



Review

Factors Associated with Healthcare Fraud and Fraud Prevention in Indonesia's National Health Insurance Hospitals: A PRISMA-Guided Literature Review

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ABSTRACT

Background: This PRISMA-guided literature review synthesizes available evidence on factors associated with fraud risk and fraud-prevention practices in hospitals participating in Indonesia's National Health Insurance (*Jaminan Kesehatan Nasional/JKN*) program. **Methods:** Literature searches were conducted in Scopus, PubMed, and Google Scholar for studies published between 2020 and 2025. A total of six studies (n=6) met the inclusion criteria, consisting of qualitative, quantitative, and socio-legal research designs. Due to heterogeneity in study methods and outcomes, findings were integrated using a thematic literature review approach rather than statistical aggregation. **Results:** The reviewed studies suggest that fraud-related risks are associated with interacting individual, organizational, and systemic contexts, including financial pressures, coding practices, internal control environments, organizational commitment, information systems, and regulatory implementation factors. Several studies also indicate that strengthened governance mechanisms, such as internal controls and antifraud teams, may support fraud-prevention capacity, although most findings remain perception-based. Overall, the review highlights the need for future empirical research using administrative claims data, audits, and evaluated antifraud interventions to strengthen governance within Indonesia's national health insurance system. **Conclusion:** Strengthening governance mechanisms such as internal controls, antifraud teams, and integrated claim monitoring systems may support fraud-prevention capacity in JKN hospitals. Nevertheless, the current evidence base remains limited, highlighting the need for future empirical studies using administrative claims data, audits, and evaluated antifraud interventions to improve accountability within Indonesia's national health insurance system.



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INTRODUCTION

The National Health Insurance (*Jaminan Kesehatan Nasional/JKN*) program represents one of the largest health financing reforms in Indonesia and plays a central role in improving access to healthcare services through a social insurance mechanism (Kementerian Kesehatan Republik Indonesia, 2025). Despite its achievements in expanding population coverage, the complexity of hospital reimbursement systems, claim verification procedures, and governance arrangements has introduced challenges related to fraud risk and accountability in healthcare delivery. Fraud in

health financing is generally defined as intentional or opportunistic actions that result in inappropriate financial gain, misrepresentation of clinical services, or misuse of insurance resources, which may undermine financial sustainability and public trust (Kartika, Nasser, Suswantoro, & Jaeni, 2025; U4 Anti-Corruption Resource Centre, 2020).

From a conceptual perspective, fraud risk can be understood through behavioral and governance frameworks. The fraud triangle highlights pressure, opportunity, and rationalization as key drivers of unethical behavior, while governance and internal control theories emphasize the importance of organizational oversight, risk management, and accountability mechanisms in reducing fraud vulnerability (Arena & Azzone, 2009; Mauren Michaela, Nurmalasari, & Hosizah, 2021). In the context of JKN hospital claims, these theoretical perspectives suggest that fraud risk is shaped not only by individual behavior but also by organizational culture, information systems, payment incentives, and regulatory environments embedded within the INA-CBGs reimbursement model (Tito, 2025; Wulan, Dirhan, Syavani, & Rahmiyati, 2025).

Previous studies in Indonesia have explored various aspects of healthcare fraud, including coding practices, internal control mechanisms, antifraud governance, and the role of health authorities in fraud prevention and handling (Indrawan, Lemes, & Surata, 2023; Pranggoro, Okta, Wastuaji, Mais, & Sunarsih, 2025; Pratami & Suci, 2025). However, much of the existing research focuses on specific institutional settings or examines fraud from single disciplinary perspectives, resulting in fragmented understanding of how individual, organizational, and systemic factors interact. In addition, many studies rely on qualitative exploration or perception-based survey data, which provides valuable insights but requires cautious interpretation when synthesizing evidence across contexts (Inggi & Achadi, 2024; Nurul Fatimah, Misnaniarti, & Syakurah, 2021).

Although policy reports and institutional discussions have highlighted fraud concerns within the JKN system, there remains limited synthesis of peer-reviewed empirical evidence that integrates multiple levels of analysis within a single framework. This gap is important because ongoing health system reforms emphasize governance strengthening, digital transformation, and financial sustainability, all of which require a clearer understanding of factors associated with fraud risk and fraud-prevention capacity (Kementerian Kesehatan Republik Indonesia, 2024; Syahrudin, 2024). Therefore, this study aims to synthesize empirical evidence on factors associated with fraud and fraud prevention in JKN hospitals through a PRISMA-guided literature review. The review focuses on identifying individual, organizational, and systemic factors discussed in the literature, as well as governance mechanisms that may support fraud-prevention efforts within the Indonesian national health insurance context.

