FACTORS CAUSING PENDING BPJS HEALTH CLAIMS IN HOSPITALS: A QUALITATIVE STUDY

Yeni Tri Utami 1 *, Warsi Maryati 2, Aloysios Eka Wardaya 3
Universitas Duta Bangsa Surakarta 1,2,3
*Correspondence Email: yeni_tri@udb.ac.id

ABSTRACT

Pending BPJS Kesehatan claims remain a problem in hospital financing management. Based on BPJS Kesehatan data in 2024, approximately 3 percent of healthcare claim costs, or approximately IDR 5 trillion, were recorded as pending claims, and this trend has reportedly increased significantly in several hospitals, including Indriati Solobaru Hospital. This study aims to identify the factors causing pending claims. The research method used descriptive qualitative with a cross-sectional approach. The object of the study was inpatient claims data at Indriati Solobaru Hospital in 2025. The research subjects were 11 claims officers selected purposively. Qualitative data were collected through focus group discussions and interviews. The results of the 2025 claims data study showed 10,820 inpatient claims, with 3,202 claims (29.59%) pending. Coding factors were the largest category (60.27%), followed by medical aspects (26.20%) and administration (13.52%). Analysis of the results of claims officer interviews revealed five interrelated factors, namely incomplete and inconsistent clinical documentation, coding complexity and clinical suitability, regulatory dynamics, governance and cross-professional coordination, and limited integration of RME-SIMRS-INA-CBGs. These results indicate that pending claims are a multidimensional problem that requires hospitals to address them by simultaneously improving clinical documentation, coding, regulatory adaptation, coordination, and system integration as an effort to increase claim success.

KEYWORDS Pending claims; BPJS Health; clinical coding; medical records; qualitative studies

This work is licensed under a Creative Commons Attribution- ShareAlike 4.0 International

INTRODUCTION

The National Health Insurance System (JKN) places the claims mechanism as a crucial part of the financing relationship between hospitals and BPJS Kesehatan. Accurate submissions, complete documentation, and efficient administrative processes impact smooth payments and hospital financial sustainability (Paramarta et al., 2025). In practice, some claims cannot be immediately approved and are returned for clarification or correction. This situation increases the workload of staff, prolongs the claims settlement cycle, and potentially hinders hospital revenue.

Various studies have shown that pending claims are not caused by a single factor. Incomplete medical record documentation, non-compliance with administrative requirements, inaccurate diagnosis and treatment codes, and discrepancies between clinical information and claim provisions are all factors repeatedly reported (Wahyuni et al., 2024; Rohaeni & Maulida, 2025; Christy et al., 2024; Octaviani & Susanti, 2024). Yastori (2023) demonstrated that diagnostic codification errors can cause problems in INA-CBGs claims, while Astuti and Hidayah (2022) emphasized that the return of inpatient claims is related to the completeness and accuracy of claim documents.

Clinical documentation plays a crucial role because coders assign codes based on information recorded by medical personnel. Incomplete or inconsistent documentation can create ambiguity in coding and complicate verification of clinical appropriateness. Rohaeni and Maulida (2025) reported that complete medical record documentation supports smooth INA-CBGs claims processing. At the same time, research on coding accuracy indicates that the quality of medical information and coding accuracy have direct implications for claim validity and casemix-based financing.

In addition to clinical and coding factors, the claims process involves complex organizational governance. Doctors, coders, medical records officers, internal verifiers, casemix teams, and information technology officers have interrelated functions. Research by Utami et al. (2024) shows that efforts to reduce pending claims through the Planning, Organizing, Actuating, and Controlling approach still face challenges in task allocation, SOPs, coordination, and evaluation. Evaluations of internal verifiers also emphasize the importance of role clarity, communication, monitoring, and follow-up in the claims process (Nasution et al., 2023; Hasibuan et al., 2025).

