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FACTORS CONTRIBUTING TO PENDING INPATIENT CLAIMS IN THE NATIONAL HEALTH INSURANCE PROGRAM: A SYSTEMATIC LITERATURE REVIEW

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Abstract

Indonesia's National Health Insurance program (Jaminan Kesehatan Nasional, JKN) applies the INA-CBGs payment system for inpatient services to improve efficiency and cost containment. However, hospitals frequently experience pending inpatient claims, resulting in delayed reimbursement by BPJS Kesehatan and potential disruptions to hospital operations and financial sustainability. Existing studies examining pending claims are largely fragmented and context-specific, highlighting the need for a comprehensive synthesis of available evidence. This study aimed to systematically review and synthesize empirical evidence on factors contributing to pending inpatient claims within the JKN system and to develop evidence-based recommendations for improving claim management. A systematic literature review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Literature searches were performed in PubMed, Scopus, Google Scholar, and Garuda databases for studies published between 2014 and 2025. Quantitative, qualitative, and mixed-methods studies conducted in Indonesian hospitals that examined causes or determinants of pending inpatient claims were included. Methodological quality was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Tools. A total of nine eligible articles met the inclusion criteria and were synthesized using narrative and thematic analysis, (Amanda & Sonia, 2023). The review of nine studies demonstrated that pending inpatient claims arise from multiple interrelated factors. Administrative issues, particularly incomplete and inconsistent claim documentation, were the most frequently reported causes. Technical and clinical factors—such as discrepancies in diagnosis and procedure coding and incomplete medical records—also played a significant role. Human resource-related factors, including limited coder competency, insufficient training on INA-CBGs, and high workload, further increased the likelihood of claim errors. In addition, limitations in hospital information systems and inadequate integration with BPJS Kesehatan claim platforms contributed to delays in claim verification. Pending claims were consistently reported to adversely affect hospital cash flow, operational efficiency, and service continuity. Pending inpatient claims within the JKN system represent a persistent and systemic challenge across Indonesian hospitals. Findings from the nine reviewed studies indicate that reducing pending claims requires integrated improvements in administrative processes, coding accuracy, medical record completeness, human resource capacity, and health information system integration. Strengthening internal claim audits, continuous staff training, and effective coordination between hospitals and BPJS Kesehatan are essential strategies to mitigate the occurrence of pending inpatient claims.

Keywords: National Health Insurance; JKN; INA-CBGs; pending claims; inpatient services; systematic literature review

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INTRODUCTION

The National Health Insurance Program (*Jaminan Kesehatan Nasional*, JKN) is Indonesia's national health insurance scheme, implemented in 2014 with the aim of ensuring equitable and affordable access to health care services for the entire population, (Republik Indonesia, 2011). Under the JKN system, inpatient services are reimbursed using the INA-CBGs (*Indonesia Case Based Groups*) payment mechanism, a prospective payment system based on specific diagnostic and procedural groupings, (Kementerian Kesehatan Republik Indonesia, 2016). This system was designed to enhance financing efficiency and control health care costs, (Busse et al., 2013). However, in practice, hospitals frequently encounter the problem of delayed or pending claims, which results in delays in reimbursement by BPJS Kesehatan to health care providers, (Ramadanis et al., 2024).

A pending claim refers to a condition in which the claim documents submitted by a hospital cannot be processed by BPJS Kesehatan because they do not meet administrative or technical requirements, necessitating the return of the claim for revision or completion of documentation, (Mathar & Klevina, 2025). This situation is detrimental to hospitals and could potentially disrupt the continuity of healthcare delivery, (Mathar et al., 2024). Numerous studies conducted in Indonesian hospitals indicate that the causes of pending inpatient claims are multidimensional. Administrative factors, such as incomplete claim documentation and errors in filling out claim forms, are frequently reported as the primary causes of delayed claims.