METHODS

This study employed a PRISMA-guided literature review approach to synthesize empirical evidence on factors associated with fraud risk and fraud-prevention practices in hospitals participating in Indonesia's National Health Insurance (Jaminan Kesehatan Nasional/JKN) program. The review adopted key transparency principles derived from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework while acknowledging the heterogeneous nature of the included study designs.

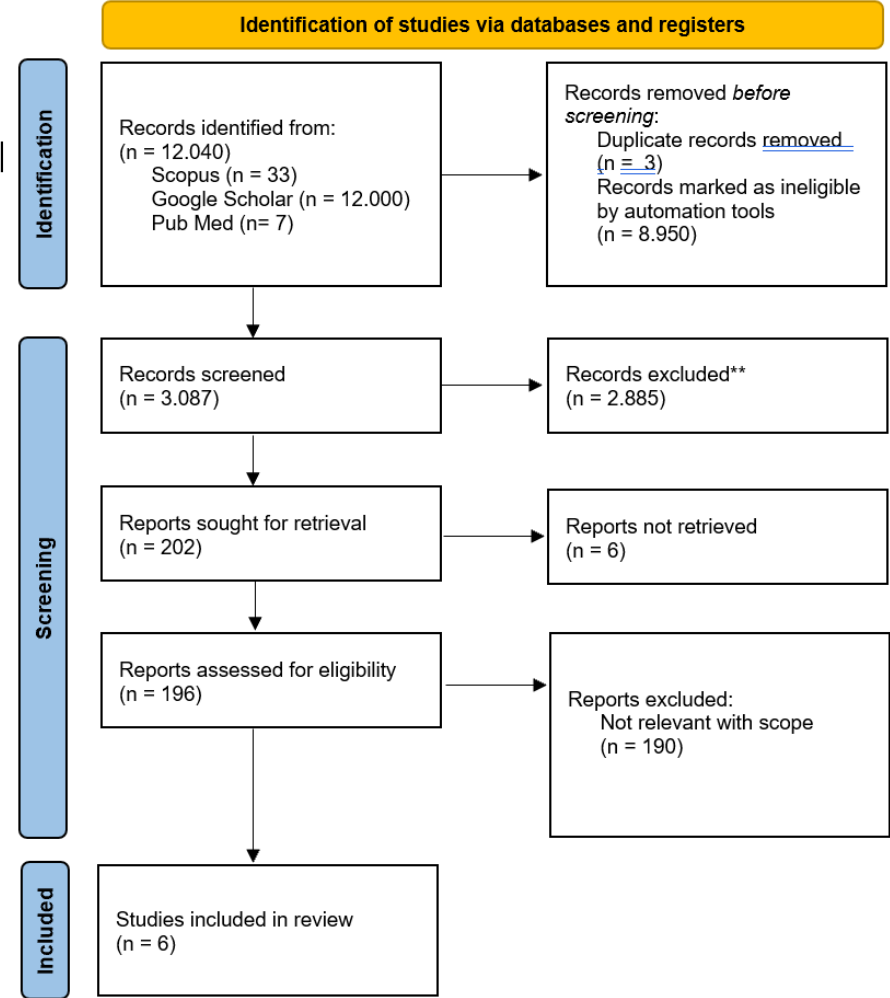
Literature searches were conducted between October and November 2025 using three electronic databases: Scopus, PubMed, and Google Scholar. The search strategy combined English and Indonesian keywords related to healthcare fraud and the JKN system. Core search terms included: ("fraud" OR "kecurangan") AND ("Jaminan Kesehatan Nasional" OR "JKN" OR "National Health Insurance") AND ("hospital" OR "rumah sakit") AND ("Indonesia"). To enhance reproducibility, Google Scholar searches were limited to the first 200 results sorted by relevance, and only peer-reviewed academic publications were considered.

Studies were included if they:

- (1) were empirical research articles published between 2020 and 2025;
- (2) examined fraud risk, fraud prevention, or governance factors related to JKN hospital services;
- (3) were written in English or Indonesian; and
- (4) reported primary data using qualitative, quantitative, or socio-legal approaches.

Review articles, editorials, and purely conceptual papers were excluded to minimize duplication of evidence and ensure consistency with the analytical scope of this review.

Article selection was conducted in two stages. First, titles and abstracts were screened to exclude studies that were not related to JKN hospital settings or fraud-related topics. Second, full-text assessment was performed to evaluate eligibility based on predefined criteria. The selection process followed PRISMA transparency principles and is illustrated in a flow diagram presenting identification, screening, eligibility, and inclusion stages along with reasons for exclusion.



*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers).

