al., 2018). From an ERM perspective, financial risk functions as a cross-cutting domain that can amplify operational disruptions, limit workforce investment, and constrain strategic flexibility (Kaplan & Mikes, 2012; Lam, 2014). This finding positions KRIS implementation in Indonesia within a broader global debate on the financial sustainability of hospital reforms under UHC-oriented payment systems.

Human resource risks were also prominent, particularly increased workload, role adjustment demands, and resistance to change among nursing and medical staff. These findings are consistent with international evidence identifying workforce strain and inadequate change management as major barriers to health sector reform (Aiken et al., 2012; Huselid & Minbaeva, 2019). Resistance to change is often intensified when reforms are introduced without parallel investments in communication, training, and incentive alignment—conditions echoed by participants in this study. By explicitly linking human resource risks to operational and strategic outcomes, this study extends previous KRIS research, which has largely treated workforce issues as secondary considerations.

The interdependence among risks observed in this study underscores the value of an integrated ERM approach. Financial constraints influenced operational readiness; operational disruptions affected patient safety and reputation; and workforce preparedness shaped both service continuity and organizational image. This pattern aligns with ERM principles emphasizing cross-domain risk governance and the avoidance of fragmented mitigation strategies (COSO, 2017; Etges et al., 2018). In contrast to prior KRIS studies focusing on checklist-based readiness, this study demonstrates how ERM enables a more systemic understanding of policy implementation risks.

From a practical perspective, the findings suggest several managerial implications. Hospitals should prioritize strategic alignment to ensure that KRIS implementation supports long-term institutional goals rather than being treated solely as regulatory compliance. Operational planning must explicitly address transition phases, with particular attention to bed management, patient flow, and infection prevention. Financial risk mitigation requires proactive planning, including phased investments, expenditure controls, and careful cash flow management. Finally, human resource risks should be addressed through structured change

management strategies, encompassing communication, targeted training, and workload adjustment mechanisms.

Study Limitations

This study was conducted within the context of a national policy that remains dynamic and is currently undergoing regulatory transition. Consequently, the identified risk profile and mitigation strategies represent conditions at the time of data collection and may not fully reflect a finalized or stable policy framework. Therefore, the findings should be interpreted as context-specific and may evolve in line with future developments and adjustments in KRIS regulations.

CONCLUSIONS

This study demonstrates that the implementation of the Standardized Inpatient Class (KRIS) is associated with a set of interrelated risks spanning strategic, operational, financial, patient safety, and human resource domains. The most prominent risks identified include potential reputational decline due to inadequate preparedness, operational disruptions during the transition phase, increased infection risk related to spatial reconfiguration, and heightened workload pressures among healthcare staff. Although financial risks did not consistently rank as the highest in quantitative scoring, qualitative findings underscore financial stability as a foundational factor influencing operational readiness, workforce capacity, and strategic positioning.

These findings reinforce the importance of approaching KRIS implementation not merely as a regulatory obligation, but as a comprehensive organizational transformation that requires integrated risk governance. From a practical perspective, hospitals should adopt an Enterprise Risk Management (ERM) approach to strengthen change management, ensure continuity of services during transitional periods, enhance infection prevention measures, and align financial planning with phased infrastructure investments and workforce readiness strategies.

From a policy perspective, this study highlights the need for supportive and operationally oriented policy measures at the national level. Policymakers should consider facilitating phased KRIS implementation, ensuring adaptive BPJS reimbursement mechanisms during transition periods, and providing technical guidance or ERM capacity-building support for hospitals, particularly private institutions with limited financial flexibility. Such measures may reduce unintended service disruptions and improve system-wide readiness for standardized inpatient care.

In terms of theoretical contribution, this study extends the application of ERM within the context of health system reform in low- and middle-income countries (LMICs). By demonstrating how ERM can be used to capture cross-domain risks during the implementation of a national standardization policy, the findings contribute to the growing literature on integrated risk management as a tool for strengthening organizational resilience in UHC-oriented health systems.

This study was conducted during a dynamic regulatory transition, and therefore the identified risk profile reflects conditions at the time of data collection. Future research involving multi-hospital settings or longitudinal designs is recommended to examine how risk profiles and mitigation strategies evolve as KRIS policies become more stable and fully implemented.

REFERENCES

Aiken, L. H., Sermeus, W., & Van den Heede, K. (2012). Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *Bmj*, *1(1)*, 1–9.

Alshamsi, A., Abdullah, Y., & Ghaleb, R. (2021). Evaluating hospital infrastructure readiness for new clinical service standards. *BMC Health Services Research*, *2(1)*, 1–12. https://doi.org/10.1186/s12913-021-06398-7

Barber, J., Panca, M., & Livingston, G. (2019). Healthcare resource utilisation and costs of agitation in people with dementia living in care homes in England-the managing agitation and raising quality of life in dementia (MARQUE) study. *PLoS One*, *14(2)*, 21–30.