Inaccurate medical record documentation, including incomplete, non-specific, or non-standardized diagnostic entries, has also been closely associated with an increased incidence of pending claims. Beyond administrative and technical factors, the capacity and competence of human resources—particularly coders and claim officers—also contribute to the occurrence of pending claims, Zalukhu & Permanasari, 2025). Inaccurate data entry, limited training related to INA-CBGs, and high workloads are frequently identified as contributing factors to errors in claim documentation, (Hasibuan et al., 2025). The problem of pending claims is not confined to a single health facility or isolated settings. Literature reviews and case reports demonstrate that nearly all types of hospitals, including general and specialized hospitals, experience delayed claims as a result of a combination of administrative, technical, and human resource-related factor, (Yunifa et al., 2025). Although numerous studies have examined the causes of pending claims in various hospital settings, the findings remain fragmented and are largely based on localized case studies employing diverse methodological approaches.

To date, no systematic effort has been undertaken to integrate these empirical findings into a comprehensive understanding of the factors contributing to pending inpatient claims within the JKN system. Therefore, this study conducts a systematic literature review to identify, categorize, and analyze the available scientific evidence, with the aim of producing a robust scientific synthesis and evidence-based recommendations to reduce the occurrence of pending claims within the JKN system.

Research Questions

Based on the background described above, the research questions of this study are as follows:

1. What factors have been reported in the literature as causes of pending inpatient claims within the National Health Insurance (*Jaminan Kesehatan Nasional*, JKN) system?

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2. What are the characteristics of administrative, technical, and human resource-related factors that contribute to the occurrence of pending inpatient claims, as identified in previous studies?
3. What is the role of mismatches in diagnosis and procedure coding, as well as incomplete medical records, in the occurrence of pending inpatient claims?
4. What impacts do pending claims have on hospital financial performance and operational activities, as reported in the literature?
5. How can the synthesis of empirical findings in the literature be used to formulate strategic recommendations to reduce the occurrence of pending inpatient claims within the JKN system?

Research Objectives

General Objective

To develop a scientific synthesis of the factors contributing to pending inpatient claims within the National Health Insurance (JKN) system based on findings from previous studies through a systematic literature review.

Specific Objectives

1. To identify the factors contributing to pending inpatient claims reported in studies related to the JKN system.
2. To categorize the factors contributing to pending claims into administrative, technical/clinical, human resource, and supporting system aspects.
3. To analyze the role of mismatches in diagnosis and procedure coding and incomplete medical records in the occurrence of pending inpatient claims.
4. To examine the impact of pending claims on hospital financial and operational performance based on findings from the literature.
5. To formulate evidence-based recommendations for improving claim management and preventing pending inpatient claims within the JKN system.

METHODS

Study Design

This study employed a Systematic Literature Review (SLR) design conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. This approach was used to systematically identify, evaluate, and synthesize findings from previous studies related to factors contributing to pending inpatient claims within the National Health Insurance (*Jaminan Kesehatan Nasional*, JKN) system.

Data Sources and Literature Search Strategy

The literature search was conducted across several scientific databases, including:

- PubMed
- Scopus
- Google Scholar
- Garuda

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Articles were identified using combinations of English and Indonesian keywords with Boolean operators (AND, OR), as follows:

("pending claim" OR "claim delay" OR "claim rejection") AND ("health insurance" OR "national health insurance" OR "JKN" OR "INA-CBGs") AND ("hospital" OR "inpatient")

The search was limited to articles published between 2014 and 2025, corresponding to the implementation period of the JKN program in Indonesia.

Inclusion and Exclusion Criteria

Inclusion Criteria

Articles were included in this review if they met the following criteria:

1. Original research articles employing quantitative, qualitative, or mixed-methods study designs and scoping review.
2. Studies addressing causes, risk factors, or determinants of pending claims or delayed health insurance claims.
3. Research conducted in hospitals or secondary and tertiary health care facilities.
4. Articles available in full-text format.
5. Articles published in either Indonesian or English.

Exclusion Criteria

Articles were excluded from the review if they met any of the following conditions:

1. Opinion pieces, editorials, letters to the editor, or non-systematic reviews.
2. Studies that did not specifically address pending claims or health insurance claim delays.
3. Duplicate articles across databases.
4. Articles for which the full text was not accessible.