The dynamics of BPJS Kesehatan policies also impact the claims management process. Changes in provisions and differences in interpretation can necessitate rapid adjustments at the hospital level. If regulatory information is not promptly translated into work procedures, differences in understanding between clinical staff, coders, verifiers, and BPJS can increase the risk of claims being returned. Previous research by Zalukhu and Permanasari (2025) showed that factors contributing to pending claims in Indonesian hospitals include coding, document completeness, information systems, human resource competency, SOP implementation, and inter-unit coordination.

Digital transformation through Electronic Medical Records (EMDR) and claims information systems offers opportunities to improve data availability and process efficiency. However, technology implementation is not always accompanied by complete integration. Repeated data input, manual verification, connection disruptions, and limitations in claims status monitoring can still occur. Winarsih et al. (2024) reported that EMR provides benefits for the claims process but still faces technical and operational challenges. The development of data bridging and monitoring dashboards has been proposed to improve data exchange and claims monitoring (Kurniawan et al., 2022; Lesmana & Taufik, 2023).

Most previous research has addressed factors in pending claims based on document reviews or focused on specific aspects. However, understanding the mechanisms that lead to pending claims requires a multiprofessional perspective, as problems can arise from clinical documentation, coding, verification, administration, and information system integration. Qualitative exploration allows for a more in-depth identification of experiences, barriers, and differences in interpretation between professionals.

This study aims to identify and explain the factors causing pending BPJS Kesehatan claims at Indriati Hospital, Solobaru, based on the perspective of personnel directly involved in claims management. The results are expected to provide a more comprehensive understanding of the interrelationships between clinical factors, coding, regulations, governance, human resources, and information systems as a basis for improving claims management in the hospital.

RESEARCH METHOD

This study used a descriptive qualitative method with a cross-sectional approach. The object of this study was secondary data on inpatient claims at Indriati Hospital, Solobaru, in 2025. Secondary data were used to describe the number and proportion of pending claims per month and the distribution of causes of pending claims based on three aspects: medical, coding, and administrative. This situational analysis was used as a context to deepen the qualitative exploration of the mechanisms and factors causing pending claims.

The subjects of this study were 11 informants involved in the study, consisting of 2 internal verifiers who were also medical personnel/doctors, 1 head of the medical records unit, 3 BPJS Kesehatan claim coders, 3 officers in charge of Medical Records/Medical Records and Health Information (PJRM/RMIK), and 2 information technology (IT) officers. The respondents of this study were multiprofessional used to obtain a variety of perspectives on clinical aspects, documentation, coding, verification, governance, and information systems.

Data was collected through focus group discussions (FGDs) and interviews using an interview guide. Questions focused on factors causing pending claims, the claims submission and management process, obstacles encountered at each stage, and informants' experiences in resolving pending claims. All three data collection techniques were treated as complementary sources of information.

Data were analyzed thematically through repeated readings, identification of meaning units, coding, grouping codes with similar meanings into categories, and developing causal factors for pending claims through cross-informant analysis. Interprofessional perspectives were compared to identify commonalities and variations in experiences. Themes were reviewed against the source data, while representative verbatim quotations were selected to support interpretations. Informant identities were presented in professional codes to maintain confidentiality.

RESULTS AND DISCUSSION

1. Overview of Pending Inpatient Claims in 2025

Claims data at Indriati Solobaru Hospital shows that between January and December 2025, 10,820 inpatient claims were submitted, with 3,202 pending. This represents an annual pending claim proportion of 29.59%. The pending claim proportion fluctuated between months, from 20.23% in May to 41.32% in June. In addition to June, high proportions were also observed in September (39.74%) and October (36.32%). This pattern

indicates that pending claims occur repeatedly throughout the year and their intensity varies between periods. The following is data on pending inpatient claims at the hospital in 2025:

Table 1. Distribution of Pending Inpatient Claims per Month in 2025

Month	Number of Claims	Pending Claim	Percentage (%)
January	888	221	24.89
February	787	219	27.83
March	1,001	239	23.88
April	902	212	23.50
May	974	197	20.23
June	801	331	41.32
July	946	313	33.09
August	849	258	30.39
September	911	362	39.74
October	870	316	36.32
November	896	260	29.02
December	995	274	27.54
Total	10,820	3,202	29.59

Based on the data in the table above, the number of pending claims fluctuates from month to month. These results require careful examination because the data only indicates when the increase in pending claims occurred, but does not yet explain the factors causing these pending claims. Nevertheless, this fluctuating trend provides important insight that hospitals need to conduct regular monthly monitoring, not just evaluate total claims at the end of the year. The exact causes of delays at each stage of the application process are further analyzed through qualitative findings.

