
JKN Claim Optimization Strategy in Indonesian Hospitals: Literature Review

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Abstract

National Health Insurance (JKN) claims management in Indonesian hospitals still faces various obstacles, such as high pending claims, incomplete medical records, diagnostic and treatment coding errors, limited human resource (HR) competency, and suboptimal integration of the Hospital Management Information System (SIMRS) with the BPJS Kesehatan application. These conditions result in delays in claim disbursement, cash flow disruptions, and the risk of declining service quality. This literature review aims to identify the main factors causing delayed claims and summarize effective JKN claim optimization strategies in Indonesian hospitals. Methods: A literature search was conducted on Google Scholar, Garuda, and DOAJ databases for articles published in 2022–2025 with keywords related to JKN/BPJS claims, INA-CBGs, pending claims, claims management, and SIMRS. Articles that met the inclusion criteria were analyzed narratively and synthesized based on a management framework (HR, procedures, information technology, and finance). Strategies consistently recommended in the literature include strengthening the competency of coders and internal verifiers through ongoing training, standardizing claims SOPs and strengthening quality control and cost control, optimizing SIMRS–BPJS integration (end-to-end bridging) to ensure the completeness and accuracy of claim files, and strengthening coordination across units and with BPJS Kesehatan. Strategic management approaches (e.g., 4M/5M, POAC, TQM) have been shown to contribute to a reduction in pending claims and accelerated claim disbursement. Optimizing JKN claims requires integrated interventions across human resources, procedures, information technology, and financial governance. Hospitals are advised to adopt a structured strategic management model, establish claims management performance indicators, and accelerate information system integration to improve the timeliness and quality of claims.

Keywords: *JKN Claims, BPJS Health, INA-CBGs, Pending Claims, SIMRS, Hospital Management.*

INTRODUCTION

Since the implementation of the National Health Insurance (JKN), Indonesia's healthcare financing system has undergone a fundamental shift from fee-for-service to prospective payments based on INA-CBGs. This shift requires hospitals to manage services more efficiently without sacrificing quality. In practice, JKN claims management still faces various operational challenges, including high pending claims, incomplete and late medical record submissions, inaccurate diagnosis and treatment coding, and the ever-evolving regulatory dynamics of BPJS Kesehatan (Social Security Agency for Health). These issues directly impact claims disbursement delays and have the potential to disrupt hospital cash flow stability, particularly in hospitals with a high proportion of JKN patients.

In addition to administrative and clinical factors, other challenges in managing JKN claims relate to human resource (HR) capacity and information system readiness. The limited number and competence of internal coders/verifiers, weak standardization of operational procedures (SOPs) for claims, and the suboptimal integration of the Hospital Management Information System (SIMRS) with the BPJS Kesehatan application result in inefficient and error-prone claims processing. Various studies have shown that strengthening HR competency, standardizing the claims process, and utilizing information technology through SIMRS integration (end-to-end bridging) play a crucial role in reducing the number of pending claims and accelerating the claims verification process.

Various management approaches have been proposed to address the JKN claims problem in hospitals, such as the 4M/5M framework (Man, Money, Method, Machine/Material), the POAC management function (planning, organizing, actuating, controlling), and the implementation of Total

Quality Management (TQM). However, research findings in various hospitals show variations in strategies, implementation contexts, and levels of effectiveness. Therefore, a synthesis of scientific evidence is needed that summarizes key inhibiting factors and JKN claim optimization strategies that have proven effective in the Indonesian hospital context. This literature review was compiled to map problem patterns and summarize best practices in JKN claim optimization as a basis for applicable managerial policy recommendations for hospital managers. This literature review contributes a structured synthesis across management frameworks (4M/5M, POAC, TQM, SWOT) that can be used as a practical implementation model for hospital management to reduce pending claims and accelerate the claims cycle.

