

Educational Interventions and Digital Innovation for Improving BPJS Inpatient Claims

Putri Maulia, Iik Sartika, Nur Ani, Budhi Rahardjo

Universitas Veteran Bangun Nusantara, Kabupaten Sukoharjo, Jawa Tengah, Indonesia

*Corresponding Author: zakimukti@gmail.com

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Abstract. Pending inpatient claims under Indonesia's National Health Insurance (BPJS Kesehatan) have become a critical concern for hospital financial management and administrative performance, particularly as hospitals transition to digital claim systems. This study aims to investigate the effectiveness of educational interventions and digital innovation in reducing pending BPJS inpatient claims, while providing actionable policy insights to improve hospital claim management. Employing a descriptive quantitative approach, the research utilizes secondary data from all inpatient claim submissions at RS Slamet Riyadi Surakarta for October 2024, complemented by internal audits and stakeholder interviews. The urgency of this study arises from the persistent delays in claim processing, which threaten both hospital cash flow and service sustainability. The findings reveal that inaccurate medical records constitute the most significant factor contributing to claim delays, accounting for 75% of pending cases, followed by incomplete documentation, insufficient supporting examinations, and inadequate therapeutic evidence. Novelty emerges through the systematic prioritization of delay determinants and the application of structured educational interventions and AI-based digital tools to enhance staff competence and verification processes. The research contributes practical recommendations for integrating ongoing education, digital verification, and collaborative policy-making, thereby strengthening the quality, transparency, and efficiency of BPJS inpatient claim management in Indonesian hospitals.

Key words: educational intervention; digital innovation; hospital administration; BPJS; education policy

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INTRODUCTION

Universal health coverage has emerged as a critical policy objective in many developing countries, including Indonesia, where equitable access to quality health services remains an enduring challenge. The establishment of the National Health Insurance system (BPJS Kesehatan) represents a transformative step toward achieving health equity and financial protection for all citizens. As a single-payer health insurance system, BPJS Kesehatan covers the vast majority of Indonesia's population and has enabled unprecedented improvements in healthcare access, utilization, and population health outcomes (Agustina et al., 2023; Aryani et al., 2024; UNDP, 2023). However, the implementation of BPJS Kesehatan also introduces significant administrative complexities, particularly in the domain of hospital inpatient claims management, where delays and inaccuracies remain a persistent obstacle to efficient health service delivery (Bella et al., 2024; Cahyo & Peristiowati, 2022; Sugiarto & Ilyas, 2022).

The effectiveness of inpatient claims management is closely intertwined with hospital financial stability, operational efficiency, and ultimately, the quality of patient care. Delays in BPJS claim processing disrupt hospital cash flow, strain institutional resources, and undermine trust in the health insurance system (Palutturi et al., 2023; Winarsih et al., 2024). These administrative delays not only affect hospital operations but also have downstream effects on the broader health system, including delayed reimbursements to healthcare providers and diminished patient satisfaction (Darmawan et al., 2024; Lubis et al., 2023). As Indonesia advances toward full digitalization of its health administration, the transition to electronic medical records and automated verification systems presents new opportunities and risks. While digital innovations hold promise for increasing transparency, efficiency, and data accuracy, the transition process has exposed critical gaps in staff training, system integration, and workflow coordination (Bella et al., 2024; Lusiani & Princes, 2024).

Despite substantial policy attention and incremental reforms, a significant proportion of BPJS inpatient claims continue to be delayed due to a constellation of factors, most notably the accuracy of medical records, completeness of documentation, and the effectiveness of verification procedures (Heltiani et al., 2023; Adams et al., 2002; Blondiau, 2015). Empirical research and hospital audit reports consistently highlight inaccurate or incomplete medical records as the predominant cause of pending

claims, often exacerbated by limited staff competence, high administrative workloads, and insufficient understanding of evolving digital systems (Putri et al., 2020; Cahyo & Peristiowati, 2022). Furthermore, process bottlenecks frequently emerge in the context of interdepartmental collaboration, where a lack of standardized communication and insufficient educational interventions impede the timely submission and approval of claims (Blondiau, 2015; Fajriani et al., 2024).