**If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

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Figure 1. PRISMA Flow Diagram of Study Selection

Data from eligible studies were extracted using a standardized matrix including author, publication year, study design, setting, research objectives, main findings, and reported limitations. The extraction process aimed to facilitate thematic comparison across heterogeneous research designs.

A methodological quality appraisal was conducted to enhance interpretive transparency. The appraisal was informed by the Joanna Briggs Institute (JBI) critical appraisal approach and

adapted to accommodate diverse study designs. Relevant JBI checklists were consulted for qualitative research, analytical cross-sectional studies, and socio-legal analyses. The appraisal focused on clarity of research objectives, appropriateness of study design, adequacy of data sources, and potential perception bias. Given the exploratory nature of this PRISMA-guided literature review, the appraisal was applied descriptively to inform interpretation rather than to exclude studies or assign numerical quality scores. A summary of the JBI-informed appraisal is presented in Table 1.

Table 1. JBI-Informed Quality Appraisal Summary of Included Studies

Study (Author, Year)	Study Design	JBI Guidance Applied	Key Strengths Identified	Potential Limitations
Haruddin et al. (2021)	Qualitative phenomenology	JBI Checklist for Qualitative Research	Clear contextual exploration of fraud-related behavior	Subjective interpretation; limited transferability
Arifin et al. (2024)	Qualitative descriptive	JBI Checklist for Qualitative Research	Detailed organizational process analysis	Single institutional setting
Pranggoro et al. (2025)	Qualitative governance study	JBI Checklist for Qualitative Research	Insight into digital governance and antifraud practices	Limited measurement of empirical outcomes
Sarita et al. (2023)	Quantitative cross-sectional	JBI Analytical Cross-Sectional Checklist	Structured variables and organizational focus	Perception-based indicators; non-causal inference
Pratami & Suci (2025)	Quantitative cross-sectional	JBI Analytical Cross-Sectional Checklist	Clear measurement of internal control and AIS factors	Single-site context; self-reported data
Indrawan et al. (2023)	Socio-legal empirical study	JBI Text and Opinion Guidance	Governance and regulatory perspective	Absence of quantitative fraud outcome measures

Due to methodological heterogeneity across the included studies, findings were synthesized using a thematic literature review approach. Factors discussed in the literature were grouped into three analytical domains: individual factors, organizational factors, and systemic or regulatory factors. The synthesis aimed to identify patterns and relationships across studies while avoiding causal inference.

RESULTS

A total of six studies met the inclusion criteria and were included in this review. The included studies consisted of qualitative research (n = 3), quantitative cross-sectional surveys (n = 2), and socio-legal empirical analysis (n = 1). Table 1 summarizes the characteristics of the included studies, including study design, analytical focus, and contextual setting within JKN hospital services. The variation in methodological approaches indicates a heterogeneous evidence base, which requires cautious interpretation of findings.

The studies demonstrate diversity in methodological orientation and analytical scope. Qualitative studies primarily explored contextual governance challenges and behavioral aspects of fraud risk, whereas quantitative cross-sectional surveys focused on perceived fraud-prevention effectiveness at the organizational level. The socio-legal study emphasized regulatory implementation and institutional coordination within the Indonesian health insurance system.

Table 2. Characteristics and Key Findings of Studies on the Determinants of Fraud in the National Health Insurance Program in Hospitals