RESEARCH METHODS

This study uses a narrative literature review design to synthesize scientific findings related to National Health Insurance (JKN) claims optimization strategies in Indonesian hospitals. The narrative approach was chosen to provide conceptual mapping and thematic integration across studies with varying designs, institutional contexts, and managerial approaches.

A literature search was conducted using Google Scholar, Garuda, and DOAJ databases. The search was conducted using a combination of keywords in Indonesian and English, including: JKN hospital claims, BPJS claim optimization, BPJS pending claims, INA-CBGs hospital claims, hospital claim management, and SIMRS BPJS claims. Articles considered were published between 2022 and 2025 to ensure relevance to current regulatory dynamics and practices in JKN claims management.

Inclusion criteria in this review include:

1. Research articles that discuss the management, evaluation, or optimization strategies of JKN/BPJS claims in Indonesian hospitals;
2. Using qualitative, quantitative, or mixed methods research designs;
3. Available in full-text form;
4. Published in national scientific journals.

Exclusion criteria include:

1. Articles that do not focus on the hospital context (e.g. primary health care facilities);
2. Conceptual article without empirical data;
3. Articles that do not discuss strategies or factors influencing claims;
4. Publication duplication.

The selection process was carried out in stages, including initial identification of articles based on database search results, title and abstract screening to assess relevance to the research objectives, and full-text review to ensure compliance with the inclusion criteria. The initial search yielded 32 articles. After removing duplicates and screening based on relevance criteria, seven articles met the criteria and were included in the final synthesis. In addition to the articles primarily synthesized, several other relevant studies were used as supporting references to enrich the conceptual analysis.

- 1) The analysis was conducted narratively-thematically by grouping the findings based on the health service management framework, including: human resources (HR) aspects,
- 2) claims procedures and governance,
- 3) information technology and SIMRS integration, as well as
- 4) financial aspects and cost control.

Each article is summarized in a synthesis table that includes the study location, design/methods, key claim issues, recommended optimization strategies, and key findings. The synthesis was conducted to identify recurring problem patterns and formulate applicable managerial recommendations for hospitals.

As a narrative literature review, this study does not conduct a formal methodological quality assessment (critical appraisal) of each article, but instead focuses on integrating the findings to produce a comprehensive strategic mapping.

RESULTS AND DISCUSSION

Seven articles meeting the inclusion criteria were analyzed to identify problem patterns and strategies for optimizing JKN claims in Indonesian hospitals. In general, literature findings indicate that pending claims are influenced by consistent factors across studies, namely: (1) incomplete medical records and inaccurate coding; (2) limited competence and number of human resources (coders/internal verifiers); (3) the absence or weakness of claims SOPs and suboptimal cross-unit coordination; and (4) the lack of integration of SIMRS with the BPJS Kesehatan application (end-to-end bridging). The main impacts reported were delays in claims disbursement and disruptions to hospital cash flow.

Consistently recommended optimization strategies include: strengthening human resource competencies through ongoing training, standardizing claims and quality control–cost control (KMKB) SOPs, optimizing SIMRS–BPJS integration to ensure completeness and accuracy of files, and strengthening coordination across units and with BPJS Kesehatan. Several studies also emphasize the effectiveness of implementing a strategic management approach (4M/5M, POAC, TQM) in reducing the number of pending claims and accelerating the claims verification/disbursement process.

