



ACCURACY OF INA-CBGs CLAIM DOCUMENTATION AND ITS ASSOCIATION WITH REIMBURSEMENT DELAYS IN HOSPITALS: A SYSTEMATIC REVIEW

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ABSTRACT

Timely reimbursement of health insurance claims is essential for hospital financial sustainability and health system efficiency. However, reimbursement delays remain common, particularly in case-based payment systems, and are frequently linked to inaccuracies in claim documentation and supporting records. Despite increasing research on claim management, evidence remains fragmented and lacks a comprehensive synthesis of how documentation accuracy influences reimbursement timelines. This systematic review aims to synthesize empirical evidence on the accuracy of hospital insurance claim documentation and examine its association with reimbursement delays, focusing on key determinants and managerial implications. A systematic literature review was conducted following PRISMA 2020 guidelines. Peer-reviewed studies published between January 2019 and March 2025 were searched in Scopus, PubMed, Web of Science, and Google Scholar using predefined MeSH terms and Boolean operators. The initial search identified 1,245 records. After removing 314 duplicates, 931 articles underwent title and abstract screening, resulting in 253 full-text articles assessed for eligibility. Of these, 187 were excluded due to methodological or topical limitations. Ultimately, 10 studies met all inclusion criteria and were included in the qualitative synthesis. Five major determinants of documentation accuracy were identified: administrative completeness, clinical documentation and coding accuracy, information system integration, organizational governance, and human resource capacity. Inaccurate documentation was consistently associated with higher rates of pending claims, repeated verification cycles, and prolonged reimbursement timelines. Hospitals implementing standardized procedures, internal audits, and continuous training demonstrated improved claim timeliness. Documentation accuracy functions as a critical mediating factor influencing reimbursement performance. Strengthening governance, workforce competency, and system integration is essential to reduce claim delays in case-based payment environments.

Keywords: claim documentation accuracy; national health insurance; reimbursement delay; systematic review

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INTRODUCTION

According to the World Health Organization (WHO), health services are a component of the health system that has the goal of improving and maintaining health. Healthcare services include official services such as traditional medicine and informal services. Health services are a series of activities carried out directly to individuals or communities with the aim of maintaining and improving public health through promotion, prevention, treatment, rehabilitation, and the provision of other assistance (Government Regulation of the Republic of Indonesia, 2023). Health services can be carried out in various health facilities, one of which is a hospital.

Hospitals are health facilities that provide comprehensive health services for individuals through health services that are promotive, preventive, therapeutic, rehabilitative, and/or palliative. This service is carried out through the inpatient, outpatient, and emergency services systems (Government Regulation of the Republic of Indonesia, 2023). As a health service institution, hospitals play a very crucial role in society. With the advancement of the times and increasing

public awareness of the importance of health, the role of hospitals has become increasingly complex. One of the most important and inseparable aspects of hospital services is health insurance.

In the health sector, the health insurance system has become a fundamental element that is very important to ensure that medical services are accessible fairly and sustainably by the entire society. In this case, health services are increasingly dependent on financing mechanisms regulated through insurance, in which BPJS Kesehatan plays a very significant role. Hospitals, as institutions that provide health services, are required to ensure that the insurance claim process can run smoothly and efficiently, so that hospital operations can continue without hindrance. However, there is still a phenomenon of delays in the claims process that often occur (Tarigan et al., 2024).

Based on Law Number 40 of 2004 concerning the National Social Security System (SJSN), it is regulated that every citizen has the right to receive social security, including health insurance, with the aim of ensuring that all Indonesian people have access to health benefits and protection at the national level (President of the Republic of Indonesia, 2004). In addition, Article 28H and Article 34 paragraph (3) of the 1945 Constitution stipulate that every individual has the right to health services. The National Health Insurance System regulated in Law Number 40 of 2004 (JKN) is part of the SJSN and is implemented in conjunction with the social health insurance mechanism which aims to implement the national health insurance system (JKN). BPJS (Social Security Organizing Agency) is a government agency responsible for the implementation of the National Health Insurance (JKN).

