

Revenue Projection of Padang Panjang General Hospital Based on Standard Inpatient Class (KRIS) Policy Based on Ina-CBGs Tariff Simulation

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ABSTRACT

The Standard Inpatient Class (KRIS) policy, which replaces the BPJS Kesehatan class 1, 2, and 3 system, poses financial implications for regional public hospitals, particularly regarding conformity of INA-CBGs tariffs to real service costs. This tariff gap can suppress hospital cash flow, leaving Padang Panjang Hospital, a Regional Referral Hospital, with uncertain revenue projections following KRIS implementation. Purpose: This study aims to analyze the projected revenue of Padang Panjang Hospital based on INA-CBGs tariff simulation under the KRIS scheme. Methods: The study used a quantitative descriptive design using a retrospective approach on secondary data, conducted at Padang Panjang Hospital, West Sumatra. The sample comprised all inpatient claims from January–December 2025, totaling 1,240 episodes, selected through total sampling. Data were collected via documentation study of medical record and INA-CBGs claim data. Univariate analysis described the distribution of tariffs and case volumes, while bivariate analysis used the Paired t-test/Wilcoxon test to examine tariff differences and Pearson correlation to examine the relationship between case severity and tariff differences. Results: Results showed a mean difference between real and INA-CBGs tariffs of IDR 387,500 per episode (SD = 112,300), with a projected revenue decrease of 8.7% following KRIS implementation. Bivariate analysis showed a significant relationship between case severity and tariff difference magnitude ($p = 0.012$; $r = 0.341$). Implications: These findings imply the need to strengthen clinical pathways and improve operational cost efficiency. Conclusion: Padang Panjang Hospital needs to develop a case-mix strategy and a real-time claims monitoring system to maintain financial sustainability in the KRIS era

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INTRODUCTION

The transformation of healthcare financing systems has become a major agenda in achieving Universal Health Coverage (UHC), as the sustainability of healthcare services highly depends on the ability of health systems to manage resources effectively and efficiently. Increasing healthcare demands, advances in medical technology, population aging, and the growing complexity of diseases have created substantial

financial pressure on healthcare organizations worldwide. Hospitals are required not only to provide high-quality and safe healthcare services but also to maintain financial sustainability to ensure continuous service delivery. In this context, clinical governance and healthcare financing management have become essential components in balancing service quality, patient safety, and operational efficiency. The World Health Organization emphasizes that strong governance mechanisms and efficient resource utilization are fundamental elements in maintaining sustainable health systems, particularly in countries implementing universal health coverage schemes (World Health Organization, 2024).

The transformation of healthcare financing systems has become a central agenda in achieving Universal Health Coverage (UHC), as the sustainability of health services depends heavily on how effectively health systems manage resources under rising demand, technological advances, population aging, and growing disease complexity. The World Health Organization emphasizes that strong governance mechanisms and efficient resource utilization are fundamental to sustaining health systems, particularly in countries implementing universal coverage schemes (World Health Organization, 2024).

In Indonesia, UHC is pursued through the National Health Insurance Program (Jaminan Kesehatan Nasional [JKN]), managed by BPJS Kesehatan since 2014, and reimbursed prospectively through the Indonesia Case-Based Groups (INA-CBGs) system. INA-CBGs pays hospitals a predetermined tariff per diagnosis group rather than per service rendered, intended to encourage efficiency and standardized clinical practice. In practice, however, several cost-analysis studies have documented persistent gaps between INA-CBGs tariffs and hospitals' actual treatment costs particularly for chronic, high-complexity, and resource-intensive cases which can erode hospital cash flow and limit capacity for operational and quality investments (Nilansari et al., 2023; Maryati et al., 2020; Yusran et al., 2025).

A further layer of reform is the Standard Inpatient Class (Kelas Rawat Inap Standar [KRIS]), which replaces the previous Class I/II/III system with a single standardized minimum facility requirement for all JKN participants. KRIS is designed to reduce disparities in inpatient facilities, but it simultaneously reshapes hospital cost structures through bed reconfiguration, infrastructure upgrades, and altered service capacity with reimbursement implications that are not yet well understood (Government of the Republic of Indonesia, 2024; Ministry of Health of the Republic of Indonesia, 2024).