The existing literature underscores the need for a dual approach that combines administrative innovation with ongoing education and capacity building among hospital staff. While studies have evaluated the technical and organizational determinants of claim delays, comparatively few have systematically assessed the role of educational interventions in tandem with digital innovation to improve claims management (Faeni, 2024; Sufriyana et al., 2020; Bella et al., 2024). This research gap is especially pronounced in the Indonesian context, where the digitalization of claim processes has outpaced the implementation of comprehensive training and learning frameworks for healthcare workers. The lack of rigorous evidence on how educational interventions influence digital adoption and claim accuracy constitutes a critical blind spot in both policy and practice (Adams et al., 2002; Fathiah et al., 2024).

As Indonesia's health sector undergoes rapid digital transformation, hospital administrators and policymakers are compelled to develop integrative strategies that address both technological and human resource dimensions of claims management. In this context, educational interventions—including formal training, mentoring, and ongoing professional development—are essential to ensure that healthcare staff possess the requisite knowledge, skills, and adaptability to manage digital systems effectively (Bella et al., 2024; Winarsih et al., 2024). By equipping staff with updated competencies and fostering a culture of continuous learning, hospitals can mitigate the risks associated with technological change and enhance the accuracy, timeliness, and completeness of BPJS inpatient claims.

Equally important, digital innovations such as artificial intelligence-assisted verification, workflow automation, and integrated electronic medical records offer scalable solutions to address systemic inefficiencies in claims processing (Lusiani & Princes, 2024; Sufriyana et al., 2020). When combined with robust educational interventions, these technological tools have the potential to transform hospital administrative practice, yielding tangible benefits for financial management, patient outcomes, and system transparency. However, the successful adoption of digital innovation depends not only on the availability of technology but also on the alignment of organizational culture, policy support, and sustained investment in human capital development (Kresnowati et al., 2025; Krisnadewi et al., 2025).

The present study addresses the critical intersection of education and digital innovation in the management of BPJS inpatient claims by examining their combined effects on claim processing outcomes in a hospital setting. Drawing on a case study at RS Slamet Riyadi Surakarta, this research evaluates the determinants of pending inpatient claims, with particular emphasis on the effectiveness of educational interventions and digital transformation strategies. The study employs a descriptive quantitative methodology, analyzing secondary claim submission data, audit records, and staff interviews from October 2024, a period marked by significant procedural and technological change in claim management. The study seeks to fill the identified research gap by articulating how structured staff education, combined with digital innovation, can reduce the prevalence of pending claims and enhance the sustainability of hospital operations.

METHODS

This research employed a descriptive quantitative design aimed at systematically identifying and prioritizing the determinants of pending BPJS inpatient claims, while critically evaluating the impact of educational interventions and digital innovation on claim management processes. The study was conducted at RS Slamet Riyadi Surakarta, a regional referral hospital in Central Java, Indonesia, during a period of significant administrative transition marked by the implementation of new digital verification systems and organizational reforms in October 2024. The methodological approach was designed to ensure comprehensive, accurate, and replicable findings that would contribute to both academic understanding and policy development in hospital administration and health insurance management.

The study encompassed all inpatient claims submitted to BPJS Kesehatan by RS Slamet Riyadi Surakarta within the specified month. This total-population design was chosen to provide a complete and undistorted picture of claim management dynamics during a period of heightened administrative

complexity. In contrast to sampling-based research, the use of total-population analysis minimized the risk of selection bias and enabled detailed cross-sectional comparisons among various claim outcomes, including approved, pending, and rejected claims. The final dataset comprised 323 inpatient claims, of which 251 were approved and 72 were categorized as pending at the end of the administrative review cycle.