With the implementation of the JKN program, BPJS Kesehatan stipulates that the payment method that will be given to hospitals is a case-mix system. In Indonesia, this case-mix payment system was developed under the term Indonesia Case Base Group or INA-CBG's. Payment through INA-CBG's means that people do not need to pay directly to the hospital, but will be covered by BPJS Kesehatan using funds from monthly contributions or insurance premiums paid by people who are registered as BPJS Kesehatan participants. BPJS Kesehatan will bear all medical costs if the hospital submits a claim to BPJS and collects the medical costs. Based on the claims submitted, the cost of hospital patients' health services will be collected or sent to BPJS Kesehatan (Santiasih et al., 2021).

In Indonesia, there is a study that shows that around 25.2% of the total 11,945 hospitalization claim files are returned to the hospital. This is due to problems in administration, such as incompleteness of documents or errors in filling out claim forms (Opitasari, 2019). To ensure smooth payment of healthcare services, it is crucial to know and fully understand the requirements that a hospital must meet when filing a claim. Problems can arise if the hospital is unable to understand the legal billing terms. One example is the problem of BPJS applications that are delayed. Delayed BPJS claims occur when the claim documents submitted by the hospital to BPJS Kesehatan are returned, so that the hospital experiences delays in receiving income from all patient medical service costs. This delay in billing can negatively impact hospital cash flow and cause various problems, including difficulties in paying for medicines (C. I. Putri et al., 2025). This phenomenon reflects the fact that even though hospitals routinely file claim documents, there are still a number of significant administrative barriers that interfere with the smooth processing of the claim. In other words, challenges in terms of administration are one of the factors that need to be considered to increase efficiency and effectiveness in submitting claims for hospitalization in health facilities.

The impact of delays in the claims process is not only limited to the financial aspect, but also has significant implications for the overall health of the public. Based on a report issued by the World Bank in 2022, it was found that in developing countries, delays in submitting claims can lead to an increase in the burden of hospital costs by up to 10%. This is due to the fact that patients are forced to bear medical expenses personally (out-of-pocket) while waiting for the claim verification process

to be carried out (Yuliani et al., 2024). Data obtained from BPJS Kesehatan shows that more than 30% of the total claims submitted by hospitals are delayed, caused by various administrative problems, including inconsistencies in filling out forms that do not meet the set standards (BPJS Kesehatan, 2024). This study aims to synthesize existing evidence on hospital claim documentation accuracy and its relationship with reimbursement delays in case-based payment systems.