The article selection process followed four stages in accordance with the PRISMA guidelines: identification, screening, eligibility, and inclusion. During the identification stage, all records retrieved from database searches were collected. In the screening stage, titles and abstracts were reviewed to assess relevance to the study objectives. Full-text articles were then assessed for eligibility based on the predefined inclusion and exclusion criteria. Finally, studies that met all eligibility criteria were included in the final analysis. The study selection process is illustrated in a PRISMA flow diagram**.**

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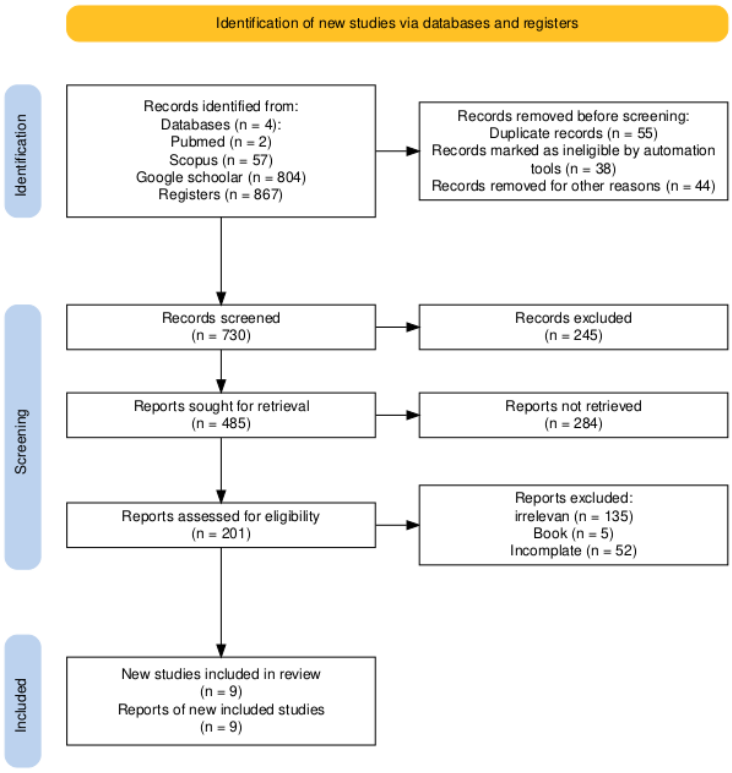

Figure 1. PRISMA Flow Diagram of the Study Selection Process

Quality Assessment of Included Studies

The methodological quality of the included studies was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Tools, tailored to the specific study design of each article (quantitative, qualitative, or mixed methods). Studies with low methodological quality were excluded from the final synthesis.

Data Extraction

Data from the selected articles were extracted using a standardized extraction form that included the following information:

- Author(s) and year of publication
- Study location and type of hospital
- Study design
- Sample size and characteristics
- Factors contributing to pending claims
- Key findings of the study

Data Analysis

Data were analyzed using a narrative and thematic synthesis approach. Factors contributing to pending claims were categorized into several major themes, namely:

1. Administrative factors
2. Technical and clinical factors (diagnosis and procedure coding, medical records)
3. Human resource factors

JURNAL PENELITIAN PROGRESSIF
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4. Information system and policy-related factors

The results of the synthesis are presented in the form of summary tables and analytical descriptive narratives.

Ethical Considerations

This study did not involve direct human subjects and utilized secondary data obtained from published scientific articles; therefore, ethical approval was not required. Nevertheless, research ethics were upheld through proper citation practices and appropriate acknowledgment of original sources.

Study Limitations

The limitations of this study include the potential for publication bias, restriction to articles published in Indonesian and English, and variability in study designs and methodological quality among the included studies.

RESULTS

The literature search was conducted using several national databases and open-access journal portals, including Google Scholar, Portal Garuda, and Open Journal Systems (OJS), employing keywords such as *pending claim*, *BPJS claims*, *INA-CBGs*, and *hospital*. The publication period was limited to 2020–2025 to ensure the relevance and currency of the findings.

The initial search yielded a number of articles that were subsequently screened following the PRISMA stages of identification, screening, eligibility, and inclusion. Articles that were not relevant to inpatient BPJS pending claims, duplicate publications, and those without full-text access were excluded. At the final stage, a total of 9 articles met the inclusion criteria and were included in the analysis.