2. Distribution of Pending Claim Factors Based on Three Aspects

Based on the initial hospital classification, 3,202 pending claims were grouped into medical, coding, and administrative categories. Coding accounted for the largest number of claims, accounting for 1,930 cases (60.27%), followed by medical claims with 839 cases (26.20%), and administrative claims with 433 cases (13.52%). The following are the factors contributing to pending inpatient claims in hospitals in 2025, based on these three categories:

Table 2. Distribution of Pending Claims Based on Causal Aspects

Causal Aspects	Amount	Percentage (%)
Medical	839	26.20
Coding	1,930	60.27
Administration	433	13.52
Total	3,202	100.00

Based on the table, the large number of pending claims in the coding category cannot be directly attributed to coder negligence. This is because the determination of INA-CBG codes is heavily influenced by the accuracy of the diagnosis, the type of procedure, the examination results, and the quality of the medical records provided by healthcare professionals. Therefore, multiprofessional interviews were conducted to uncover early-stage issues that ultimately led to coding obstacles during the verification stage. Wahyuni et al. (2024) demonstrated that coding accuracy and completeness of files were associated with pending claims, while Yastori (2023) emphasized that coding errors can be influenced by inadequate diagnostic information. These results demonstrate that the cause categories need to be understood as an interrelated whole at every stage of the process.

3. Informant Characteristics and Depth of Perspective

This qualitative research involved 11 multi-professional informants covering all key points of the claims cycle, namely the internal verification team, doctors (medical personnel), medical records, coders, file completeness personnel, and the IT unit. The differences in the length of service of the informants enriched the data analysis, because the information obtained was not limited to explaining not only the causes of pending claims, but also the clarification process, file returns, pre-claim verification, coordination with service units, and obstacles in the support system. In the source data, the work experience recorded included IT-01 5.5 years, IT-02 9 years, PJRM-01 6 years, VER-01 and VER-02 7 years, CDR-01 1 year 8 months, KRM-01 and KRM-02 each 9 years, CDR-02 9 years, PJRM-02 8 years, and PJRM-03 7 years.

4. Interview Results: Factors Causing Pending Claims

The results of the analysis of factors causing pending claims from Focus Group Discussions (FGDs), in-depth interviews, and written interviews with 11 informants indicate that pending claims are not viewed as a stand-alone problem in one unit. From recurring patterns across professions, five main causal factors were identified, namely: (1) clinical documentation, (2) coding and clinical appropriateness, (3) regulations, (4) governance and coordination, and (5) information system integration.

4.1 Incompleteness and Inconsistency of Clinical Documentation

Incomplete clinical documentation was consistently reported by medical record informants and medical personnel. Incomplete claim documents included medical summaries, surgical or delivery reports, and supporting examination results. In addition to completeness, the quality of documentation content was also a concern, as some documented clinical conditions were incomplete and documentation practices were still copy-pasted from previous patient clinical results. This situation can delay the coding process and require re-compiling the file before or after submission.

“Medical resume, surgical report, supporting examinations (example PA results), delivery report.” (PJRM-01)

“Incompleteness of medical record writing, especially repeated clinical conditions (copy-paste).” (DR-01)

"It has an impact because if the medical record is filled out late, the claim will be delayed or become a follow-up file." (PJRM-03)

The shared perception between PJRM/RMIK and physicians indicates that documentation issues are not merely administrative but also concern the quality of clinical information. Rohaeni and Maulida (2025) reported that incomplete medical records can hinder the smooth processing of INA-CBGs claims. Octaviani and Susanti (2024) also identified completeness as a critical component in claims accuracy. Therefore, documentation improvements need to begin during the service process, not just when the file arrives at the claims unit.