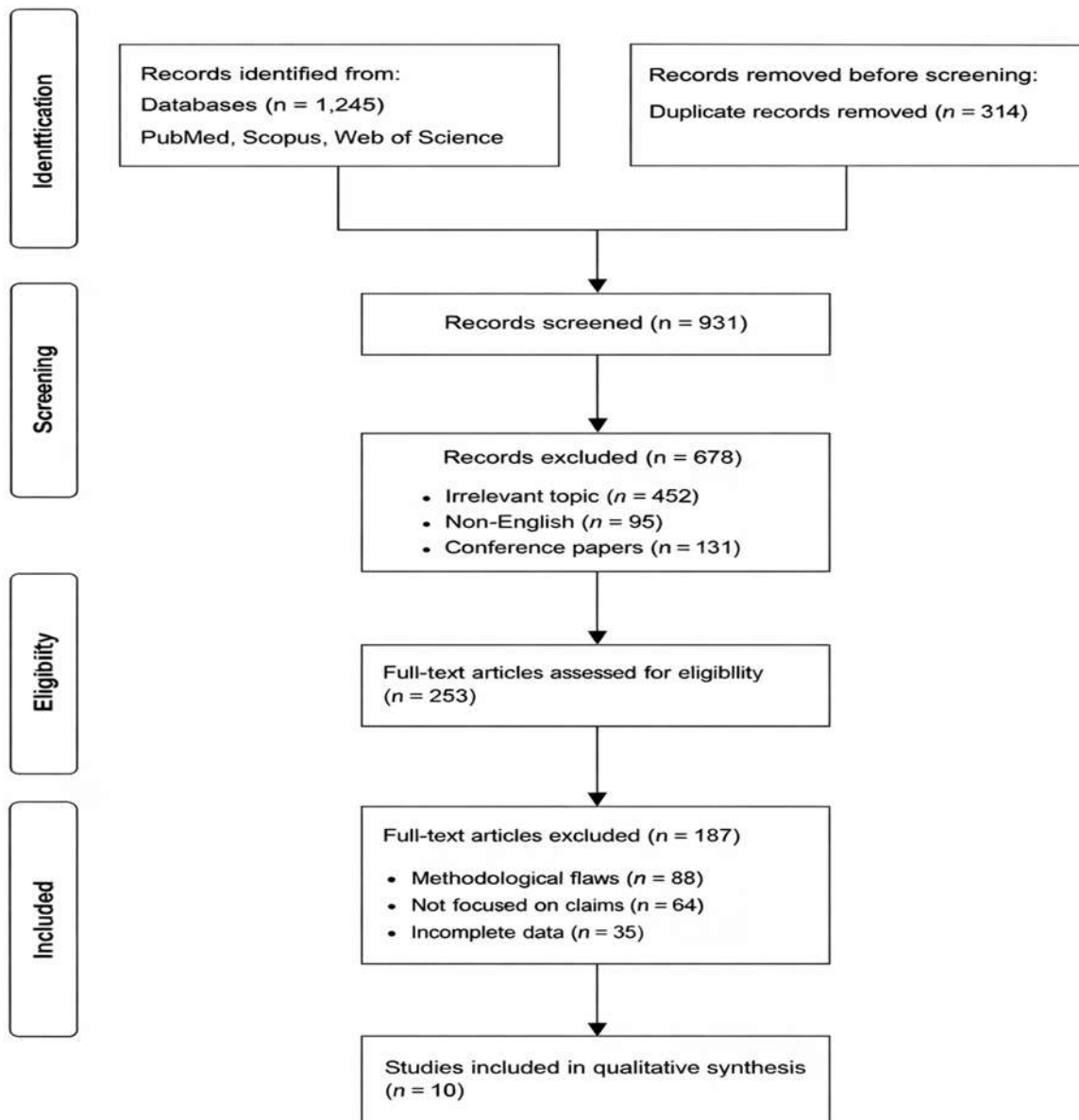
METHOD

This study employed a systematic literature review (SLR) to synthesize empirical evidence on the accuracy of health insurance claim form completion and its impact on reimbursement delays in hospital settings. The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure methodological rigor, transparency, and reproducibility. A comprehensive and systematic search was conducted across four electronic databases: Scopus, PubMed, Web of Science, and Google Scholar. The search covered peer-reviewed articles published between January 2019 and March 2025, reflecting recent developments in hospital reimbursement systems and health information management. Data Sources and Search Strategy; Electronic searches were conducted in Scopus, PubMed, Web of Science, and Google Scholar. The search strategy combined Medical Subject Headings (MeSH) and free-text terms, including: ("insurance claim" OR "health insurance reimbursement") AND ("claim delay" OR "pending claim") AND ("documentation accuracy" OR "coding accuracy" OR "medical record") AND ("hospital" OR "healthcare facility"). Inclusion and Exclusion Criteria. Inclusion criteria: Peer-reviewed journal articles (2019–2025, Empirical studies (quantitative, qualitative, mixed-methods), Hospital-based insurance claim processes, Outcomes related to claim accuracy or claim delay, Exclusion criteria: Non-hospital settings Opinion pieces or editorials, Non-English or non-Indonesian, publications without abstracts. Study Selection and Data Extraction After duplicate removal, titles and abstracts were screened independently. Full-text articles were assessed for eligibility. Extracted data included study design, setting, sample size, key variables, and principal findings. Data Synthesis and Analysis A thematic synthesis approach was applied. Findings were categorized into five analytical domains: administrative factors, clinical coding and documentation, information systems, organizational governance, and human resources. Relationships between documentation accuracy and claim delays were mapped conceptually.