No	Title and First Author (Year)	Study Objective and Design	Study Setting & Population	Key Findings	Study Limitations
1	“Phenomenon of causal fraud health insurance in hospitals: Theory of gear fraud” – Haruddin (2021)	To describe and explore hospital staff experiences regarding causes of fraud in health insurance programs in hospitals. Qualitative study using a phenomenological approach.	Government hospitals in Southeast Sulawesi (Bahteramas Regional Hospital and Kendari Regional Hospital); 44 participants (physicians in charge, nurses, midwives, casemix/coders, and expert informants).	Internal factors (financial motives, behavioral and social factors, weak internal controls, revenue targets, leadership, incentives) are the main drivers of fraud, while external factors (JKN regulations, INA-CBGs payment system, BPJS system) act as predisposing factors; both interact like interlocking gears in influencing fraud occurrence.	Limited to two public hospitals in one province; does not quantitatively measure the magnitude of fraud; potential subjective bias due to interview-based data.
2	“Analysis of fraud potential control based on input and process in Dadi Regional Hospital, Makassar City” – Arifin (2024)	To analyze fraud potential control based on input components (policies, human resources, facilities) and processes at Dadi Regional Specialty Hospital. Qualitative descriptive design using in-depth interviews and document review.	Dadi Regional Specialty Hospital, Makassar; informants included internal control unit, claim verification team, medical committee, and related staff.	Fraud drivers include differences in understanding among verifiers, coders, and physicians, lack of fraud prevention socialization, and absence of a dedicated JKN anti-fraud team; inhibiting factors include SOP and clinical pathway implementation, professional ethics culture, inter-unit coordination, and active oversight by internal control and medical committees.	Conducted in a single type A hospital; no quantitative measurement of fraud reduction; reliance on informant perceptions introduces potential bias.
3	“The Role of Digitalization in Fraud Prevention in the BPJS Health Claim System” – Pranggoro (2025)	To analyze how digitalization of information systems and BPJS Health claims contributes to fraud prevention and detection in hospitals. Qualitative study using in-depth interviews and document analysis.	Private hospitals collaborating with BPJS Health; informants included casemix heads, coders, claim staff, and management.	Digital systems assist in detecting abnormal diagnosis coding, billed services without documentation, and suspicious card usage patterns, supporting fraud prevention; however, challenges remain due to limited IT infrastructure, insufficient staff training, claim procedure complexity, and suboptimal managerial supervision.	Limited to specific private hospital contexts; no quantitative assessment of digitalization impact on fraud reduction; findings heavily dependent on informant narratives.
4	“The Role of Internal Audit, Internal Control, Organizational	To examine impact of internal audit, internal control, organizational commitment, and	Hospital X in Sidoarjo; 43 employees.	Internal control, organizational commitment, and integrity have a significant positive	Small sample size in a single hospital; perception-based data do

No	Title and First Author (Year)	Study Objective and Design	Study Setting & Population	Key Findings	Study Limitations
	Commitment, and Integrity in Optimizing Fraud Prevention in Hospitals in Sidoarjo” – Sarita (2023)	integrity on fraud prevention in Hospital X in Sidoarjo. Quantitative survey design using questionnaires and multiple linear regression.		impact on fraud prevention, while internal audit has no significant effect; indicating that the control environment and organizational culture are more decisive than the mere presence of an internal audit function.	not reflect actual fraud incidents; cross-sectional design limits causal inference.
5	“The Effect of Internal Control, Organizational Commitment, and Accounting Information Systems on Fraud Prevention at RSIA Zainab Pekanbaru” – Pratami (2025)	To analyze impact of internal control, organizational commitment, and accounting information systems on fraud prevention at RSIA Zainab Pekanbaru. Quantitative survey design using questionnaires and multiple linear regression.	RSIA Zainab Pekanbaru; 69 employees.	Internal control, organizational commitment, and accounting information systems significantly influence fraud prevention; a combination of strong internal controls, a robust organizational culture, and structured information systems is essential to minimize fraud opportunities.	Limited to one hospital; perception-based data; does not assess actual fraud cases; cross-sectional design.
6	“The Role of the Health Office in Fraud Prevention and Handling in the Implementation of the National Health Insurance Program Based on Minister of Health Regulation No. 16 of 2019 in Buleleng Regency” – Indrawan (2023)	To analyze role of Buleleng Regency Health Office in fraud prevention and handling in the implementation of the National Health Insurance Program based on Minister of Health Regulation No. 16 of 2019. Empirical legal research using a socio-legal approach.	Buleleng Regency Health Office; subjects included officials and staff involved in health insurance supervision, as well as policy and implementation documents.	The Health Office contributes to fraud prevention through regulatory dissemination, training, health facility guidance, establishment and participation in fraud prevention teams, coordination with BPJS Health and other stakeholders, and monitoring and evaluation of fraud potential. However, challenges include limited resources, weak cross-sectoral coordination, and low understanding of Regulation No. 16/2019 among implementers and the public, limiting effectiveness.	Focused on a single regency, limiting generalizability; lacks quantitative data on fraud magnitude or losses; relies heavily on interviews and internal documents, with no measurable evaluation of intervention effectiveness.

As presented in Table 2, the included studies differ in research design and outcome measurement. Qualitative studies provide contextual insights into fraud-related dynamics, while quantitative studies predominantly capture perception-based indicators of fraud-prevention capacity rather than direct fraud outcomes. Building on these study characteristics, the following sections present a thematic synthesis distinguishing between factors associated with fraud occurrence and those related to fraud-prevention capacity.

Across the included literature, several contextual factors were discussed as being associated with fraud risk in JKN hospital settings. Individual-level themes included financial pressure,

coding practices, and ethical considerations (Haruddin, Purwana, & Anwar, 2021; Arifin, AS, Darmawansyah, Abadi, & Fajrin, 2024). Organizational-level discussions appeared most frequently, highlighting weak internal control environments, limited antifraud socialization, and permissive organizational culture as conditions that may increase vulnerability to fraud (Haruddin et al., 2021; Arifin et al., 2024; Pranggoro et al., 2025). At the systemic level, governance coordination challenges were discussed within socio-legal analysis (Indrawan et al., 2023). None of the included studies directly measured fraud incidence; therefore, these findings should be interpreted as contextual associations rather than causal determinants.