Data collection was conducted through a combination of archival research and direct access to the hospital’s electronic claim management systems. Primary data sources included digital records of claim submissions, audit logs from both internal hospital verifiers and external BPJS auditors, and official documentation associated with each stage of the claim review process. Supplementary qualitative data was gathered through in-depth interviews with key hospital personnel, including the head of medical records, the chief of administration, staff members responsible for claim verification, and members of the IT and quality assurance teams. The interviews provided contextual insights into procedural changes, workflow adaptations, and perceived barriers to efficient claim management, especially during the transition to the digital verification system.

To ensure data integrity, multiple verification steps were implemented at each stage of the research process. Initial data extraction involved systematic downloading of all relevant claim records from the hospital’s management information system. These digital records were cross-referenced against manual audit logs and hard-copy documentation to identify discrepancies, missing information, or inconsistencies in claim categorization. The triangulation of electronic and manual records enhanced the reliability and validity of the dataset, particularly in identifying the frequency and root causes of claim delays. Any data inconsistencies were further investigated through targeted follow-up interviews and consultations with the administrative staff directly involved in the disputed cases.

Variables for analysis were defined to capture both the status of claims and the primary determinants of delay. The dependent variable was the final status of each claim, coded as either approved or pending. Independent variables included four major categories derived from previous research and hospital audit reports: medical record accuracy, documentation completeness, adequacy of supporting examinations, and sufficiency of therapeutic evidence. Each pending claim was assigned to one or more of these categories based on explicit audit findings and staff interviews, enabling a granular analysis of delay determinants and their relative contribution to claim outcomes. Data analysis was performed using established statistical software packages for both quantitative and qualitative datasets.

Ethical considerations were rigorously observed throughout the research process. The study protocol was reviewed and approved by the hospital’s institutional review board, ensuring compliance with national and international standards for research ethics in health settings. Informed consent was obtained from all interview participants, who were assured of their right to withdraw from the study at any stage without penalty. Data confidentiality was maintained through de-identification of patient and staff records, secure storage of digital files, and restricted access to sensitive information. Special care was taken to avoid any adverse impact on hospital operations or staff welfare, with findings disseminated in a manner that emphasized organizational learning and system improvement rather than individual fault or blame.

RESULTS AND DISCUSSION

The analysis of BPJS inpatient claim submissions at RS Slamet Riyadi Surakarta for October 2024 reveals a significant proportion of claims categorized as pending. Out of a total of 323 claims submitted during this period, 251 claims were approved while 72 claims remained pending at the end of the administrative review cycle. This indicates that approximately 22% of inpatient claims experienced delays or obstacles that prevented timely reimbursement.

Table 1. Distribution of BPJS Inpatient Claims by Status

Claim Status	Frequency	Percentage
Approved	251	78
Pending	72	22
Total	323	100

The findings indicate that nearly one in five BPJS inpatient claims at RS Slamet Riyadi Surakarta were delayed during the month analyzed. This proportion is consistent with previous national reports, which suggest that claim pending rates in Indonesian hospitals generally range from 20% to 25% (Cahyo & Peristiowati, 2022; Sugiarto & Ilyas, 2022). The relatively high frequency of pending claims underscores persistent challenges in hospital administrative systems, specifically in areas related to documentation, verification, and interdepartmental coordination. The visualization in Figure 1 further emphasizes the notable gap between approved and pending claims, highlighting the critical need for targeted interventions to address the underlying causes of claim delays.

A detailed review of the 72 pending claims identified four principal determinants based on internal audit and staff interviews: inaccurate medical records, incomplete documentation, insufficient supporting examinations, and inadequate therapeutic evidence. The distribution of these determinants is presented in the following table 2.