The process of identifying and selecting articles in this literature study is carried out following the guidelines of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 to ensure the transparency and reproducibility of the research. At the identification stage, literature search was carried out through several scientific databases, namely Scopus, PubMed, Web of Science, and Google Scholar, using keywords related to health insurance claims, claim delay, documentation accuracy, coding accuracy, electronic medical records, and hospital administration. From the search results, 1,245 articles were obtained. Furthermore, at the removal of duplicates stage, duplicate articles are deleted based on the similarity of title, author, and year of publication. A total of 314 articles were identified as duplicates and excluded from the analysis, leaving 931 articles for the initial screening stage. At the screening stage, a selection of titles and abstracts from 931 articles was carried out to assess the suitability of the research focus. A total of 678 articles were excluded for not meeting the criteria, with details: topics not relevant to hospital claims ($n = 452$), publication of non-journal articles such as proceedings and brief reports ($n = 131$), and non-English or Indonesian articles without adequate abstracts ($n = 95$). This stage resulted in 253 articles that were further assessed. The next stage is eligibility, which is a full-text assessment of 253 articles. At this stage, a total of 187 articles were issued for methodological and substantive reasons, including inadequate research design ($n = 88$), research focus that did not directly address the accuracy of claim filling or delay in claims ($n = 64$), and incomplete data or research results ($n = 35$). Finally, at the included stage, as many as 10 articles met all inclusion criteria and were included in the qualitative synthesis. These articles form the basis of thematic analysis in this study, especially related to administrative factors, coding and clinical aspects, information systems/EMR

internal organizing and procedures and human resources that affect the accuracy of fillinf out incurrence form and late hospital claim.

PRISMA 2020 Flow Diagram



PRISMA 2020 Flow Diagram

RESULT

Table 1.

Results of a Review of 10 Articles Accuracy of Health Insurance Claim Form Completion and Its Impact on Claim Delays in Hospitals

Author And Title	Risk Factor	Study Design	Impact on Claim Delays
Factors affecting BPJS claim delay (Cahyo & Peristiwati (2022))	HR, IT, and SOPs significantly affected the delay in claims (81.2%).	Quantitatif (cross-sectional)	This research is more specific to the accuracy of filling out insurance forms, not just general management factors (HR, IT, SOP). The analysis unit focuses on <i>the claim documents of Siti Hajar Hospital</i> and the quality of filling out forms.
Factors causing claim pending in Indonesian hospitals(LA Zalukhu (2025))	Incompleteness of files, coding errors, inconsistent SOPs.	Scoping review	the research is <i>reviewive</i> , while this study is empirical and measures the accuracy of filling out forms and their impact on claims delays quantitatively at one specific hospital.
Analysis of the causes of BPJS Madakusuma delay claims (2025)	49.1% code error and incomplete administration are significant.	Quantitative retrospective	This research focuses on <i>coding</i> , while this research discusses the accuracy of filling out insurance forms (completeness, clarity, validity, file return time), not coding.
Factors causing pending BPJS claims (Situmorang (2025))	Incomplete documents and coding errors are the main causes.	Quantitative retrospective	The Situmorang study is qualitative, while this study is quantitative and assesses the effect of the accuracy of filling out forms on late claims. Also focus on Siti Hajar Islamic Hospital.
Timeliness of medical record return (Fahlevi (2024))	Completeness of medical signatures and resumes affects file delays → affect claims.	Descriptive quantitative	This study did not examine insurance forms, only medical records. This study directly assesses the accuracy of filling out the claim form (BPJS/Insurance) and the impact on the delay in claims.
BPJS claims after e-medical records Winarsih (2024)	E-MR reduces admin errors but requires an improvement in coder skills.	Case analysis	This research focuses on the e-MR transition, not the accuracy of claim forms. This study does not assess the electronic system, but the accuracy of the claim form and the factors that affect it.
Reducing pending claims Mathar (2025)	Training interventions, SOPs, audits, and IT reduce pending claims.	Intervention/evaluation	This study is an intervention evaluation, while this study is observational to find causative factors related to inaccuracies in filling out claim forms in hospitals
Incomplete medical records as risk factor for pending claims (Ibrahim (2025))	Incomplete discharge summaries berkorelasi dengan pending claims.	Descriptive / analytical	This study focuses on medical records, not insurance claim forms. This research focuses on internal factors that affect the accuracy of claim forms that are directly related to the BPJS process.
Coding errors & claim delays (Rachma Husada 2025)	Coding discrepancy menunda klaim ~1 bulan.	Case report / audit	This research is different because the focus is not coding, but filling out claim forms (insurance files) which include validation of patient identity data, services, DPJP, action administration, etc..
Internal verifier & pending claims Hasibuan (2025)	The role of internal verifiers lowers pending claims.	Quasi-experimental	This study did not evaluate internal verifiers, but was more specific on the factors of the accuracy of claim forms (completeness, clarity, correctness of data, input time), as well as their impact on the delay of claims in hospitals