Several studies examined organizational mechanisms discussed as supporting fraud prevention. Quantitative cross-sectional surveys reported that internal control strength, organizational commitment, and accounting information systems were positively associated with perceived fraud-prevention effectiveness (Sarita, Hwihanus, & Riyadi, 2023; Pratami & Suci, 2025). A qualitative digital governance study suggested that integrated claim systems may enhance anomaly detection and monitoring processes (Pranggoro et al., 2025). Governance-focused research also highlighted institutional coordination as an important contextual factor influencing antifraud implementation (Indrawan et al., 2023). Because these findings were primarily perception-based, they should be interpreted cautiously and not as evidence of reduced fraud occurrence.

When synthesized across studies, organizational-level factors appeared most frequently (5 of 6 studies), followed by individual behavioral factors (2 studies) and systemic governance factors (1 study). While several themes were consistent across qualitative and quantitative studies, differences emerged regarding technological interventions and organizational readiness, reflecting variation in institutional contexts and research approaches.

To enhance analytical transparency and address reviewer recommendations, a structured summary matrix was developed to map determinants discussed in the literature alongside supporting studies, study design characteristics, and interpretive strength of evidence.

Table 3. Summary Matrix Mapping Determinants, Supporting Studies, Study Design, and Evidence Strength

Supporting Studies	Study Design	Determinant Domain	Key Factors Identified	Evidence Strength Interpretation
Haruddin et al. (2021); Arifin et al. (2024)	Qualitative	Individual (Fraud Occurrence)	Financial pressure, coding behavior, ethics	Contextual association (non-causal)
Haruddin et al. (2021); Arifin et al. (2024); Pranggoro et al. (2025)	Qualitative	Organizational Risk (Fraud Occurrence)	Weak internal control, antifraud socialization gaps, culture	Recurrent thematic findings
Sarita et al. (2023); Pratami & Suci (2025)	Quantitative cross-sectional	Organizational Prevention Capacity	Internal control strength, organizational commitment, AIS	Perception-based association
Pranggoro et al. (2025)	Qualitative	Technological Governance	Digital claim systems, anomaly detection	Interpretive technological insight
Indrawan et al. (2023)	Socio-legal empirical	Systemic / Regulatory Context	Governance coordination, regulatory implementation	Governance-context evidence

As shown in Table 3, organizational governance factors appear most consistently across the included studies, particularly internal control environments and antifraud practices. Individual behavioral factors are primarily discussed within qualitative research, whereas quantitative

cross-sectional surveys focus on perceived fraud-prevention effectiveness rather than direct measurement of fraud occurrence.

The matrix also highlights differences in methodological orientation, where qualitative studies provide contextual explanations of fraud risk, while quantitative studies contribute perception-based insights into prevention capacity. These differences indicate that the current evidence base reflects thematic convergence rather than uniform empirical strength.

DISCUSSION

This review synthesizes heterogeneous empirical evidence on factors associated with fraud risk and fraud-prevention practices within hospitals participating in Indonesia's National Health Insurance (JKN) program. Rather than presenting uniform conclusions, the findings should be interpreted as thematic patterns emerging from diverse methodological approaches and contextual settings (Inggi & Achadi, 2024; Nurul Fatimah et al., 2021). The included studies collectively suggest that fraud-related issues are shaped by interactions among individual behavior, organizational governance, and systemic regulatory environments (Haruddin et al., 2021; Indrawan et al., 2023); however, the strength of evidence varies considerably across study types.

A critical appraisal of the included literature indicates several methodological limitations that influence interpretation. Most qualitative studies provide contextual insights into organizational culture, coding practices, and governance challenges, but their findings are inherently interpretive and context-specific (Arifin et al., 2024; Haruddin et al., 2021). Quantitative cross-sectional surveys primarily measure perceived fraud-prevention effectiveness rather than actual fraud outcomes, which limits causal inference (Pratami & Suci, 2025; Sarita et al., 2023). The socio-legal analysis contributes important perspectives on regulatory implementation but lacks measurable outcome indicators (Indrawan et al., 2023; Wicaksono, & Khasanah, 2024). Consequently, claims of "consistent evidence" would be inappropriate given the small and heterogeneous evidence base. Instead, the findings should be understood as indicative of recurring themes rather than definitive conclusions (Nurul Fatimah et al., 2021; Thaifur, Maidin, Sidin, & Razak, 2021).