Table 2. Primary Determinants of Pending BPJS Inpatient Claims (October 2024)

Cause of Pending Claim	Frequency	Percentage
Inaccurate Medical Records	54	75
Incomplete Documentation	9	13
Insufficient Examinations	6	8
Inadequate Therapeutic Evidence	3	4
Total	72	100

Analysis reveals that the dominant cause of pending BPJS inpatient claims is inaccurate medical records, accounting for 75% of all pending cases. This is followed by incomplete documentation (13%), insufficient supporting examinations (8%), and inadequate therapeutic evidence (4%). These findings are in line with both national and international studies, which consistently identify medical record accuracy as the primary factor influencing claim approval rates (Putri et al., 2020; Heltiani et al., 2023; Adams et al., 2002). The concentration of delays around documentation quality and verification processes highlights systemic gaps in staff training, workflow integration, and ongoing audit mechanisms. Visual representation in Figure 2 further demonstrates the overwhelming contribution of medical record inaccuracies to overall claim delays, underscoring the urgent need for educational and technological interventions targeting this aspect of hospital administration.

After identifying the major determinants of pending claims, this study examined the effects of targeted educational interventions (such as staff training on medical record documentation and BPJS claim procedures) and the implementation of digital innovation (introduction of an electronic verification system) on claim outcomes. The analysis compared data from two phases: before intervention (September 2024) and after intervention (October 2024) in Table 3.

Table 3. Pending BPJS Inpatient Claims Before and After Educational and Digital Interventions

Period	Total Claims	Pending Claims	Percentage Pending
Before Intervention	315	87	27.6
After Intervention	323	72	22.3

The implementation of educational interventions and digital innovation resulted in a notable reduction in the percentage of pending BPJS inpatient claims. Prior to the intervention, 27.6% of claims were pending. After structured staff training sessions focusing on medical record accuracy, compliance with BPJS standards, and the integration of digital verification tools, the percentage of pending claims decreased to 22.3%. This improvement corresponds to a relative reduction of 19% in the proportion of pending claims within a one-month period. The decline in pending claims demonstrates the tangible benefits of combining human resource capacity-building with technological modernization, supporting previous research on the synergistic effects of education and digital systems in hospital administration (Bella et al., 2024; Lusiani & Princes, 2024). Figure 3 visually illustrates this trend, confirming that

structured educational and digital interventions can produce measurable and rapid improvements in claim management outcomes.

To enrich the quantitative findings, this study conducted an internal survey and semi-structured interviews with 25 staff members involved in BPJS inpatient claim administration. The survey utilized a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) to evaluate staff perceptions regarding the effectiveness of educational interventions, digital innovation, and the challenges encountered during the implementation process in Table 4.

Table 4. Staff Perceptions of Educational Interventions and Digital Innovation

Statement	Mean	SD	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Training improved understanding of BPJS claim procedures	4.48	0.71	0	4	8	48	40
Digital tools increased claim accuracy and speed	4.36	0.82	0	4	12	44	40
Documentation errors decreased after interventions	4.24	0.85	0	8	12	48	32
Adapting to new digital systems was challenging	3.76	1.01	8	12	20	36	24
Ongoing mentoring/support is still needed	4.68	0.55	0	0	8	32	60

The survey results indicate overwhelmingly positive staff perceptions regarding both educational interventions and digital innovation in BPJS inpatient claim management. The mean score for “training improved understanding of BPJS claim procedures” was 4.48, reflecting strong agreement among staff about the effectiveness of recent educational activities. Similarly, the use of digital tools to increase the speed and accuracy of claims scored a mean of 4.36, confirming staff recognition of technological benefits. Staff also reported a noticeable decline in documentation errors post-intervention, with a mean score of 4.24.

However, the adaptation to new digital systems presented moderate challenges, as shown by a mean score of 3.76; qualitative feedback indicated that initial unfamiliarity with new interfaces and workflows temporarily hampered performance. The highest mean score, 4.68, was found for the statement regarding the need for ongoing mentoring and support, highlighting a consensus that continuous professional development and technical assistance are essential for sustaining improvements.

The findings of this study underscore the persistent and multifaceted challenges facing BPJS inpatient claim management in Indonesian hospitals, as exemplified by the significant proportion of claims classified as pending at RS Slamet Riyadi Surakarta. The pending claim rate of 22% observed in this study is consistent with the national average reported in previous research, highlighting the systemic nature of claim processing delays across the country (Cahyo & Peristiowati, 2022; Sugiarto & Ilyas, 2022). This persistent backlog not only strains hospital finances and disrupts operational flow but also has the potential to erode patient trust and institutional credibility over time.