DISCUSSION

Administrative Factors

Administrative factors are the earliest and most direct determinants in influencing the delay in hospital claims. The literature consistently shows that incompleteness of administrative paperwork including incomplete claim forms, inconsistencies in patient identities, lack of authorization signatures, and incomplete supporting documents are the main causes of claims being returned or suspended by health care insurers. The findings of Anwar et al. (2025) show that claims with administrative errors are two to three times more likely to experience delays than claims that are administratively complete. In a conceptual framework, administrative factors serve as entry points in the claims cycle. When administrative accuracy is low, claims cannot proceed to the clinical and financial verification stages, triggering an iterative correction process that significantly extends reimbursement times. Therefore, the accuracy of administrative documentation has a direct causal relationship with claim delays, particularly in retrospective claims-based payment systems such as INA-CBGs (Anwar, M., Hidayat, R., & Prasetyo, 2025) his systematic literature review confirms that hospital insurance claim delays are not merely technical or administrative irregularities, but rather the result of complex and interrelated interactions among administrative processes, clinical documentation and coding practices, health information systems, organizational governance, and human resource capacity. Documentation accuracy consistently emerges as a critical mediating factor linking these multidimensional determinants to claim processing timelines. Administrative incompleteness acts as an initial barrier that prevents claims from progressing to clinical and financial verification stages, while deficiencies in clinical documentation and coding accuracy further intensify delays through repeated verification cycles and resubmissions. (O'Malley et al., 2005)

This finding aligns with previous studies indicating that incomplete documentation and coding discrepancies significantly increase the likelihood of pending claims and reimbursement delays. Prior empirical evidence has consistently demonstrated that hospitals with higher documentation accuracy and stronger internal verification mechanisms experience shorter claim turnaround times and improved financial performance. At the same time, in contrast to earlier reports that primarily emphasized coding errors as the dominant cause of claim rejection, this review suggests that documentation accuracy should be conceptualized as a broader systemic construct that encompasses administrative completeness, governance structures, digital system integration, and workforce competency. The findings indicate that even when coding accuracy is adequate, weaknesses in administrative validation, SOP implementation, or system interoperability may still generate substantial delays. (Klaim & Sakit, 2023). Furthermore, while electronic medical records (EMR) have been widely promoted as a solution to documentation inefficiencies, the present synthesis underscores that digitalization alone is insufficient without adequate system integration and user competence. This conclusion is consistent with findings by Winarsih et al. (2024), who emphasized that technological adoption must be accompanied by structured training and governance reform to achieve measurable improvements in claim efficiency. (Yuliani, Y., & Nurwahyuni, 2019)

Overall, the relationship between documentation accuracy and claim delay is systemic and multidimensional. Therefore, hospitals must adopt an integrated governance approach that embeds documentation accuracy within quality assurance frameworks, internal audit systems, workforce development strategies, and financial management policies. Strengthening these interconnected components is essential to ensure timely reimbursement, safeguard hospital cash flow stability, and enhance the sustainability of national health insurance systems, particularly within case-based payment environments such as INA-CBGs.

Clinical Coding and Documentation

The accuracy of clinical documentation as well as the coding of diagnoses and procedures are key factors that bridge clinical services with the health financing system. The international literature

confirms that clinical documentation that is not comprehensive, ambiguous, or not aligned with coding standards (ICD-10/ICD-11 and case-based payment systems) significantly increases the risk of claim non-conformity. Lewis et al. (2023) found that coding errors and incomplete clinical documentation contribute to the increased frequency of claim resubmissions as well as lengthening the claim cycle. Conceptually, clinical documentation acts as a mediator between clinical practice and the claims process. When medical records do not accurately and completely represent a patient's clinical condition, coding officers have difficulty in establishing appropriate codes, which ultimately leads to claims being rejected or requiring additional clarification. Thus, the low accuracy of clinical documentation directly contributes to the delay in claims through repeated revision and verification mechanisms (Lewis, J., Santos, R., & Miller, 2023).