Table 1. Summary of Reviewed Studies on Pending JKN Claims

No.	Author(s) (Year)	Study Location	Method	Focus	Findings
1	Heryani N, Purwaningsih E (2024)	Siaga AL Munawwarah Hospital, Samarinda	Qualitative	INA-CBGs forms & pending claims	Claim form completion was associated with pending claims, (Heryani & Purwaningsih, 2024).
2	Dinnillah et al. (2024)	Hospital X, Bogor	Qualitative	Causes of pending claims	Mismatch in diagnostic codes, incomplete

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					patient files, differences of opinion regarding medical and administrative aspects, (Dinnillah et al., 2024).
3	Putri & Novratilova (2025)	Mardi Waluyo Hospital, Lampung	Qualitative	Contributing factors	Administrative, technical, and human resource factors triggered pending claims, (Putri & Novratilova, 2025).
4	Zalukhu et al. (2024)	Kembangan General Hospital, Jakarta	Descriptive mixed-methods	Causes of delayed claims	Diagnosis and procedure coding issues, (Zalukhu et al., 2024).
5	Meiningtyas & Maulina (2025)	Pertamina Central Hospital, South Jakarta	Quantitative	Factors of delayed claims	Administrative and coding mismatche, (Meiningtyas & Maulina, 2025).
6	Dartini et al. (2024)	Wangaya General Hospital, Bali	Descriptive	Coding discrepancies	Frequent mismatches in diagnoses and procedures, (Dartini et al., 2024).
7	Putri et al. (2024)	Hospitals in West Sumatra	Qualitative	Late claim payments	Human resources and SOPs played a significant

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					role, (Putri et al., 2020)
8	Istianingsih et al. (2025)	Bondowoso General Hospital	Qualitative	Pending claim factors	Human resources and documentation procedures, (Istianingsih et al., 2025)
9	Zalukhu et al. (2025)	Scoping review study	Literature review	Pending claim factors	Administrative and technical themes were dominant

Identification of Factors Contributing to Pending Inpatient Claims in the JKN System

The literature search and selection process revealed that all reviewed studies reported the presence of specific factors contributing to pending inpatient claims under the BPJS Kesehatan scheme. These factors are complex and interrelated in nature. Overall, the analyzed studies identified that pending claims primarily result from incomplete claim documentation, discrepancies in diagnosis and procedure coding, errors in medical record completion, limited competency of claim officers, and issues related to information systems and verification procedures. These findings were consistently reported across different types of hospitals and geographical settings, indicating that pending claims represent a systemic issue in the implementation of the JKN program rather than isolated problems at the individual hospital level.

Categorization of Factors Contributing to Pending Inpatient Claims

Based on the synthesis of the reviewed studies, factors contributing to pending inpatient claims can be categorized into four main aspects.

Administrative Factors

Administrative factors were the most frequently reported causes of pending claims in the literature. Common administrative issues included incomplete claim documents, unsigned medical discharge summaries, discrepancies between the Participant Eligibility Letter (SEP) data and medical records, and the absence of supporting diagnostic examination results. Most studies indicated that administrative incompleteness prevents claims from passing the BPJS Kesehatan verification process, resulting in their return as pending claims.

Technical/Clinical Factors

Technical or clinical factors are related to the quality of medical service documentation. These include inconsistencies between the primary diagnosis and the patient's clinical condition, omission of secondary diagnoses or comorbidities, and inaccuracies in the documentation of

JURNAL PENELITIAN PROGRESSIF
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medical procedures. Such issues directly affect the alignment of claims with INA-CBGs tariffs, thereby increasing the likelihood of claim delays.

Human Resource Factors

Several studies highlighted the role of human resources in the occurrence of pending claims, particularly the limited competency of coders and claim officers, insufficient training related to INA-CBGs and BPJS regulations, high workload, and shortages of qualified personnel. These conditions contribute to increased data entry errors and reduced overall quality of claim documentation.