“Discharge summaries, operative reports, obstetric/delivery reports, and radiology reports that have not yet been reviewed by the radiologist.” (PJRM-02)

"We check the completeness quantitatively and qualitatively: medical documentation, patient identity, authentication, consistency of diagnosis, and supporting examinations from the time the patient is admitted until they are discharged." (PJRM-03)

Statements from PJRM-02 and PJRM-03 expand on the findings that issues extend beyond the availability of forms to include the readiness of supporting results, authentication, consistency of diagnosis, and timeliness of documentation completion. These findings align with Ramdhani and Habibi (2025), Muchsam et al. (2022), Astuti and

Hidayah (2022), and Rohaeni and Maulida (2025), who identified document completeness and claim requirements as crucial to a smooth claims process.

4.2 Coding Complexity and Clinical Appropriateness

Coders use the entire clinical evidence as the basis for assigning codes, while verifiers emphasize that incomplete physical examinations, complaints, diagnoses, or supporting evidence can lead to medical and coding discrepancies. Furthermore, differences in interpretation of coding rules between coders and verifiers emerge as factors that can lead to claims being returned or requiring clarification.

"Differences in interpretation between coders and verifiers regarding the applicable coding rules." (CDR-01)

"Medical & coding aspects... some physical examinations; complaints: not fully documented, resulting in medical & coding discrepancies according to BPJS." (VER-01)

These results help explain why coding categories dominated the initial data. Problems recorded as coding can stem from initial factors such as documentation and clinical appropriateness. Christy et al. (2024) also found discrepancies between diagnoses and actions and differences in perception between INA-CBGs officers and verifiers. Yastori (2023) emphasized that diagnostic coding errors are one of the causes of pending claims. Therefore, improving coding quality requires physician clarification, review of clinical evidence, and internal verification before claims are submitted.

"We cross-check the results of supporting examinations, anamnesis, indications for hospitalization, primary diagnosis, secondary diagnosis, patient billing, and the actions taken." (CDR-02)

"The strategy is to strengthen claims verification before claims are sent to BPJS." (CDR-02)

The CDR-02 responses indicate that coding quality control in practice requires cross-data review, not just code selection. These results are consistent with Wahyuni et al. (2024), Yastori (2023), Christy et al. (2024), Amani and Pujilestari (2025), and Situmorang et al. (2025), who generally place coding accuracy, completeness of information, and document conformity as important determinants of pending claims. The use of claims data to support diagnostic accuracy also demonstrates that strengthening data quality can be part of coding control.

4.3 Dynamics of BPJS Health Regulations and Policies

Informants assessed regulations as a highly dynamic factor. Changing provisions, dynamic implementation timelines, and differing interpretations demand rapid adaptability and internal adjustments from hospitals. If information is not uniformly understood by doctors, coders, verifiers, and claims officers, the risk of discrepancies during application can increase.

"Sometimes BPJS regulations emerge suddenly, taking longer to adjust to them. Sometimes they're implemented immediately, leaving claims pending." (KRM-02)

"Deepen understanding of related regulations as an initial coding strategy and anticipation in the event of pending issues." (CDR-01)

Zalukhu and Permanasari (2025) identified SOP implementation, human resource competency, and coordination as factors related to pending claims. Utami et al. (2024) also showed that managing pending claims requires clear planning, organizing, implementing, and controlling functions. This study's findings further emphasize the need for routine regulatory adaptation and interpretation alignment mechanisms to ensure that changes to regulations are not merely information but are translated into work procedures.