Contextual and systemic factors appear central to understanding fraud risk within the JKN hospital environment. Several studies highlight how organizational culture, leadership commitment, and regulatory interpretation influence antifraud practices (Arifin et al., 2024; Wulan et al., 2025). Differences in coding knowledge, uneven implementation of standard operating procedures, and variations in institutional readiness reflect broader governance challenges within decentralized health systems (Haruddin et al., 2021; Tito, 2025). Cultural factors such as hierarchical decision-making and reliance on informal coordination mechanisms may also shape how antifraud policies are interpreted at the facility level (Mauren Michaela et al., 2021). At the systemic level, regulatory enforcement and oversight capacity influence how payment incentives and administrative pressures are translated into everyday clinical and managerial practices (Kementerian Kesehatan Republik Indonesia, 2019; U4 Anti-Corruption Resource Centre, 2020).

Comparison across study types reveals important inconsistencies. Qualitative studies tend to emphasize governance complexity and contextual challenges, while quantitative surveys report positive associations between internal control mechanisms and perceived fraud-prevention capacity (Pratami & Suci, 2025; Sarita et al., 2023). These differences suggest that organizational interventions may improve perceptions of control without necessarily demonstrating measurable reductions in fraud occurrence. In addition, technological interventions such as digital claim systems are discussed positively in qualitative research, yet empirical evaluation of their effectiveness remains limited (Pranggoro et al., 2025; Syahrudin, 2024). Advances in machine learning-based fraud detection systems have also been explored in recent health insurance research, although their implementation in JKN hospital settings remains limited (du Preez et al., 2025). Recognizing these differences is important to avoid overgeneralizing findings across methodological approaches.

The interrelationship among determinants further highlights that fraud risk cannot be attributed to a single factor. Organizational governance structures, internal control systems, and regulatory environments interact with individual behaviors such as coding practices and ethical decision-making (Arena & Azzone, 2009; Haruddin et al., 2021). For example, internal control mechanisms may function as protective factors only when supported by leadership commitment and adequate training (Sarita et al., 2023), whereas weak enforcement environments may undermine otherwise well-designed policies (Indrawan et al., 2023). This interaction underscores the importance of viewing fraud prevention as a systemic governance challenge rather than solely an individual compliance issue (Agustini, 2025; Kartika et al., 2025).

While the current evidence base remains limited, several practical implications can be cautiously derived from the reviewed studies. First, strengthening coding verification processes and continuous professional training may help reduce inconsistencies in claim documentation (Arifin et al., 2024; Haruddin et al., 2021). Second, establishing structured antifraud governance teams within hospitals may improve coordination (Kementerian Kesehatan Republik Indonesia, 2024; Komisi Pemberantasan Korupsi & BPJS Kesehatan, 2024). Third, integrating digital anomaly detection dashboards could support early identification of irregular claim patterns (du Preez et al., 2025; Pranggoro et al., 2025). Fourth, strengthening regulatory coordination may also improve fraud prevention capacity (Kementerian Kesehatan Republik Indonesia, 2025). Finally, reinforcing audit follow-up mechanisms and regulatory enforcement may enhance organizational accountability (Purwandari et al., 2024; Sari, 2022).

In addition, several public reports have indicated concerns regarding irregularities in JKN hospital claims, reinforcing the importance of transparency (Mutu Pelayanan Kesehatan Indonesia, 2018). This review has several limitations. The small number of included studies and variation in research design restrict generalizability (Nurul Fatimah et al., 2021). Many studies rely on self-reported perceptions, which may introduce bias (Pratami & Suci, 2025; Sarita et al., 2023). Future research should prioritize multi-site empirical investigations to strengthen the evidence base (Thaifur et al., 2021; Tito, 2025).

CONCLUSION

This PRISMA-guided literature review synthesizes available Indonesian evidence on factors associated with fraud risk and fraud-prevention practices in hospitals participating in the National Health Insurance (JKN) program. Rather than providing causal conclusions, the findings highlight recurring themes across heterogeneous qualitative, quantitative, and socio-legal studies, particularly the role of organizational governance, internal control environments, and systemic regulatory contexts. The contribution of this review lies in integrating fragmented national evidence into a structured thematic understanding of fraud-related issues within the Indonesian healthcare system.

Several limitations should be acknowledged. The number of included studies is relatively small, and the evidence base is heterogeneous in both methodological design and outcome measurement. Many studies rely on perception-based or single-site data, which limits generalizability and prevents strong causal interpretation. In addition, the absence of standardized fraud outcome indicators across studies restricts comparison of effectiveness among different antifraud approaches. These limitations suggest that the findings should be interpreted as indicative patterns rather than definitive evidence.