These financing shifts intersect directly with clinical governance the integrated framework of leadership, clinical audit, risk management, and quality improvement that shapes how clinical decisions translate into resource use. Prior research links weak clinical governance to excessive length of stay, unnecessary procedures, and inflated costs, while stronger governance is associated with standardized care pathways and better cost control under case-based payment (Braithwaite et al., 2020; Putra et al., 2021; Nurwahyuni et al., 2022; Nugraheni et al., 2023). For regional public hospitals which must balance equitable access with financial sustainability and depend heavily on JKN claims as their primary revenue source this interaction between governance and financing is not peripheral but central to institutional survival (Anjayani et al., 2022).

The literature to date establishes three points fairly consistently: (1) INA-CBGs tariffs frequently diverge from actual hospital costs, especially for complex and high-severity cases (Nilansari et al., 2023; Yusran et al., 2025); (2) clinical governance quality is empirically associated with cost efficiency and financial performance under prospective payment (Braithwaite et al., 2020; Nugraheni et al., 2023); and (3) real-time claim and case-mix monitoring improves hospitals' ability to manage reimbursement risk (Setiawan et al., 2021).

These strands, however, have largely been studied in isolation. Existing INA-CBGs studies tend to focus on single diseases or cost-reimbursement comparisons *prior to* KRIS, without simulating how standardized inpatient facilities under KRIS would alter case-mix-based revenue projections (Sari et al.,



2022; Ramadhani et al., 2024). Conversely, clinical governance research has rarely been connected to concrete tariff-simulation outcomes, and almost no published work examines this combination specifically within a regional referral hospital setting where case severity, referral patterns, and dependence on JKN revenue create distinct financial exposure compared to private or urban tertiary hospitals (Dewi et al., 2025).

Regional referral hospitals cannot wait for national-level evidence to catch up: KRIS implementation is already underway, and hospitals need forward-looking, facility-specific evidence to plan bed capacity, staffing, and budgets before reimbursement patterns shift. Without an integrated analysis that combines actual claims data, INA-CBGs tariff simulation under KRIS, and an assessment of clinical governance readiness, hospital managers are left to make these decisions with financial and clinical evidence disconnected from one another.

This research addresses that gap by jointly analyzing inpatient claim and case-mix data, simulating INA-CBGs tariffs under the KRIS scheme, and assessing clinical governance readiness at Padang Panjang Regional Hospital, a regional referral facility in West Sumatra. To our knowledge, this is among the first studies to integrate KRIS-based revenue projection with clinical governance evaluation at the single-hospital level, offering evidence that is both empirically grounded in local claims data and directly actionable for hospital strategic planning rather than a generalized policy assessment. The findings are intended to give hospital managers and policymakers a concrete, facility-level basis for maintaining financial sustainability without compromising care quality as KRIS is rolled out.

METHODS

This study employed a mixed-methods sequential explanatory design, combining a quantitative retrospective analytic component to simulate INA-CBGs tariffs and project hospital revenue under the Standard Inpatient Class (KRIS) policy, with a qualitative component to explain clinical governance dynamics underlying the observed reimbursement patterns. The study was conducted at Padang Panjang Regional Hospital, West Sumatra, a JKN-affiliated regional referral hospital.

The quantitative sample comprised 1,240 inpatient claim episodes submitted to BPJS Kesehatan between January and December 2025, selected by total sampling. Eligible claims had complete INA-CBGs documentation, verified diagnosis/procedure codes, and complete cost and reimbursement data; incomplete, rejected, or duplicate claims were excluded. For each claim, actual treatment cost was reconstructed from hospital billing data (room, drug, diagnostic, procedure, and professional-fee costs), and reimbursement was calculated twice: under the current Class I/II/III tariff structure (baseline) and under a KRIS-adjusted tariff simulation, in which the room-class tariff component was replaced with the single standardized inpatient rate while diagnosis-severity grouping (INA-CBGs severity I–III, an ordinal variable) was held constant. Tariff difference (cost minus reimbursement) was computed for both baseline and simulated values and classified as deficit or surplus; per-claim differences were aggregated by severity level and case type to project overall hospital revenue change (IDR and %).

Qualitative data were collected through semi-structured interviews with 15 purposively sampled informants (clinicians and hospital management involved in clinical governance, quality assurance, and claim management), guided by four indicators: clinical pathway implementation, service standardization, cost-control mechanisms, and claim management processes.