The Challenge of Pending Claims in Indonesian Hospital Administration

The persistence of pending BPJS inpatient claims continues to pose significant operational and financial challenges for Indonesian hospitals. The present study, conducted at RS Slamet Riyadi Surakarta, found that 22% of BPJS inpatient claims remained pending after the administrative review cycle. This proportion aligns with national trends previously reported by Cahyo and Peristiowati (2022), as well as Sugiarto and Ilyas (2022), indicating a systemic issue that transcends individual hospital performance. The magnitude of the problem is further underscored by its impact on hospital cash flow, resource allocation, and the ability to deliver timely and quality care to patients reliant on the national insurance system. Delayed claims can result in substantial financial strain, especially for public hospitals

where operational budgets are closely tied to the timely reimbursement of claims (Bella et al., 2024; Palutturi et al., 2023).

Pending claims also create downstream effects, including administrative bottlenecks, increased workloads for medical record and administrative staff, and ultimately, delays in patient service delivery. Such operational inefficiencies can erode trust in both hospital management and the BPJS Kesehatan program. The findings of this study confirm that, without targeted interventions, the cycle of administrative backlog and resource strain will persist—highlighting the need for systemic reform that addresses both technical and human resource determinants of claim delays.

Documentation and Medical Record Accuracy: The Principal Barrier

The dominant cause of pending claims, as identified in this research, was inaccurate medical records, accounting for 75% of all pending claims. This observation is consistent with both Indonesian and international literature, which repeatedly highlights documentation quality as a primary determinant of successful health insurance claims (Putri et al., 2020; Heltiani et al., 2023; Adams et al., 2002). Inaccuracies manifest in various forms, including incomplete patient data, incorrect diagnostic codes, missing signatures, and insufficient documentation of medical interventions. These issues are not only technical in nature but also symptomatic of deeper organizational and educational gaps (Bella et al., 2024; Lubis et al., 2023).

Despite the proliferation of electronic health records and digital tools, human error and insufficient training remain significant obstacles to documentation quality. This study reinforces previous findings that administrative interventions are only as effective as the staff's ability to understand, implement, and sustain new standards (Fajriani et al., 2024; Winarsih et al., 2024). The concentration of delays around documentation accuracy indicates that investments in technology alone cannot resolve the issue without parallel investments in continuous education and skills development.

The Effectiveness of Educational Interventions

Educational interventions, such as targeted staff training on BPJS claim requirements and accurate medical record-keeping, were found to yield measurable improvements in claim processing outcomes. After structured educational programs were introduced, the rate of pending claims decreased from 27.6% to 22.3%, representing a relative reduction of 19% within one month. This finding validates the argument made by Bella et al. (2024) and Faeni (2024) that staff competence, reinforced by ongoing education, is fundamental to administrative reform in healthcare settings.

The improvement in claim processing efficiency is attributable not only to knowledge transfer but also to the reinforcement of a culture of accountability and professional development. Staff survey results revealed strong agreement (mean 4.48 out of 5) that training programs significantly improved their understanding of BPJS claim procedures. These findings echo the conclusions drawn by Fajriani et al. (2024) and Winarsih et al. (2024), who reported that structured educational interventions reduce the frequency of errors, improve compliance with evolving administrative protocols, and enhance overall staff confidence in claim management.

However, challenges remain in the long-term sustainability of educational interventions. Nearly all staff surveyed (mean 4.68 out of 5) indicated a need for ongoing mentoring and support to sustain improvements. This highlights a critical gap in existing reform strategies, where one-off training programs may yield temporary gains, but continuous professional development and real-time technical support are required to maintain progress and adapt to changing regulations and technologies (Blondiau, 2015; Krisnadewi et al., 2025). The literature supports this conclusion, advocating for the institutionalization of periodic refresher courses, mentorship schemes, and cross-departmental learning forums as best practices for sustaining educational impact (Kresnowati et al., 2025; Lubis et al., 2023).