Future research should prioritize multi-level empirical investigations that integrate individual behavior, organizational governance, and systemic policy environments. Studies using administrative claims data, audit findings, and longitudinal program evaluations are particularly needed to strengthen the evidence base. Evaluated interventions—such as coding verification systems, structured antifraud governance teams, digital anomaly detection tools, and strengthened audit enforcement mechanisms—should be examined through rigorous empirical designs to assess their real-world impact. By advancing such research, future studies may contribute to more evidence-informed governance strategies and improved accountability within Indonesia's national health insurance system.

Author's Contribution Statement: **Susanna:** Conceptualization, Methodology, Literature search, Data curation, Data synthesis, Writing – Original draft preparation. **Wahyu:** Conceptual framework development, Methodological guidance, Investigation, Writing – Review & Editing, Supervision.

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BIBLIOGRAPHY

- Agustini, P. (2025). Analysis of the possibility of fraud in the national health insurance. *International Journal of Health Policy*, 10(1), 1–10. <https://ijhp.net/index.php/IJHP/article/view/394>
- Arena, M., & Azzone, G. (2009). Identifying organizational drivers of internal audit effectiveness. *International Journal of Auditing*, 13(1), 43–60. <https://doi.org/10.1111/j.1099-1123.2008.00392.x>
- Arifin, M. A., AS, A. A., Darmawansyah, A. R., Abadi, M., & Fajrin, M. A. (2024). Analysis of fraud potential control based on input and process in Dadi Regional Hospital, Makassar City. *Pharmacognosy Journal*, 16(3), 668–670. <https://doi.org/10.5530/pj.2024.16.106>
- du Preez, A., Bhattacharya, S., Beling, P., & Bowen, E. (2025). Fraud detection in healthcare claims using machine learning: A systematic review. *Artificial Intelligence in Medicine*, 160, 103061. <https://doi.org/10.1016/j.artmed.2024.103061>
- Haruddin, H., Purwana, D., & Anwar, C. (2021). Phenomenon of causal fraud health insurance in hospitals: Theory of gear fraud. *Asia Pacific Journal of Health Management*, 16(4), i895. <https://doi.org/10.24083/apjhm.v16i4.895>
- Indrawan, G., Lemes, I. N., & Surata, I. N. (2023). Urgensi kriminalisasi perbuatan kecurangan (fraud) dalam program Jaminan Kesehatan Nasional. *Kertha Widya Jurnal Hukum*, 11(2), 69–72. <https://ejournal.unipas.ac.id/index.php/KW/article/view/1673/1009>
- Inggi, P. G., & Achadi, A. (2024). Evaluation of fraud prevention policies in the national health insurance system in Indonesia: Narrative literature review. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, 7(10), 2449–2456. <https://doi.org/10.56338/mppki.v7i10.6164>
- Kartika, R. W., Nasser, M., Suswanto, T. A., & Jaeni, A. (2025). Fraud dalam layanan BPJS Kesehatan: Kajian etis dan hukum berdasarkan Undang-Undang Nomor 17 Tahun 2023 tentang kesehatan. *Inovasi: Jurnal Sosial Humaniora dan Pendidikan*, 4(1), 967–978. <https://doi.org/10.55606/inovasi.v4i1.4767>
- Kementerian Kesehatan Republik Indonesia. (2019). *Peraturan Menteri Kesehatan Republik Indonesia Nomor 16 Tahun 2019 tentang pencegahan dan penanganan kecurangan (fraud)*. Jakarta: Kementerian Kesehatan RI. <https://peraturan.go.id/id/permenkes-no-16-tahun-2019>
- Kementerian Kesehatan Republik Indonesia. (2024). Cegah fraud, Kemenkes bentuk tim pencegahan. <https://kemkes.go.id/id/cegah-fraud-kemenkes-bentuk-tim-pencegahan>
- Kementerian Kesehatan Republik Indonesia. (2025). *Program jaminan kesehatan nasional (JKN)*. Badan Kebijakan Pembangunan Kesehatan. <https://www.badankebijakan.kemkes.go.id/program-jaminan-kesehatan-nasional-jkn/>