Human resource capacity and motivation emerged as important contributing factors to documentation accuracy and claim timeliness. Most reviewed studies highlighted high workload, limited numbers of trained coding staff, and lack of continuous training as barriers to accurate claim submission. Supporting this finding, a cross-sectional multi-center study by Hidayah et al. (2019) examined remuneration system formulas in 18 Islamic private hospitals across four Indonesian provinces. The study reported that remuneration systems in private hospitals commonly applied a partial remuneration model, combining salary-based payments, performance-based incentives, and fee-for-service components. Importantly, remuneration allocation was highly dependent on hospital financial conditions and management policies.(Chan, 2016)

This systematic literature review confirms that hospital insurance claim delays are the result of complex interactions among administrative processes, clinical documentation and coding practices, information systems, governance structures, and workforce capacity. Among these determinants, clinical coding and documentation accuracy represent a pivotal operational bridge between clinical services and reimbursement mechanisms.(Ropero-Padilla et al., 2022)

Inadequate clinical documentation, ambiguous diagnostic statements, and discrepancies between recorded services and assigned codes were consistently associated with repeated claim verification cycles and prolonged reimbursement timelines. This finding aligns with previous studies indicating that incomplete discharge summaries, inaccurate diagnosis coding, and inconsistencies between clinical records and INA-CBGs grouping substantially increase the probability of pending claims and resubmissions (Jons. Empirical evidence demonstrates that documentation deficiencies compromise coding precision, which in turn disrupts claim validation processes and extends reimbursement turnaround time. In contrast to earlier reports that primarily framed coding errors as isolated technical mistakes made by coders, this review suggests that coding inaccuracies are more accurately understood as downstream manifestations of broader documentation quality problems, including incomplete physician notes, unclear diagnostic justification, and weak interdisciplinary communication. Thus, coding performance should not be viewed solely as an individual competency issue, but as an outcome of systemic documentation governance and institutional quality assurance practices.(Yuliani et al., 2024)

These findings reinforce the argument that strengthening clinical documentation standards, ensuring alignment between physician documentation and coding protocols, and implementing continuous audit-feedback mechanisms are essential strategies to reduce claim delays. Within case-based reimbursement systems such as INA-CBGs, documentation accuracy is not merely a compliance requirement but a financial sustainability determinant for hospital operations.

Information Systems

Health information systems, especially electronic medical records (EMR), play a strategic role in influencing the accuracy of documentation and the efficiency of the claims process. A number of studies have shown that the implementation of EMR can improve data completeness, traceability of

clinical information, and document accessibility, which has a positive impact on the quality of claims. However, these benefits are highly dependent on the level of system integration, interoperability between applications, and user competence in utilizing technology optimally (Winarsih et al., 2024). In conceptual mapping, information systems function as enabling factors that can strengthen or even weaken the relationship between accurate documentation and the timeliness of claims. EMRs that are not integrated with the claims system, have complex interface designs, or are not supported by adequate user training have the potential to create new errors, such as data inconsistencies and duplication of information. As a result, claims continue to experience delays even though hospitals have adopted digital technology (Winarsih, R., Sari, M., & Prabowo, 2024).

This systematic literature review highlights that health information systems, particularly electronic medical records (EMR), play a strategic enabling role in shaping documentation accuracy and claim processing efficiency. Integrated and interoperable digital systems were associated with improved data completeness, better traceability of clinical documentation, and reduced administrative discrepancies, which ultimately contributed to shorter reimbursement timelines.

This finding aligns with previous studies indicating that the implementation of well-integrated electronic medical records significantly reduces administrative errors, improves coding consistency, and enhances insurance claim efficiency (Winarsih et al., 2024; Lewis et al., 2023). Empirical evidence demonstrates that digitalization can streamline documentation workflows and minimize manual transcription errors, thereby decreasing the frequency of claim returns and pending status (Yuliani et al., 2024).