The Role and Limitations of Digital Innovation

The transition to digital claim management systems, including the introduction of AI-assisted verification and automated documentation tools, produced clear benefits in reducing claim processing time and minimizing certain types of clerical errors. The mean staff agreement (4.36 out of 5) reflected positive perceptions of the value of digital innovation in streamlining administrative workflows and improving claim accuracy. This supports the findings of Lusiani and Princes (2024) and Sufriyana et al. (2020), who documented similar trends in other Indonesian hospitals transitioning to digital systems.

Yet, the study also exposes the limitations of digital innovation when not coupled with comprehensive human resource development. A significant proportion of staff (mean 3.76 out of 5) found adapting to new digital systems challenging, with reported difficulties ranging from unfamiliarity with new user interfaces to technical malfunctions that interrupted workflow. These transitional challenges can temporarily increase error rates or even discourage staff from fully utilizing digital tools, undermining the expected efficiency gains (Kresnowati et al., 2025; Krisnadewi et al., 2025).

The qualitative data from staff interviews highlighted a need for more personalized technical support during the rollout of new digital systems. The literature concurs, emphasizing that technology adoption in hospital administration is most successful when accompanied by structured change management strategies, ongoing user training, and responsive IT support (Murty et al., 2024; Bella et al., 2024). These factors collectively reduce resistance to change and ensure that digital innovation achieves its intended impact on administrative performance.

Integrating Education and Digital Innovation: Toward Sustainable Reform

The evidence from this research suggests that neither educational interventions nor digital innovation alone are sufficient to resolve the persistent problem of pending BPJS inpatient claims. Instead, the most effective approach is one that integrates continuous professional development with the phased implementation of digital systems. This finding echoes best-practice models identified in international literature, which consistently advocate for multi-component interventions that address technical, organizational, and human factors simultaneously (WHO, 2023; Arifin et al., 2024; UNDP, 2023).

The synergistic benefits of combining education and digital innovation were reflected in the rapid reduction of pending claims following intervention, as well as in staff perceptions of improved competence and job satisfaction. By equipping staff with both the knowledge to navigate complex administrative requirements and the technological tools to streamline repetitive tasks, hospitals can foster a more resilient and adaptive administrative workforce (Bella et al., 2024; Lusiani & Princes, 2024). Moreover, sustained improvements in claim management translate into more reliable hospital revenue streams, better patient outcomes, and increased trust in the national insurance system.

Nevertheless, sustainable reform requires ongoing investment in both domains. Hospitals should prioritize the allocation of resources not only for periodic technology upgrades but also for the continuous education of staff at all levels. Policy frameworks at institutional and governmental levels should mandate and support these dual investments, recognizing that technological change without human capital development may yield suboptimal or even counterproductive results (Kresnowati et al., 2025; WHO, 2023).

From a theoretical perspective, the findings of this study support the systems approach to healthcare administration, which posits that organizational performance is determined by the interaction of technical, human, and policy subsystems (Blondiau, 2015). In the context of BPJS claim management, this means that improvements in one domain (e.g., technology) must be matched by advancements in other areas (e.g., education, interdepartmental communication, and policy alignment) to realize systemic gains. At the policy level, the study suggests that regulatory bodies such as BPJS Kesehatan, the Ministry of Health, and hospital accreditation agencies should develop comprehensive guidelines that incentivize both technological and educational innovation. These might include requirements for regular staff certification, performance-based funding for training programs, and the establishment of national benchmarks for documentation quality and claim processing efficiency. In addition, interdepartmental collaboration and knowledge sharing should be institutionalized through policy mechanisms that reward cross-functional teamwork and the diffusion of best practices (Faeni, 2024; BPJS, 2022).

While the present study offers valuable empirical and practical insights, several limitations must be acknowledged. First, the focus on a single hospital during a defined period may limit the generalizability of findings. The administrative context, staff composition, and technological infrastructure at RS Slamet Riyadi Surakarta may differ from those at other institutions, particularly smaller or less digitally advanced hospitals. Second, the absence of a formal control group precludes definitive causal attribution; observed improvements may have been influenced by external factors not fully captured in the study design.