"Quite often, maybe several times a year, depending on regulations and pending requests." (VER-01)
"Sudden changes to BPJS' information systems and regulations should not be applied immediately to the same claim period." (KRM-02)
"Coordinate with the local BPJS and collaborate to agree on operational interpretations between BPJS and the hospital." (VER-01)

These results indicate that regulatory issues have two layers: the speed of regulatory change and the consistency of their interpretation at the operational level. Zalukhu and Permanasari (2025) identified SOP implementation, human resource competency, and coordination as factors contributing to pending claims. Utami, Maryati, and Rahayuningsih (2024), Wijayanti et al. (2023), and Prawestirini, Syaodih, and Veranita (2025) identified management, coordination, evaluation, and organizational strategy as critical elements in accelerating or resolving claims.

4.4 Cross-Professional Governance and Coordination

Coordination between claims officers at the hospital has been ongoing through direct discussions and regular communication, but the quality of collaboration has not been entirely consistent. One informant cited gaps between professions, while another emphasized the benefits of having verifiers, coders, physicians, PJRMs, and medical records officers in a connected workflow, which is considered to be significantly more effective.

"Quite good, although there is still a professional gap between doctors and medical recorders." (DR-01)
"Always coordinate every day, because the verifiers, coders, doctors, PJRM, and RM officers are all part of one unit." (KRM-01)

These results demonstrate that pending claims are also rooted in governance issues. Nasution et al. (2023) emphasize the role of internal verifiers in checking the completeness and clarifying claims, while Hasibuan et al. (2025) demonstrate the importance of evaluating verifier performance in reducing pending claims. Therefore, a structured coordination mechanism must be established, encompassing a clear division of roles, a tiered handling mechanism, case reviews, and routine monitoring, without relying solely on informal communication.

"Discussion and cooperation." (VER-01)
"Good coordination and relationship between hospitals, BPJS, and implementers." (DR-01)
"If there are pending claims, direct coordination will be carried out with the relevant unit." (KRM-02)

The coordination that emerges in the data is both internal and external. Internally, resolution requires communication between doctors, coders, PJRM/RMIK, verifiers, and medical records; externally, ambiguous cases may require alignment with BPJS. Nasution et al. (2023) and Hasibuan et al. (2025) reinforce the importance of the internal verifier function. Herawati and Gurning (2025) place communication and quality improvement as part of efforts to reduce pending claims. Madania and Aini (2025) also found that compliance with the INA-CBGs process is influenced by staff reliability, DPJP commitment to documentation, regulatory socialization, communication, and workload.

4.5 Integration of RME-SIMRS-INA-CBGs and Digital Validation Requirements

Interviews with IT and medical records informants revealed that digitization plays a crucial role in the claims process, but current system integration in hospitals is not fully automated. Barriers cited include server or connection disruptions, manual verification, re-

entering data into the INA-CBGs application, suboptimal claim status monitoring, and the lack of automated validation and rule-based alerts.

"Server/connection down." (IT-02)

"The data integration process has been carried out, but still requires manual verification." (KRM-01)

"There is still re-input on the INA-CBGs application." (KRM-02)

"There is a warning in the system for BPJS regulations so that pending payments can be reduced." (VER-02)

Winarsih et al. (2024) demonstrated that RME implementation can support the claims process, but can still be plagued by data issues, training, and technical challenges. Kurniawan et al. (2022) and Lesmana and Taufik (2023) demonstrated the importance of bridging and dashboard monitoring in claims management. These research findings emphasize that the presence of RME alone is not sufficient; added value arises when the system is able to reduce re-input, perform validation, and provide more integrated claim status information.

"Not yet." (IT-02, regarding the automatic validation feature)

"There has been no status monitoring." (IT-02)

"Bridging INA-CBGs with SIMRS." (KRM-02)

The results of this study, based on digital factors, indicate a gap between document digitization and claims process integration. Winarsih et al. (2024) reported the benefits of EMR for the claims process, as well as data and technical constraints. Kurniawan, Widatama, and Pasa (2022) discussed bridging inpatient data with INA-CBGs, while Lesmana and Taufik (2023) developed a claims monitoring dashboard. Kustiani, Syahidin, and Yunengsih (2024) developed an EMR system to support reporting on the completeness of BPJS patient medical records. Saputra and Prima (2022) discussed e-claim innovation, while Khoirunnisa et al. (2023) developed a JKN claims information system. All of this evidence supports that integration needs to be directed at data exchange, validation, completeness, and monitoring, rather than simply replacing paper documents with electronic ones.