- Komisi Pemberantasan Korupsi, & BPJS Kesehatan. (2024). Sinergi KPK–BPJS Kesehatan kawal layanan kesehatan anti-fraud. <https://www.kpk.go.id/id/ruang-informasi/berita/sinergi-kpk-bpjs-kesehatan-kawal-layanan-kesehatan-anti-fraud>
- Mauren Michaela, S., Nurmalasari, M., & Hosizah, H. (2021). Fraud in healthcare facilities: A narrative review. *Public Health of Indonesia*, 7(4), 166–171. <https://doi.org/10.36685/phi.v7i4.465>
- Mutu Pelayanan Kesehatan Indonesia. (2018). 70 rumah sakit diputus kontrak lantaran layanan JKN ditenggarai penuh kecurangan. *Mutu Pelayanan Kesehatan*. <https://www.mutupelayanankesehatan.net/community-of-practice/cop-anti-fraud/51-berita-cop-fraud/3091-70-rumah-sakit-diputus-kontrak-lantaran-layanan-jkn-ditenggarai-penuh-kecurangan>
- Nurul Fatimah, R., Misnaniarti, M., & Syakurah, R. A. (2021). Potential fraud in the implementation of national health insurance in the health sector: Systematic review. *JMMR (Jurnal Medicoeticolegal dan Manajemen Rumah Sakit)*, 10(3), 255–270. <https://garuda.kemdiktisaintek.go.id/documents/detail/3920881>
- Pranggoro, K., Okta, A. D. K., Wastuaji, A., Mais, R. G., & Sunarsih, U. (2025). Peran digitalisasi dalam pencegahan fraud pada sistem klaim BPJS Kesehatan. *Journal of Artificial Intelligence and Digital Business (RIGGS)*, 4(2), 1310–1325. <https://doi.org/10.31004/riggs.v4i2.666>
- Pratami, A., & Suci, R. G. (2025). Pengaruh pengendalian internal, komitmen organisasi, dan sistem informasi akuntansi terhadap pencegahan fraud pada RSIA Zainab Kota Pekanbaru. *PROMOSI: Jurnal Pendidikan Ekonomi UM Metro*, 13(1), 300–311. <https://doi.org/10.24127/jp.v13i1.10826>
- Purwandari, M. F., Efrila, & Edwin. (2024). Analisis yuridis sistem pencegahan kecurangan (fraud) di fasilitas kesehatan dalam penyelenggaraan program jaminan kesehatan nasional di Indonesia. *Jurnal Cahaya Mandalika*, 3(1), 701–712. <https://ojs.cahayamandalika.com/index.php/jcm/article/view/3668>
- Sari, A. P. (2022). Implementasi kebijakan pencegahan fraud dalam pelayanan jaminan kesehatan nasional. *Jurnal Kesehatan Masyarakat*, 10(2), 100–110. <https://jurnal.stikescendekiautamakudus.ac.id/index.php/JKM/article/view/1002>
- Sarita, J., Hwihanus, & Riyadi, S. (2023). Peranan audit internal, pengendalian internal, komitmen organisasi dan integritas dalam meningkatkan optimalisasi pencegahan fraud pada rumah sakit di Sidoarjo. <https://jurnal.uwp.ac.id/feb/index.php/ie/issue/view/19>
- Syahrudin, M. (2024). A systematic literature review of artificial intelligence in detecting fraud in health insurance. *BIMA Journal of Management and Accounting*, 5(2), 175–188. <https://doi.org/10.37638/bima.5.2.175-188>
- Thaifur, A. Y. B. R., Maidin, M. A., Sidin, A. I., & Razak, A. (2021). How to detect healthcare fraud? A systematic review. *Gaceta Sanitaria*, 35(Suppl. 2), S441–S449. <https://doi.org/10.1016/j.gaceta.2021.07.022>
- Tito, J. S. (2025). Faktor pemicu dan penghambat fraud dalam Program Jaminan Kesehatan Nasional: Suatu scoping review. *Ekonomi dan Kebijakan Indonesia*, 9(2), 150–165. <https://scholarhub.ui.ac.id/eki/vol9/iss2/5/>
- U4 Anti-Corruption Resource Centre. (2020). *Tackling fraud and corruption in Indonesia's health insurance system*. <https://www.u4.no/publications/tackling-fraud-and-corruption-in-indonesias-health-insurance-system.pdf>
- Wicaksono, E. N., & Khasanah, D. R. A. U. (2024). Legal analysis of hospital fraud in the implementation of the national health insurance program. *Jurnal Hukum dan Etika Kesehatan*, 5(1), 16–32. <https://doi.org/10.30649/jhek.v5i1.243>
- Wulan, S., Dirhan, D., Syavani, D., & Rahmiyati, A. L. (2025). Aspects of fraud prevention in the national health insurance program in Bengkulu Province, Indonesia: A realist evaluation. *JMMR (Jurnal Medicoeticolegal dan Manajemen Rumah Sakit)*, 14(3), 421–439. https://www.researchgate.net/publication/399928683_Aspects_of_Fraud_Prevention_in_The_National_Health_Insurance_Program_in_Bengkulu_Province_Indonesia_A_Realist_Evaluation