Quantitative data were analyzed univariately to describe claim, cost, and reimbursement distributions. Normality of continuous variables was assessed with the Shapiro-Wilk test, which indicated non-normal distributions; non-parametric tests were therefore used for bivariate analysis. The Chi-Square test examined the association between case-severity category and reimbursement outcome (deficit/surplus), as both are categorical. Spearman rank correlation—rather than Pearson—was used to assess the relationship

between severity level (ordinal) and tariff-difference magnitude, and the Kruskal-Wallis test compared tariff differences across the three severity groups, consistent with the ordinal/non-normal nature of the data. Interview transcripts were analyzed thematically and triangulated with the quantitative findings to interpret the drivers of reimbursement gaps.

RESULTS

Table 1. Distribution of Inpatient Claims Characteristics and Tariff Differences Under the KRIS Simulation Scheme (n=1,240)

Variables	Category	n (%) / Mean $\pm$ SD
Inpatient claim episodes	Total cases	1,240 (100%)
Case severity level	Mild severity	520 (41.9%)
	Moderate severity	485 (39.1%)
	Severe severity	235 (19.0%)
Actual hospital tariff per episode (IDR)	Mean $\pm$ SD	6,245,700 $\pm$ 1,845,600
INA-CBGs reimbursement tariff per episode (IDR)	Mean $\pm$ SD	5,858,200 $\pm$ 1,790,300
Difference between actual tariff and INA-CBGs tariff (IDR)	Mean $\pm$ SD	387,500 $\pm$ 112,300
Claims with reimbursement deficit	n (%)	893 (72.0%)
Claims with reimbursement surplus	n (%)	347 (28.0%)
Projected revenue change after KRIS implementation	Decrease	8.7%

Table 1 shows that the study involved 1,240 inpatient claim episodes analyzed during the January–December 2025 period. Most inpatient cases were categorized as mild severity (41.9%), followed by moderate severity (39.1%) and severe severity (19.0%). The average actual hospital tariff per episode was IDR 6,245,700, while the average INA-CBGs reimbursement tariff was IDR 5,858,200, resulting in an average reimbursement gap of IDR 387,500 per episode (SD = IDR 112,300). A total of 72.0% of inpatient claims experienced a deficit between actual service costs and INA-CBGs reimbursement, indicating that most inpatient services generated lower reimbursement compared with the actual expenditure incurred by the hospital. Based on the simulation of KRIS implementation, the hospital was projected to experience an 8.7% decrease in revenue, suggesting potential financial pressure on hospital sustainability if cost-efficiency strategies are not strengthened.

Table 2. Relationship Between Case Severity and Difference Between Actual Tariff and INA-CBGs Reimbursement

Case Severity	Mean Tariff Difference (IDR) $\pm$ SD	Deficit Claims n (%)	Surplus Claims n (%)	p-value	Correlation (r)
Mild severity	295,400 $\pm$ 96,700	310 (59.6%)	210 (40.4%)		
Moderate severity	402,800 $\pm$ 105,600	375 (77.3%)	110 (22.7%)		
Severe severity	548,900 $\pm$ 138,500	208 (88.5%)	27 (11.5%)		



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Total	387,500 ± 112,300	893 (72.0%)	347 (28.0%)	0.012	0.341
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Table 2 demonstrates that case severity was significantly associated with the magnitude of the difference between actual hospital tariffs and INA-CBGs reimbursement rates. The mean tariff gap increased according to case severity, with severe cases showing the highest difference (IDR 548,900 ± 138,500), followed by moderate cases (IDR 402,800 ± 105,600) and mild cases (IDR 295,400 ± 96,700). The Chi-Square test showed a statistically significant relationship between case severity category and reimbursement difference ($p = 0.012$). Furthermore, Pearson correlation analysis indicated a positive correlation between case severity and tariff discrepancy ($r = 0.341$), suggesting that higher severity levels were associated with greater differences between actual service costs and INA-CBGs reimbursement. These findings indicate that complex cases represent a higher financial risk for hospitals operating under a fixed prospective payment system.