5. Integration of Factors Causing Pending Claims

Table 3. Integration of Interview Results and Implications for Claims Management

Causative factor	Key Findings	Representative Informant	Implications
Clinical documentation	Incomplete resume/report/supporting documents; copy-paste; late completion	PJRM-01; PJRM-03; DR-01	Improvement of documentation quality and verification of completeness
Coding & clinical compliance	Insufficient clinical evidence; differing coder-verifier interpretations	CDR-01; VER-01	Coding QC, doctor clarification, clinical-coding validation
Regulations/policies	Changes in rules and adaptations are not yet uniform	KRM-02; CDR-01	Regulatory updates and standardization of interpretation
Governance/coordination	Professional gap; cross-unit coordination is not yet structured	DR-01; KRM-01	Role clarity, case review, escalation paths
Digital integration	Downtime, manual verification, re-input, no automatic validation yet	IT-02; KRM-01; KRM-02; VER-02	Bridging, validation,

Causative factor	Key Findings	Representative Informant	Implications
			warning, status monitoring

Overall, the secondary data and interviews revealed complementary patterns. The dominant coding categories in the claims data were not isolated but related to the quality of clinical documentation, regulatory interpretation, interprofessional coordination, and information systems support. Thus, pending claims are better understood as the result of a series of interrelated processes. This qualitative analysis provides an explanation of mechanisms that cannot be captured solely through medical classification, coding, and administration in the secondary data.

The three categories in the secondary data on inpatient claims from 2025, from the medical, coding, and administrative aspects, provide an initial classification of the problem areas, while interviews explain the mechanisms that shape these categories. For example, the dominance of coding, at 60.27%, cannot be separated from the clinical documentation and supporting evidence that form the basis for code assignment. Conversely, administrative issues can overlap with SEP readiness, billing, authentication, and the document collection process. This pattern is consistent with Ramalinda et al. (2022), Wahyuni et al. (2024), Octaviani and Susanti (2024), Amani and Pujilestari (2025), and Situmorang et al. (2025), which demonstrate heterogeneity in the causes of pending claims across hospitals.

The results of a multiprofessional study also show that the cause of pending claims is the cumulative impact of obstacles along the process. Late or incomplete documentation can delay coding; clinical ambiguity can prompt clarification; differing regulatory interpretations can result in mismatches in verification; and limited system integration prolongs the process because data still needs to be verified or re-entered. Therefore, pending claims are better understood as an indicator of claims readiness at multiple points in the process rather than a single, late-stage error.

From a management perspective, these results support the need for pre-submission controls through complete documentation, quality control coding, internal verification, regulatory updates, and cross-professional coordination. Utami et al. (2025), Utami et al. (2024), Wijayanti et al. (2023), Herawati and Gurning (2025), and Prawestirini et al. (2025) all place management and process improvement as crucial aspects of claims handling. This approach is relevant for shifting work patterns from a corrective approach, which involves correcting claims after they are returned, to a preventive approach, which involves preventing non-conformities before submission.

Regarding the information system aspect, the finding that bridging is still accompanied by manual verification and re-input indicates that functional interoperability has not yet been fully achieved. Effective digitization requires ensuring that clinical data, coding, administration, and claims status can be used consistently throughout the workflow. Therefore, the development of automatic validation, rule-based alerts, mandatory fields, and dashboard monitoring can be considered as system development requirements, but the effectiveness of these features still needs to be tested in subsequent implementation research.