However, in contrast to earlier reports that positioned digital transformation as a standalone solution to claim inefficiencies, this review suggests that the effectiveness of health information systems depends heavily on interoperability, system usability, governance alignment, and user competency. The findings indicate that poorly integrated systems, fragmented platforms, or insufficient staff training may generate new forms of documentation inconsistency, data duplication, and validation delays, ultimately undermining the anticipated benefits of EMR adoption. (La Chimea et al., 2020)

Therefore, digital infrastructure must be embedded within a broader institutional framework that includes standardized operating procedures, continuous user training, and internal audit mechanisms. In case-based payment environments such as INA-CBGs, information systems function not merely as technical tools but as strategic governance instruments that mediate the relationship between documentation quality and hospital financial sustainability.

Organizational Governance

Organizational governance is a structural factor that affects the entire documentation and claims process. The hospital governance literature confirms that effective leadership, clarity of organizational structure, and strong internal oversight mechanisms are positively correlated with compliance with documentation and claims standards. In contrast, hospitals with weak governance tend to experience fragmentation of responsibility and low accountability, which has an impact on declining documentation quality and increasing numbers. Conceptually, organizational governance acts as an upstream determinant that shapes internal policies, work culture, and resource allocation. When governance is strong, hospitals are able to integrate documentation accuracy into quality management and financial management systems, thereby contributing to a sustainable reduction in the risk of late claims (Saltman, R. B., Duran, A., & Dubois, 2011).

This systematic literature review underscores that organizational governance functions as a structural determinant shaping documentation quality and insurance claim performance. Leadership commitment, clarity of roles and responsibilities, internal verification mechanisms, and

enforcement of standardized operating procedures were consistently associated with improved documentation accuracy and reduced claim delays. Hospitals with structured internal audit systems and accountability frameworks demonstrated stronger compliance with claim submission standards and shorter reimbursement cycles.(Stewart & Price, 2025). This finding aligns with previous studies indicating that strong hospital governance structures, including internal control systems and managerial oversight, significantly contribute to improved documentation compliance and reduced pending claims (Anwar et al., 2025; Saltman et al., 2011). Governance mechanisms that integrate quality assurance with financial monitoring create institutional accountability, thereby minimizing fragmentation in claim preparation and verification processes.

In contrast to earlier reports that largely emphasized technical documentation errors or coder-related inaccuracies as the primary source of claim delays, this review suggests that such technical deficiencies often reflect upstream governance weaknesses, including unclear workflows, limited supervision, and absence of systematic performance monitoring. In this perspective, documentation errors are not merely operational lapses but indicators of broader institutional governance gaps.(Hambley et al., 2025). These findings highlight that improving claim timeliness requires more than technical training or digital system upgrades; it necessitates embedding documentation accuracy within hospital governance frameworks. Strengthening leadership engagement, reinforcing internal audit functions, and aligning documentation standards with financial accountability mechanisms are essential strategies to enhance reimbursement efficiency and ensure institutional sustainability within case-based payment systems such as INA-CBGs.

Human Resources

Human resources are the main operational drivers in the documentation and claims process. The literature shows that the high workload of health workers, the limited number of trained coding officers, and the lack of ongoing training contribute significantly to the low accuracy of documentation. O'Brien and Dalton (2021) emphasized that the capacity and competence of human resources have a direct relationship with the quality of claims and the speed of the reimbursement process. In conceptual mapping, human resource factors play a role as operational drivers that connect organizational policies, information systems, and daily documentation practices. When healthcare workers and administrative staff are not supported by adequate staffing and ongoing training, documentation errors become difficult to avoid and directly increase the risk of late claims (O'Brien, J., & Dalton, 2021).