Table 3. Pearson Correlation Analysis Between Case Severity and INA-CBGs Tariff Gap

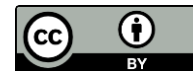
Variable	Mean ± SD	Correlation Coefficient (r)	p-value	Interpretation	
Case severity level	1.77 ± 0.76	0.341	0.012	Significant correlation	positive
Tariff difference (Actual cost – INA-CBGs)	IDR 387,500 ± 112,300				

Table 3 confirms the Pearson correlation analysis between case severity and reimbursement gap. The correlation coefficient value of $r = 0.341$ indicates a moderate positive relationship, meaning that increasing case severity tends to be followed by an increase in the difference between actual hospital costs and INA-CBGs reimbursement. The statistical significance value ($p = 0.012$) indicates that this relationship is unlikely to occur by chance. These findings emphasize that hospitals managing higher-complexity cases require stronger case-mix management, accurate clinical coding, and improved clinical pathway control to reduce financial losses under the KRIS reimbursement framework.

DISCUSSION

The findings of this study demonstrate that the simulated implementation of the Standard Inpatient Class (KRIS) at Padang Panjang Regional Hospital may generate substantial financial implications for hospital sustainability. Based on the analysis of 1,240 inpatient claim episodes, the average difference between actual hospital service costs and INA-CBGs reimbursement was IDR 387,500 per episode, with a standard deviation of IDR 112,300. In addition, 72.0% of inpatient claims experienced a deficit between actual service costs and INA-CBGs reimbursement. Most importantly, the revenue projection simulation indicated a potential 8.7% decrease following KRIS implementation. These findings indicate that the financial consequences of KRIS should not be viewed only from the perspective of changes in inpatient room standards but also in relation to the existing reimbursement mechanism, patient case complexity, resource utilization, and the hospital's capacity to manage costs.

The 8.7% decrease in projected revenue represents the central finding that requires further interpretation. The figure was derived from a simulation comparing the hospital's projected financial position under the existing inpatient service and reimbursement conditions with the projected condition following the implementation of KRIS. The simulation incorporated the volume and characteristics of inpatient claims, the difference between actual service costs and INA-CBGs reimbursement, and the potential financial consequences of changes associated with the KRIS scheme. Therefore, the 8.7% figure should be interpreted as a projected financial impact rather than an observed post-implementation decline in revenue. In other



words, the simulation illustrates the magnitude of potential financial vulnerability if the current relationship between service costs, case volume, case severity, and reimbursement remains relatively unchanged during the transition to KRIS.

The interpretation of the 8.7% projection is strengthened by the finding that 72.0% of inpatient claims experienced a deficit. A deficit in an individual claim does not necessarily translate directly into an equivalent reduction in total hospital revenue because aggregate revenue is also determined by patient volume and case composition. However, when the majority of inpatient episodes generate a difference between actual costs and reimbursement, the cumulative effect can reduce the hospital's financial flexibility. The average difference of IDR 387,500 per episode provides an indication of the magnitude of this mismatch. When such a difference occurs repeatedly across a large number of inpatient episodes, it can contribute to financial pressure, particularly when the hospital simultaneously faces additional expenditure associated with service standardization under KRIS.

One possible explanation for the projected revenue decline is the mismatch between the resources consumed in providing inpatient services and the predetermined reimbursement under the prospective payment system. INA-CBGs is designed as a case-based payment mechanism in which reimbursement is determined according to patient characteristics and case classification rather than the actual cost of every individual service component. The Ministry of Health Regulation Number 3 of 2023 establishes the standards for health service tariffs within the National Health Insurance program and stipulates that advanced referral healthcare facilities (FKRTL) use INA-CBG and non-INA-CBG payment mechanisms. The regulation also requires FKRTL to comprehensively input service components, including types of services, service costs, and medicines into the INA-CBG electronic claim system.

From a policy perspective, this finding is important because the hospital's financial position is not determined solely by its internal management but is also influenced by the national health financing framework. Presidential Regulation Number 59 of 2024 represents a major regulatory basis for the transformation of the JKN inpatient system and amended Presidential Regulation Number 82 of 2018 concerning Health Insurance. The regulation was issued as part of the adjustment of the national health insurance governance framework following policy evaluation. Consequently, the implementation of KRIS should be understood as a national policy reform that requires hospitals to adapt their clinical, operational, infrastructure, and financial management systems.