Additionally, while staff perceptions provide rich contextual data, they are subject to response bias and may not reflect the experiences of all stakeholders involved in claim processing. Finally, the short time frame of the post-intervention assessment may not capture the full effects of educational and

technological reforms, which often require sustained implementation and monitoring to achieve lasting impact. Future research should address these limitations by employing multi-site longitudinal designs, incorporating control groups, and exploring the interaction of educational and digital interventions in more diverse healthcare settings. Further studies are also needed to examine the cost-effectiveness of different intervention strategies, the role of organizational culture in mediating reform outcomes, and the scalability of best-practice models across Indonesia's heterogeneous health system.

The novelty of this research lies in its integrated analysis of educational and digital interventions, supported by both quantitative and qualitative data, to address the persistent issue of pending BPJS inpatient claims. By systematically identifying and prioritizing the determinants of claim delays, evaluating the impact of reform measures, and documenting staff experiences, the study advances knowledge in hospital administration, educational innovation, and health policy. The research offers actionable recommendations for hospital leaders, policymakers, and educators seeking to optimize health insurance claim management in Indonesia. The main contribution of the study is the demonstration that comprehensive and sustained educational interventions, when combined with targeted digital innovation, produce measurable and rapid improvements in administrative efficiency and documentation quality. The findings also highlight the importance of staff engagement, ongoing mentoring, and adaptive support in ensuring the long-term sustainability of reforms.

The implications of this research extend beyond the immediate context of BPJS claim management. Efficient and transparent claims administration is essential not only for hospital financial viability but also for the broader goals of universal health coverage and equitable access to care. By reducing administrative delays, hospitals can improve patient flow, minimize service disruptions, and ensure that financial barriers do not impede timely treatment. At the macro level, enhanced claim management supports the sustainability of the national health insurance system by promoting accountability, reducing fraud, and enabling more accurate health expenditure forecasting. The integration of educational and digital innovation into hospital policy frameworks sets a precedent for broader health system strengthening in Indonesia and other countries facing similar challenges.

In synthesis, this study reinforces the systems view of healthcare administration by empirically demonstrating that both human capital and technological capacity are indispensable for sustainable reform. The rapid improvements observed at RS Slamet Riyadi Surakarta following integrated educational and digital interventions provide a model for other institutions grappling with similar issues. However, the study also cautions against a one-size-fits-all approach, urging hospital leaders and policymakers to tailor interventions to local needs, resources, and organizational cultures.

The pathway to efficient BPJS inpatient claim management is neither simple nor linear. It requires sustained leadership commitment, adequate resource allocation, ongoing evaluation, and a willingness to invest in both people and technology. As hospitals and health systems continue to evolve, the lessons from this research should inform not only immediate administrative reforms but also the long-term pursuit of quality, equity, and sustainability in Indonesian healthcare.

CONCLUSION

This study demonstrates that the integration of structured educational interventions and digital innovation yields significant improvements in the management of BPJS inpatient claims at RS Slamet Riyadi Surakarta, primarily by reducing the rate and impact of pending claims rooted in medical record inaccuracies and documentation errors. The research confirms that targeted staff training, when combined with the adoption of electronic verification systems, not only enhances claim accuracy and efficiency but also fosters a culture of continuous professional development and organizational adaptability. The survey and interview data reveal that staff strongly value ongoing mentoring and technical support, indicating that sustained investment in human capital is as crucial as technological advancement for achieving lasting reform. These findings underscore the necessity of a holistic, evidence-based approach to hospital administration, where policy and practice are informed by both quantitative outcomes and the lived experiences of healthcare workers. By offering empirical evidence and practical recommendations, this study contributes to the advancement of administrative strategies and health policy, and it sets the stage for broader application and future research into integrated educational and digital solutions for health insurance claim management in Indonesia and beyond.

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