Table 1. Literature Synthesis Table

No	Author (Year)	Location/Object	Design	Main Claim Issues	Optimization Strategy	Key Findings
1	Rahayu et al. (2025)	Bandung City Hospital	Qualitative (SWOT, IFE–EFE; 4M)	Pending claims, INA-CBGs mismatch, SIMRS–finance integration is not optimal	Strengthening RS-BPJS coordination, coder/verifier training, end-to-end SIMRS bridging, KMKB	ST's strategic position; integrated strategy accelerates claims & stabilizes cash flow
2	Simbolon et al. (2024)	Pertamina Sorong Hospital	Descriptive qualitative	Incomplete files, coding errors, untrained human resources	Managerial strategy, claims HR training, SOP improvement	Managerial approach reduces pending claims
3	Utami et al. (2025)	UNS Surakarta Hospital	Qualitative (POAC)	Pending claims due to medical, coding, and administrative aspects; SOPs are not yet standardized	Preparation of SOP, job description division, RME implementation	POAC + SOP reduces pending claims
4	Herawati & Gurning (2025)	Hospital X Serdang Bedagai	Quantitative (IPA–TQM)	Coordination & continuous improvement are not optimal	TQM implementation, strengthening cross-unit communication	TQM contributes to a decrease in pending claims
5	Putri & Novratilova (2025)	Mardi Waluyo Hospital, Lampung	Qualitative (5M)	Lack of coding training, claims SOP is not yet official, SIM is not yet integrated	Regular training, integrated SOPs, verification improvements	5M effectively maps root causes & solutions

6	Variza (2025)	Bhayangkara Hospital Bengkulu	Quantitative (logistic regression)	SIMRS–BPJS integration is weak, information quality is low	SIMRS optimization (information quality & bridging)	SIMRS increases the acceleration of claim files (high OR)
7	Mathar et al. (2024)	Hospital X (Madiun)	Descriptive qualitative	Incomplete files, coding errors, weak internal policies	Hospital Policy: New SOP, Coder Training, RM Supervision	Internal policies reduce pending claim cases

Discussion

The literature review shows that the challenges of JKN claims in Indonesian hospitals are multifactorial and relatively consistent across both public and private hospitals. Recurring and dominant factors include human resources (coder and internal verifier competencies), claims procedures and governance (SOPs, cross-unit workflows), information technology (integration of the Hospital Management Information System (SIMS) with the BPJS Kesehatan application), and cost control and financial governance. These findings reinforce the point that optimizing JKN claims cannot be resolved through a single intervention but requires a systemic, integrated, cross-functional approach.

1. Human Resources Dimension: Coder and Verifier Competencies as Key Determinants

The literature consistently places the competence of coders and internal verifiers as the primary determinants of claim eligibility. Diagnosis/treatment coding errors and incomplete medical records significantly contribute to pending claims. Quantitative studies show that coding accuracy is strongly associated with claim eligibility, while qualitative studies emphasize the importance of ongoing training and internal supervision mechanisms. In a managerial context, strengthening human resources not only means technical coding training (ICD-10/ICD-9-CM/ICHI), but also improving BPJS regulatory literacy, understanding of INA-CBGs, and pre-claim audit capabilities. The implementation of internal physician verifiers has been shown to minimize mismatches between clinical and administrative documentation, thereby reducing the risk of claims being returned. Quantitative studies using logistic regression analysis show that the quality of SIMRS integration is significantly associated with accelerated claim file collection (high OR), indicating the crucial role of information systems in the claims cycle.

2. Procedures and Governance: SOP, POAC, and Quality Control–Cost Control

The absence or weakness of claims SOPs and the division of roles across units (DPJP, nurses, medical records, casemix, finance) contribute to the fragmentation of the claims process. The POAC (planning, organizing, actuating, controlling) approach provides an implementation framework to close governance gaps: standardized claims document planning, clear job description organization, periodic internal audits, and control through performance indicator-based feedback (e.g., pending claims ratio, claims cycle time, file return rate). On the quality and cost side, the KMKB is relevant for aligning clinical practices with INA-CBGs financing without compromising service quality. Integrating the KMKB with pre-submission claims audits helps reduce claim disputes while maintaining the hospital's financial sustainability.

3. Information Technology: Bridging SIMRS–BPJS as an Operational Enabler

Nearly all studies confirm that the suboptimal integration of the SIMRS with the BPJS system (end-to-end bridging) is an operational bottleneck. Information quality (completeness, accuracy, timeliness) has been shown to strongly correlate with the acceleration of claim file collection. Digitizing the claims process, accompanied by automated validation (mandatory fields for medical resumes, claim document checklists, SEP–grouper–billing synchronization), reduces administrative errors and rework. However, the literature also notes implementation challenges such as user

resistance, duplication of input between units, and interoperability issues. Therefore, the optimal strategy is not simply SIMRS procurement, but rather change management: user training, business process re-engineering, and data governance to ensure SIMRS integration truly results in claims cycle efficiency.