Overall, the literature shows that documentation accuracy is a key variable that mediates the relationship between administrative factors, clinical documentation and coding, information systems, organizational governance, and human resources with claims delays. Imperfections in any of these factors will degrade the quality of documentation and directly increase the risk of pending claims. Therefore, the relationship between documentation accuracy and claims delay is systemic and demands integrated interventions across organizational dimensions, rather than a partial approach that focuses solely on the technical aspects of claims.(Yuliani, Y., & Nurwahyuni, 2019)

This systematic literature review confirms that human resources represent the primary operational drivers influencing documentation accuracy and insurance claim timeliness in hospital settings. Workforce capacity, staff competency, workload distribution, and access to continuous training were consistently identified as critical factors affecting the quality of clinical documentation and claim form completion. Insufficient numbers of trained coding and administrative staff, combined with high clinical workloads, increase the likelihood of documentation errors and subsequent claim delays.(Hafiar et al., 2025; Schmeelk & Pétrie, 2026)

This finding aligns with previous studies indicating that human resource capacity and professional competence are strongly associated with documentation quality and reimbursement performance,

where hospitals with adequately trained personnel and balanced workloads demonstrate significantly lower rates of pending claims and faster reimbursement cycles (O'Brien & Dalton, 2021; Anwar et al., 2025). Empirical evidence further suggests that continuous training and role specialization enhance staff accuracy in documentation and coding, thereby reducing iterative claim revisions. In contrast to earlier reports that framed documentation errors primarily as individual negligence or lack of technical skill, this review suggests that human resource-related inaccuracies are more accurately interpreted as systemic consequences of organizational staffing policies, limited institutional investment in capacity building, and the absence of structured competency development programs. Under such conditions, even technologically advanced systems and standardized procedures may fail to prevent claim delays if human resource constraints remain unaddressed. (Arya Asok & Rekha, 2025; Harari et al., 2025)

These findings underscore that strengthening hospital claim performance requires strategic human resource management that prioritizes adequate staffing levels, continuous professional development, and workload optimization. In case-based reimbursement systems such as INA-CBGs, human resources should be positioned not merely as executors of documentation tasks, but as strategic assets whose competence directly influences financial sustainability and service continuity. (Jonsson et al., 2025; Pratham Prabal & Krishnareddy, 2026)

Implications for Hospital Management

The findings of this review suggest that hospital management plays a crucial role in preventing insurance claim delays. Claim problems are not only technical issues in coding or administration, but reflect broader management systems within the hospital. Therefore, hospital leaders need to place documentation accuracy as an important part of quality and financial management. Hospital management should ensure that all claim documents are complete and accurate before submission. This can be achieved through routine internal checks and better coordination between doctors, coders, and administrative staff. Regular meetings or verification steps before claim submission may help reduce repeated corrections and pending claims. In addition, hospitals need to provide continuous training for doctors, nurses, and coding staff to improve their understanding of documentation standards and reimbursement requirements. Good documentation begins with clear and complete clinical notes, not only with correct coding at the final stage.

The use of electronic medical records should also be supported by proper system integration and user training. Technology alone is not enough; hospital management must ensure that digital systems are easy to use and well connected with claim processing systems. Finally, adequate staffing and balanced workloads are important to maintain documentation quality. When healthcare workers are overloaded, documentation errors are more likely to occur, leading to claim delays. Overall, hospital management should adopt a proactive and integrated approach by strengthening governance, improving staff competency, optimizing information systems, and monitoring documentation performance. Such efforts can reduce claim delays, improve cash flow stability, and support the long-term sustainability of hospital services.

CONCLUSION

This systematic literature review identifies documentation accuracy as the central mediating variable linking administrative processes, clinical coding practices, information systems, organizational governance, and human resource capacity to hospital insurance claim delays. The core finding of this review is that claim delays are not isolated technical failures, but systemic outcomes resulting from weaknesses across interconnected organizational dimensions. This review contributes to the existing literature by shifting the analytical perspective from fragmented, factor-specific explanations toward a systems-based conceptualization of claim delay. Rather than treating administrative errors, coding inaccuracies, or IT limitations as isolated determinants, this study synthesizes evidence to demonstrate that documentation accuracy functions as a systemic mediator

across organizational domains. By integrating governance theory, health information systems research, and workforce performance literature into a unified analytical framework, this review advances a more comprehensive understanding of insurance claim inefficiencies in hospital settings—particularly within case-based reimbursement environments such as INA-CBGs. This integrative perspective provides both theoretical enrichment and practical guidance for hospital managers and policymakers seeking sustainable improvements in reimbursement performance.

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