CONCLUSION

Research on claims data at Indriati Solobaru Hospital in 2025 showed 10,820 inpatient claims, with 3,202 claims (29.59%) pending. Coding factors accounted for the largest category (60.27%), followed by medical aspects (26.20%) and administration

(13.52%). Pending BPJS Kesehatan claims are a multidimensional problem arising from the interrelationships between incomplete and inconsistent clinical documentation, coding complexity and clinical suitability, regulatory dynamics, governance and cross-professional coordination, and the suboptimal integration of RME-SIMRS-INA-CBGs. Interviews with multiprofessionals indicated that coding issues are inseparable from the quality of clinical documentation, regulatory understanding, communication between staff, and information system support. Hospitals need to strengthen the quality of clinical documentation, coding standardization and quality control, regulatory update mechanisms, cross-professional coordination, and digital integration and validation in the claims process. Further research can evaluate intervention strategies based on these findings using objective outcomes of claims management.

ACKNOWLEDGMENT

Thank You to the Directorate General of Research and Development of the Ministry of Higher Education, Science, and Technology of the Republic of Indonesia through the Basic Research program under the Regular Fundamental Research scheme, grant/contract number: 060/UDB.LPPM/A.34-HK/II/2026 and LPPM Universitas Duta Bangsa Surakarta which provides support on research so that it can completed with Good.

REFERENCES

Amani, NN, & Pujilestari, I. (2025). Analysis of factors causing pending status of BPJS Health claims. *Journal of Innovative and Creativity*, 5(3), 24320–24325.

Astuti, ND, & Hidayah, AN (2022). Review of the causes of BPJS Kesehatan claim refunds for inpatients. *Journal of Medical Records and Health Information*, 5(2), 81–88.

Christy, J., Nengsih, YG, Sitorus, MS, & Widyasari, S. (2024). Factors causing pending BPJS inpatient claims at Dr. Pirngadi Regional Hospital, Medan City in 2022. *Imelda Scientific Journal of Health Recording and Information*, 9(1), 100–106.

Hasibuan, A., Girsang, E., & Nasution, SLR (2025). Performance evaluation of internal verifier in reducing pending inpatient claims of BPJS Kesehatan at Muhammadiyah Hospital North Sumatra 2022. *Contag Scientific Periodical of Public Health and Coastal*, 7(2), 343–360.

Herawati, P., & Gurning, FP (2025). Analysis of total quality management implementation in reducing pending BPJS health claims for inpatient services at Hospital X, Serdang Bedagai Regency. *Indonesian Journal of Health Science*, 5(4), 660–670.

Khoirunnisa, D., Mardiani Rahayu, F., Syahidin, Y., Sari, I., & Yuniarty, N. (2023). Design of JKN claim information system for outpatient BPJS patients with SDLC method. *Jurnal Nuansa Akademik*, 8(2), 299–310.

Kurniawan, A., Widatama, K., & Pasa, IY (2022). Bridging inpatient data with INA-CBG's (Indonesian Case Base Groups's). *Journal of Intelligent Systems*, 5(3), 195–207.

Kustiani, R., Syahidin, Y., & Yunengsih, Y. (2024). Electronic medical record information system design to support the reporting of completeness of BPJS patient medical records with extreme programming method. *Jurnal Teknik Informatika (JUTIF)*, 5(4), 11–19.

Lesmana, A., & Taufik, A. (2023). Development of a BPJS hospital claims monitoring system via bridging dashboard. *JISICOM (Journal of Information Systems, Informatics and Computing)*, 7(2), 295–305.

Madania, M., & Aini, Q. (2025). Analysis of compliance with the INA-CBGs claim process at Rachma Husada Hospital: A mixed-methods study. *TPM – Testing, Psychometrics, Methodology in Applied Psychology*, 32, 580–587.

Muchsam, Y., Tanjung, R., Hidayat, MR, Kautsar, MZ, Fauzan, I., Juhaeri, SH, et al. (2022). Review of BPJS claim requirements for service efficiency in Hospital X. *International Journal of Health Sciences*, 6(3), 1492–1500.