The relationship between KRIS and hospital financial sustainability therefore needs to be interpreted within the broader architecture of JKN financing. KRIS seeks to establish greater standardization and equity in inpatient services, whereas INA-CBGs determines reimbursement based on case classification. These two policy dimensions may interact at the hospital level. Standardization of inpatient services can generate additional operational requirements, while the payment mechanism remains dependent on case classification and reimbursement rates. Consequently, a hospital may experience financial pressure when the cost of meeting standardized service requirements increases while reimbursement does not increase proportionally.

The findings of the interviews with 15 informants provide an important qualitative perspective for understanding this potential financial pressure. The quantitative simulation identifies the magnitude of the potential impact, whereas the interviews provide insight into how hospital managers and healthcare professionals perceive the operational consequences of KRIS. This qualitative evidence would help explain why the projected 8.7% decline in revenue should not be interpreted merely as a reduction in income but as a potential narrowing of the hospital's financial operating margin.

The interview findings should also be connected to the hospital's readiness to implement national policy. If informants identified infrastructure adaptation and additional resource requirements as major concerns, these findings would complement the quantitative simulation by demonstrating the expenditure



side of KRIS implementation. Conversely, if informants emphasized efficiency, coding accuracy, clinical pathway implementation, and claim management, these findings would indicate that managerial adaptation may reduce some of the projected financial risk. Thus, the interviews provide an organizational explanation for the numerical results rather than functioning merely as supplementary descriptive information.

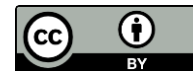
The reimbursement gap also needs to be understood in relation to the national policy governing INA-CBGs. Minister of Health Regulation Number 26 of 2021 provides guidance on Indonesian Case Base Groups in the implementation of the National Health Insurance program. The existence of a formal case-based grouping mechanism means that accurate clinical documentation, diagnosis classification, procedure recording, and coding are essential components of hospital reimbursement. Recent research published in the *Jurnal Jaminan Kesehatan Nasional* also emphasizes the importance of clinical coding expertise within the JKN payment environment. Therefore, the reimbursement difference observed in this study may not be attributable exclusively to the tariff itself; the quality of clinical documentation, coding, case classification, and claim administration should also be considered.

The study further demonstrated a significant relationship between case severity and the difference between actual hospital tariffs and INA-CBGs reimbursement rates ($p = 0.012$; $r = 0.341$). The analysis showed that higher severity levels were associated with greater reimbursement gaps, with severe cases experiencing the highest average tariff difference compared with moderate and mild cases. This finding indicates that the complexity of patient conditions is associated with differences in resource utilization and the potential financial burden experienced by hospitals under the prospective payment system. One possible explanation is that patients with higher severity levels require more intensive interventions, longer lengths of stay, additional diagnostic procedures, and greater involvement of multidisciplinary healthcare teams, thereby increasing actual service costs beyond the predetermined INA-CBGs reimbursement value.

This finding is also consistent with the function of the referral healthcare system established by the Ministry of Health. Minister of Health Regulation Number 16 of 2024 concerning the Individual Health Service Referral System stipulates that referrals are based on the patient's medical needs and the service capabilities of healthcare facilities. The regulation further identifies service types, healthcare personnel, infrastructure, pharmaceutical and medical-device availability, and facility capacity as components of healthcare facility capability. It also states that referral criteria include patient conditions requiring diagnostic, therapeutic, or other interventions that cannot be provided at the referring facility. These provisions provide a policy explanation for why referral hospitals may manage patients with greater clinical complexity and consequently experience higher resource utilization.

The significant relationship between severity and reimbursement differences therefore has practical implications for Padang Panjang Regional Hospital. As a regional hospital receiving patients according to medical needs and facility capabilities, the hospital may encounter substantial variation in clinical complexity. Higher-severity cases can require more diagnostic examinations, medicines, medical devices, specialist involvement, monitoring, and longer hospitalization. When these resources are not sufficiently reflected in the predetermined reimbursement value, the financial gap can become larger. The moderate correlation coefficient ($r = 0.341$) nevertheless indicates that severity is only one of several factors associated with the reimbursement difference. Other factors, including length of stay, coding accuracy, clinical documentation, treatment patterns, clinical pathways, and operational efficiency, may also contribute.

The results of the interviews with 15 informants can strengthen this interpretation if the informants reported differences in resource utilization according to case severity. Such findings would provide qualitative evidence explaining the quantitative relationship between severity and reimbursement differences. For example, if informants consistently reported that severe cases required greater clinical resources than less



severe cases, this would provide an operational explanation for the statistical finding of $p = 0.012$ and $r = 0.341$.