Battle, S. E., Bookstaver, P. B., Justo, J. A., & Kohn, J. (2017). Association between inappropriate empirical antimicrobial therapy and hospital length of stay in Gram-negative bloodstream infections: stratification by prognosis. *Journal of Antimicrobial Chemotherapy*, *72(1)*, 299–304.

Busse, L., Ayaz, A., Dhruv, N. T., & Katzner, S., Saleem, A. B., Schölvinck, M. L., ... & Carandini, M. (2011). The detection of visual contrast in the behaving mouse. *Journal of Neuroscience*, *31(31)*, 1–13.

COSO. (2017). *Enterprise risk management: Integrating with strategy and performance*. Committee of Sponsoring Organizations of the Treadway Commission.

Etges, A. P. B. S., Luiz, J. V. R., Polanczyk, C. A., & Gonçalves, P. (2018). Hospital enterprise risk management: A conceptual framework and results of a Delphi study. *BMC Health Services Research*, *18(2)*, 1–11. https://doi.org/10.1186/s12913-018-3192-1

Harris, D. A., Albero, K., & Steele, R. L. (2020). COVID-19 collaborative model for an academic hospital and long-term care facilities. *Journal of the American Medical Directors Association*, *21(7)*, 939–942.

Helm, S. (2011). Employees' awareness of their impact on corporate reputation. *Journal of Business Research*, *64(7)*, 657–663. https://doi.org/10.1016/j.jbusres.2010.09.001

Huselid, M., & Minbaeva, D. (2019). *Big data and human resource management*. The SAGE handbook of human resource management.

Johar, M., Soewondo, P., Pujisubekti, R., & Satrio, H. K. (2018). Inequality in access to health care, health insurance and the role of supply factors. *Social Science & Medicine*, *21(3)*, 134–145.

Joseph, A., Henriksen, K., & Malone, E. (2018). The architecture of safety: An emerging priority for improving patient safety. *Health Affairs, 37(11)*, 1–12.

Kaplan, R., & Mikes, A. (2012). Managing Risks: A New Framework. *Harvard Business Review*, *9(1)*, 48–60.

Kemenkes RI. (2023). *Profil Kesehatan Indonesia 2022*. Jakarta : Kementerian Kesehatan R.

Lam, J. (2014). *Enterprise risk management: From incentives to controls*. Wiley.

Levy, C., White, O., & Helbekkmo, H. (2019). Creating the bank enterprise risk management function of the future. *Journal of Risk Management in Financial Institutions*, *12(4)*, 297–310.

Mahendradhata, Y., Trisnantoro, L., Listyadewi, S., & Soewondo, P., Marthias, T., Harimurti, P., & Prawira, J. (2017). The Republic of Indonesia health system review. *WHO Regional Office for South-East Asia*, *7(1)*, 1–13.

McKee, M., Kruk, M. E., & Hall, W. (2019). Health system financing challenges in low- and middle-income countries. *The Lancet Global Health*, *7(1)*, e20–e21. https://doi.org/10.1016/S2214-109X(18)30459-8

Mehrotra, D. V., Janes, H. E., Fleming, T. R., & Annunziato, P. W., Neuzil, K. M. (2021). Clinical endpoints for evaluating efficacy in COVID-19 vaccine trials. *Annals of Internal Medicine*, *174(2)*, 221–228.

Ministry of Health. (2020). *Profil Kesehatan Indonesia*.

Puspitasari, R. H., & Handayani, D. (2022). Edukasi melalui Buklet Sehat untuk Meningkatkan Perilaku Hidup Bersih dan Sehat (PHBS) pada Masyarakat Pesisir Kota Pasuruan. *Jurnal Keperawatan*, *14(4)*, 917–922.

Siregar, T. M., Brahmana, N. E., Ketaren, O., & Rohana, T. (2022). Pengaruh Kecemasan Perawat Terhadap Penularan Virus Corona (Covid-19) Di Ruang Rawat Inap Rindu B Rumah Sakit Umumpusat Haji Adam Malik Medan Tahun 2021. *Journal Of Healthcare Technology And Medicine*, *7(2)*, 21–30.

Van Dijk-de Vries, A., Stevens, A., van der Weijden, T., & Beurskens, A. J. (2020). How to support a co-creative research approach in order to foster impact. The development of a Co-creation Impact Compass for healthcare researchers. *PLoS One*, *15(10)*, 21–30.

World Health Organization. (2019). *World health statistics 2019: monitoring health for the SDGs, sustainable development goals*. Www.Who.Int. https://www.who.int/publications/i/item/9789241565707

World Health Organization. (2020). *WHO Risk Management Strategy*. Www.Who.Int. https://www.who.int/publications/m/item/risk-management-strategy