Supporting System Factors

Supporting system factors include limitations in the Hospital Management Information System (SIMRS), disruptions in system bridging with the INA-CBGs platform, and inconsistencies between clinical and administrative data. The literature indicates that suboptimal information systems increase the likelihood of claim errors and slow down both the submission and verification processes.

The Role of Coding Discrepancies and Incomplete Medical Records in Pending Claims

The review findings indicate that discrepancies in diagnosis and procedure coding, as well as incomplete medical records, are key contributors to pending inpatient claims. Major issues reported include diagnosis codes that do not align with clinical notes, incomplete documentation of medical procedures, and the omission of secondary diagnoses or comorbidities, which subsequently affect INA-CBGs grouping. These conditions result in claims failing to meet BPJS Kesehatan verification standards and being returned for revision. Therefore, the quality of medical records and the accuracy of coding play a strategic role in ensuring a smooth claim submission process.

Impact of Pending Claims on Hospital Financial and Operational Performance

The reviewed literature demonstrates that pending claims have significant impacts on hospitals, particularly in terms of cash flow due to delayed claim payments, availability of operational funds including for the procurement of medicines and medical devices additional workload arising from claim revision and resubmission processes, and reduced service efficiency, especially in hospitals with a high proportion of JKN patients. Several studies also note that a large volume of pending claims may threaten hospitals' long-term financial stability.

Recommendations for Improving Claim Management and Preventing Pending Claims

Based on the synthesis of the literature, several evidence-based recommendations can be proposed, including improving the completeness and quality of medical record documentation, strengthening the competencies of coders and claim officers through continuous training, implementing standardized claim-related standard operating procedures (SOPs) understood by all relevant teams, optimizing information systems and enhancing SIMRS integration with BPJS platforms, and reinforcing coordination among physicians, coders, and claim units. These recommendations are expected to serve as a foundation for improving claim management and reducing the incidence of pending inpatient claims within the JKN system.

JURNAL PENELITIAN PROGRESSIF
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DISCUSSION

Pending Claims as a Systemic Phenomenon in Hospitals

The main findings indicate that pending claims are not sporadic occurrences but rather a recurring systemic issue across many hospitals in Indonesia. Pending claims are often triggered by administrative or technical verification errors that result in claims being returned by BPJS Kesehatan to hospitals for correction. This situation reflects a misalignment between hospital operational practices and the prevailing BPJS Kesehatan claim verification policies. Administrative and technical factors have consistently been identified as the primary causes of delayed claims within the JKN system in Indonesian hospitals

The Role of Administrative Factors

The review findings highlight that administrative aspects including incomplete documentation, discrepancies in SEP data, and inconsistencies in supporting documents are the most frequently cited factors in the reviewed studies. A study conducted at RSUD Dr. Moewardi found that incomplete supporting documents and basic claim files were the leading causes of pending inpatient claims, accounting for more than half of the analyzed cases, (Harti et al., 2016). This finding is consistent with other studies demonstrating that administrative discrepancies or missing documentation often prevent claims from being fully processed by BPJS Kesehatan verifiers, (Nabila et al., 2020).

Coding Discrepancies and Incomplete Medical Records

Technical factors are closely associated with inaccurate diagnosis and procedure coding, as well as incomplete or inconsistent medical records. A study conducted at RSUD Wangaya identified various discrepancies in diagnosis and procedure codes, which frequently constituted the main reasons for claim files being returned. Similarly, studies by Putri et al. and other articles report that inaccurate diagnostic coding, administrative issues, and incomplete medical documentation increase the frequency of pending claims, as the INA-CBGs system requires precise determination of diagnosis and procedure codes. Research at RSUD Dr. Pirngadi further demonstrated that differences in interpretation between hospital coders and BPJS verifiers regarding diagnosis documentation and procedure coding exacerbate this problem, indicating a close interaction between human resource competence and technical aspects of claim management.

Human Resource Factors in the Claim Process

Human resources play a central role in determining the success of BPJS claim management. Findings from Johanna et al. indicate that pending claims occur partly because claim officers do not routinely check the completeness of medical records prior to submission (Christy et al., 2024). This highlights the importance of consistency, accuracy, and accountability among personnel involved in the claim preparation process.