The finding that 72.0% of claims experienced deficits also has implications for clinical governance. Financial efficiency cannot be pursued by simply reducing necessary clinical services because hospitals remain responsible for maintaining patient safety and service quality. Clinical governance provides a mechanism for balancing clinical quality, resource utilization, risk management, and financial sustainability. The objective should therefore be to reduce unnecessary variation in care rather than to restrict clinically necessary treatment. This approach is particularly important in the context of KRIS because standardization of inpatient facilities must be accompanied by standardization and optimization of clinical processes.

Clinical pathways represent one potential strategy for addressing this challenge. Evidence-based clinical pathways can assist healthcare professionals in determining appropriate diagnostic and therapeutic interventions, controlling unnecessary variation, and managing length of stay. In the context of INA-CBGs, appropriate clinical pathway implementation may help hospitals identify cases in which actual resource utilization substantially exceeds the expected resource profile. However, pathways should remain sufficiently flexible to accommodate severe and complex cases. Excessive standardization could create clinical risks if the pathway does not adequately accommodate patient-specific needs.

Another important strategy is strengthening case-mix management. Case-mix management involves monitoring patient characteristics, diagnosis patterns, severity levels, resource consumption, length of stay, costs, and reimbursement outcomes. Such information can be used to identify high-cost cases and determine whether the financial gap results from case complexity, coding issues, operational inefficiency, or limitations in the reimbursement structure. In this study, the significant relationship between severity and reimbursement differences suggests that case-mix monitoring should become an important component of hospital financial governance.

Claim management is equally important. Permenkes Number 3 of 2023 explicitly requires FKRTL to enter service components comprehensively into the INA-CBG electronic claim system. This requirement demonstrates that accurate and complete information is not merely an administrative matter but forms part of the reimbursement process. Consequently, strengthening collaboration among physicians, nurses, medical record officers, coders, claim officers, pharmacists, finance personnel, and hospital management may help reduce avoidable reimbursement discrepancies.

The role of BPJS Kesehatan should also be considered within this framework. The JKN financing system involves interaction between healthcare providers and BPJS Kesehatan, while tariff standards are established within the regulatory framework of the Ministry of Health. Permenkes Number 3 of 2023 states that the review of health service tariff standards considers contribution adequacy and program sustainability and involves the Ministry of Health, BPJS Kesehatan, the National Social Security Council, and the ministry responsible for fiscal affairs. This indicates that tariff policy is inherently a multi-stakeholder policy issue rather than solely a hospital-level decision.

This policy arrangement is particularly relevant to the 8.7% projection. If hospital costs increase because of KRIS-related service requirements while reimbursement remains relatively fixed, the resulting financial pressure may become more pronounced. Therefore, the simulation in this study can provide evidence for policy evaluation by demonstrating how national reimbursement and service-standard policies may translate into financial consequences at the individual hospital level. The simulation does not imply that KRIS itself necessarily causes an 8.7% reduction in revenue; rather, it identifies a potential scenario under the observed cost and reimbursement conditions.

The distinction between a simulated projection and an observed policy effect is important. Because KRIS implementation involves organizational adaptation, the actual financial outcome may differ from the



8.7% estimate. Changes in patient volume, case severity, length of stay, coding quality, clinical efficiency, tariff policy, infrastructure expenditure, and management strategies may increase or decrease the eventual impact. Therefore, the 8.7% figure should be treated as an early-warning indicator and scenario-planning parameter rather than a definitive measure of post-KRIS financial loss.

The government policy framework also emphasizes the importance of balancing efficiency with quality and access. The referral regulation requires that the referral system consider medical need, facility capability, accessibility, quality, safety, effectiveness, and efficiency. This regulatory perspective is consistent with the findings of this study because financial efficiency should not be achieved by reducing clinically necessary resources. Instead, efficiency should arise from better coordination, appropriate case management, accurate documentation, effective resource allocation, and elimination of avoidable waste.

The potential role of fraud prevention should also be considered. Minister of Health Regulation Number 16 of 2019 regulates the prevention and management of fraud and administrative sanctions in the implementation of the National Health Insurance program. This policy is relevant because efforts to optimize reimbursement must remain within the principles of accurate documentation, appropriate coding, and legitimate claims. Hospitals should therefore improve reimbursement performance through better clinical and administrative processes rather than through practices that could distort case classification or claim values.