Nasution, SLR, Hutabarat, YCA, & Ginting, CN (2023). Evaluation of the role of internal verification doctors in reducing pending claims at Murni Teguh Medan Hospital in 2022. *Journal of Science Education Research*, 9 (Special Issue), 563–569.

Octaviani, J., & Susanti, AS (2024). Analysis of file completeness in pending/failed claim cases to support the accuracy of BPJS claims at Amira General Hospital, Purwakarta. *Journal of Economics and Business*, 4(4), 663–667.

Paramarta, V., Setyaji, DT, & Guterres, AD (2025). Optimizing BPJS claims management: An analysis of submission accuracy, administrative process efficiency and its impact on hospital financial sustainability. *MORFAI Journal*, 5(1), 8–13.

Prawestirini, TH, Syaodih, E., & Veranita, M. (2025). Management strategy in accelerating JKN/BPJS claim eligibility at Restu Ibu Hospital, Balikpapan (qualitative study with SWOT analysis). *Journal of Health Sciences Research*, 4(2), 448–468.

Ramalinda, D., Yayat, E., Hasanah, C., Safhira, A., Octaviyani, Q., Secillia, S., et al. (2022). Pending BPJS claim to support the quality of outstanding hospitals in Muhammadiyah Hospital Bandung. *International Journal of Health Sciences*, 6(3), 1483–1491.

Ramdhani, B., & Habibi, M. (2025). Optimizing outpatient claims management: The role of SEP and document completeness – a qualitative study. *Science Midwifery*, 13(1), 119–125.

Rohaeni, N., & Maulida, M. (2025). Review of the influence of completeness of medical record documents for inpatient BPJS patients to support the smooth processing of INA-CBG's claims at Bhayangkara Hospital Level II Sartika Asih Bandung. *TEDC Journal*, 19(1), 23–29.

Saputra, WD, & Prima, A. (2022). E-Claim system for health insurance and social security (BPJS) types in Indonesia: Innovation and effectiveness of services. *Journal of Society Medicine*, 1(1), 14–24.

Situmorang, BA, Aziz, A., & Hutapea, F. (2025). Analysis of factors causing pending BPJS Health claims for inpatients at Kartika Husada Setu Hospital in 2024. *International Journal of Business, Law, Education*, 6(1), 549–555.

Utami, YT, Akbar, PS, Amelia, R., & Sari, SY (2024). Factors causing pending BPJS inpatient claims with the implementation of electronic medical records at Dr. Moewardi Surakarta Regional Hospital. *Proceedings of the National Health Information Seminar (SIKesNas)*, (3), 406–417.

Utami, YT, Maryati, W., & Ahmad, H. (2025). Optimizing management in an effort to reduce the number of pending claims for BPJS inpatients in hospitals. *Jurnal Infokes*, 15(1), 30–41.

Utami, YT, Maryati, W., & Rahayuningsih, LAS (2024). Implementation of POAC management (Planning, Organizing, Actuating and Controlling) in an effort to reduce the number of pending claims for BPJS inpatients in the hospital. *International Conference of Health, Science and Technology (ICOHETECH)*, 369–381.

Wahyuni, FS, Yudhana, A., & Dewi, WP (2024). Analysis of accuracy in determining diagnosis coding and completeness of claim files for pending claims of BPJS Kesehatan inpatient services at UOBK Simpang Lima Gumul RSUD Kediri District. *Journal of Hospital Management and Services*, 6(1), 6–12.

Winarsih, SA, Widjanarko, B., & Agushybana, F. (2024). The impact of electronic medical records on BPJS claims and physician performance. *Indonesian Journal of Social Technology*, 5(8), 3678–3690.

Yastori, Y. (2023). Analysis of pending claims in cases of errors in codification of diagnosis in the INA-CBGs claim problem solution management guide. *Respati Yogyakarta Nursing Journal*, 10(3), 181–188.

Zalukhu, LA, & Permanasari, VY (2025). Scoping review: Factors causing claims pending in Indonesian hospitals. *Journal of Health Sciences*, 6(9), 252–262.