JURNAL PENELITIAN PROGRESSIF
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The Role of Technological Systems and SIMRS Integration

Scoping review articles emphasize that supporting systems, particularly the integration between the Hospital Management Information System (SIMRS) and the BPJS INA-CBGs claim system, remain suboptimal. System fragmentation and technical disruptions may result in incomplete data transmission or upload errors during claim submission, thereby increasing the risk of pending claims (Zalukhu & Permanasari, 2025b).

Impact of Pending Claims on Hospital Financial and Operational Performance

The most tangible impact of pending claims is disruption to hospital cash flow (Utami et al., 2024). The reviewed studies indicate that delays in claim payments due to pending status increase administrative workload through repeated file revisions and interfere with hospital financial planning. This condition is particularly significant in hospitals where the majority of patients are JKN beneficiaries, as operational financing is highly dependent on BPJS claim reimbursements.

Integration of Findings with JKN Policy and INA-CBGs Practices

These findings reinforce the notion that although the INA-CBGs system is designed to enhance efficiency and cost control, it also presents substantial operational challenges in practice. Coding inaccuracies, incomplete documentation, and weak claim governance within hospitals are repeatedly associated with pending claim status. This context underscores the need for stronger alignment between policy implementation by BPJS Kesehatan and hospital-level practices, particularly in terms of understanding and applying standardized claim verification procedures (Putri et al., 2025).

Evidence Based Recommendations

Based on empirical evidence from the reviewed literature, several strategic recommendations can be proposed: strengthening medical record documentation and standard operating procedures for diagnosis and procedure coding to reduce technical errors; enhancing training for human resources, particularly coders and claim officers, to improve understanding of INA-CBGs; optimizing technological systems, especially SIMRS integration with claim applications, to enable more accurate and efficient verification; and improving cross-unit coordination within hospitals to minimize data entry errors and accelerate claim file correction processes. This is reinforced by the results of research by Mathar I, et al. 2024. The absence of an integrated internal control system and early detection has been identified as a major obstacle to effective JKN claims management, (Mathar et al., 2025).

CONCLUSION

Based on the findings of this systematic literature review, pending inpatient claims within Indonesia's National Health Insurance (Jaminan Kesehatan Nasional, JKN) system represent a persistent problem across various hospital types and levels. The literature indicates that pending claims are not caused by a single factor, but rather by a combination of administrative, technical/clinical, human resource, and supporting system-related factors. Administrative issues, particularly incomplete and inconsistent claim documentation, are the most frequently reported and dominant causes in the majority of studies.

JURNAL PENELITIAN PROGRESSIF
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Furthermore, discrepancies between diagnosis and procedure coding and patients' actual clinical conditions, as well as incomplete medical record documentation, contribute substantially to the occurrence of pending claims. Human resource factors including coder competency, understanding of JKN regulations, and the workload of claim officers further increase the risk of errors during the claim submission process. Limitations in the integration between hospital information systems and the BPJS Kesehatan claim system are also reported as contributing factors that delay claim verification. The impact of pending claims extends beyond administrative inefficiencies, affecting hospital cash flow, operational efficiency, and the sustainability of healthcare service delivery.

Recommendations

Based on these findings, strengthening integrated inpatient claim management is essential through improvements in administrative quality, accuracy of INA-CBGs coding, and completeness of medical record documentation from the point of care delivery. Hospitals should optimize the role of internal claim audits and enhance human resource capacity through continuous training on JKN regulations and claim processing procedures. Optimizing information systems particularly the integration of Hospital Management Information Systems (SIMRS) with the BPJS Kesehatan claim system represents a strategic measure to reduce the risk of pending claims. Clearer and simplified claim verification standards, along with strengthened communication and coordination between hospitals and BPJS Kesehatan, are necessary to minimize differences in interpretation during the claim process. Future research is recommended to quantitatively examine the relationships between contributing factors and the magnitude of their impact on hospital performance, as well as to assess the effectiveness of technology- and management based interventions in reducing the incidence of pending inpatient claims within the JKN system.

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