The integration of the quantitative and qualitative findings demonstrates that financial sustainability under KRIS is multidimensional. The quantitative results show a potential 8.7% reduction in revenue, an average reimbursement difference of IDR 387,500 per inpatient episode, a 72.0% proportion of deficit claims, and a significant relationship between case severity and reimbursement differences. The qualitative component involving 15 informants is important because it can explain the operational mechanisms underlying these financial outcomes. Taken together, these findings suggest that the financial consequences of KRIS are influenced by the interaction between national policy, reimbursement mechanisms, clinical complexity, resource utilization, infrastructure requirements, and hospital management capacity.

The findings have several implications for hospital management. First, the hospital should establish continuous monitoring of revenue and cost by case group and severity level. Second, the hospital should strengthen clinical documentation and coding quality to ensure that the patient's actual clinical condition is appropriately represented in the claim. Third, management should develop real-time monitoring of high-cost and high-severity cases. Fourth, clinical and financial departments should jointly evaluate cases with substantial differences between actual costs and INA-CBGs reimbursement. Finally, KRIS preparedness should be incorporated into hospital financial planning through several scenarios rather than relying on a single projected revenue figure.

The findings also have implications for policymakers. The 8.7% projected decrease provides empirical evidence that policy implementation should be accompanied by continuous evaluation of the relationship between reimbursement and actual hospital resource consumption. This is particularly important for regional hospitals that may have a high proportion of referred and clinically complex patients. Periodic tariff evaluation, improvement in case classification, strengthening of claim governance, and consideration of differences in hospital case mix may be necessary to ensure that the objectives of equitable inpatient service and financial sustainability can be achieved simultaneously.

Overall, this study demonstrates that the implementation of KRIS should be evaluated not only as an infrastructure and service-standard reform but also as a health-financing and hospital-governance reform. The projected 8.7% decrease in revenue, combined with the high proportion of deficit claims and the significant association between case severity and reimbursement differences, indicates the existence of potential financial vulnerability at the hospital level. The regulatory framework established through

Presidential Regulation Number 59 of 2024, Minister of Health Regulation Number 3 of 2023, Minister of Health Regulation Number 16 of 2024, and other JKN-related regulations provides the policy context within which these findings should be interpreted. The principal implication is that successful KRIS implementation requires alignment between standardized inpatient services, adequate reimbursement, accurate case classification, strong clinical governance, and hospital financial preparedness.

CONCLUSIONS

This study concludes that the implementation of the Standard Inpatient Class (KRIS) scheme at Padang Panjang Regional Hospital has significant implications for hospital financial sustainability, particularly due to the discrepancy between actual service costs and INA-CBGs reimbursement rates. The analysis of 1,240 inpatient claim episodes demonstrated that the average difference between real tariffs and INA-CBGs tariffs reached IDR 387,500 per episode, with a projected decrease in hospital revenue of 8.7% following KRIS implementation. Furthermore, the significant relationship between case severity and reimbursement differences indicates that higher-complexity cases contribute to greater financial pressure under the prospective payment system. These findings emphasize the importance of strengthening clinical governance, optimizing case-mix management, improving clinical pathway implementation, and developing real-time claim monitoring systems to support hospital financial resilience while maintaining quality healthcare services. The integration of clinical and financial management strategies is essential for regional referral hospitals to adapt effectively to healthcare financing transformation in the KRIS era.

This study has several limitations that should be considered when interpreting the findings. First, the research was conducted in a single regional hospital, which may limit the generalizability of the results to other hospitals with different characteristics, service capacities, and financial structures. Second, the study relied primarily on retrospective secondary data from inpatient claims and medical records; therefore, variations in documentation completeness, coding accuracy, and cost recording may have influenced the analysis results. Third, the revenue projection was based on INA-CBGs tariff simulations and available claim data, without incorporating broader external factors such as future policy adjustments, changes in BPJS Kesehatan reimbursement regulations, inflation, and variations in operational costs. Future studies are recommended to involve multiple regional hospitals, apply longitudinal designs, and integrate comprehensive cost analysis approaches to provide stronger evidence regarding the long-term financial impact of KRIS implementation and strategies for sustainable hospital management.

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