4. Strategic Management Approaches: 4M/5M, TQM, and SWOT as Complementary Frameworks

The various management frameworks used in the literature—4M/5M, TQM, and SWOT—are complementary. SWOT is effective for mapping strategic positions and prioritizing interventions (e.g., maximizing internal strengths to respond to regulatory threats/tariff mismatches). The 4M/5M framework facilitates the diagnosis of root causes across domains (HR, procedures, technology, finance). TQM, on the other hand, emphasizes continuous improvement through cross-unit communication and process standardization. The integration of the three creates a complete improvement cycle: SWOT for prioritization, 4M/5M for intervention design, and TQM/POAC for implementation and ongoing control.

5. Managerial Implications and Financial Governance

From a governance perspective, pending claims directly impact cash flow and the hospital's capacity to maintain service quality. The literature emphasizes the need for key performance indicators (KPIs) for claims management, including: claims cycle time (days to cash), pending claims ratio, dispute ratio, and first-pass yield (claims passed verification on the first submission). Strengthening the cross-functional JKN/casemix team with a clear mandate accelerates issue escalation and coordination with BPJS. Furthermore, a claims performance-based incentive policy (without encouraging upcoding) can improve process compliance, as long as it is accompanied by compliance audits and clinical ethics.

6. Evidence Gaps and Research Agendas

Although empirical evidence supports the effectiveness of HR training, SOPs, and SIMRS integration, the literature is still dominated by single-hospital case studies and descriptive designs. This limitation leaves room for comparative research across hospital types (A–D; BLUD vs. private) as well as before-after evaluations of specific interventions (e.g., the impact of SIMRS bridging implementation on reducing pending claims and claims cycle times). Moving forward, standardized KPI-based measurement and cost-of-quality reporting are essential for assessing the cost-effectiveness of claims optimization strategies.

7. Synthesis of Practical Recommendations

Based on cross-study synthesis, the most robust intervention package includes: (1) Strengthening human resources through BPJS coding/regulation training and internal verifiers; (2) Standardization of claim SOPs + pre-submission audits + KMKB; (3) End-to-end SIMRS–BPJS bridging with automatic validation and data governance; (4) Cross-unit JKN teams with claim KPIs and regular RS–BPJS coordination forums; (5) Change management to ensure system adoption and process compliance.

The integrated implementation of this package has the potential to reduce pending claims, accelerate claim disbursement, and maintain financial sustainability without sacrificing service quality.

CONCLUSION

This literature review shows that the National Health Insurance (JKN) claims issues in Indonesian hospitals are multifactorial and relatively consistent across institutional contexts. The main factors contributing to pending claims include incomplete medical records and inaccurate coding, limited competency and number of human resources (coders and internal verifiers), weak standardization of claims procedures, and suboptimal integration of the Hospital Management Information System (SIMRS) with the BPJS Kesehatan system. The impact of these issues is evident in delays in claims disbursement, cash flow disruptions, and potential declines in service performance.

Proven claims optimization strategies consistently in the literature include strengthening human resources through ongoing training, standardizing claims SOPs accompanied by pre-submission audits and quality control–cost control (KMKB), optimizing SIMRS–BPJS integration (end-to-end bridging) to improve completeness and accuracy of files, and strengthening coordination across units and with BPJS Kesehatan. Strategic management approaches such as 4M/5M, POAC, TQM, and SWOT are complementary and effective when applied in an integrated manner for problem mapping, improvement implementation, and ongoing control. Overall, optimizing JKN claims requires systemic intervention across operational domains and hospital governance.

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