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Evaluation of INA-CBGs Tariffs in BPJS Outpatients as an Effort to Control Quality and Costs at the ENT Polylinic of Surabaya Islamic Hospital

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A B S T R A C T

This study aims to analyse shifts in demographic profiles and evaluate INA-CBGs tariffs in BPJS outpatients at the ENT Polylinic of Surabaya Islamic Hospital from 2023 to 2024. It was a quantitative descriptive design with an evaluative approach. The population included all medical records and hospital cost information. The sample was selected based on specific criteria reflecting dominant cases during 2023 and 2024. Data collection techniques involved a documentary study of BPJS claim files in TXT format. Data analysis was performed by comparing INA-CBGs rates with unit costs calculated using the Activity-Based Costing (ABC) method. Results showed a shift in demographic profile in BPJS outpatients at the ENT Polylinic of Surabaya Islamic Hospital from 2023 to 2024, with an increase in females and the age groups of adults and older people. Hospital costs for consultation decreased, while nursing, medications, and equipment rental increased. Despite the overall decline in outpatients handled by the ENT Polylinic, hospitals could still increase the difference between hospital costs and claims. It indicates an improvement in claim management efficiency. In conclusion, hospitals should adapt to changes in patient demographic profiles, which are increasingly dominated by older people with chronic disease risks, potentially increasing the cost burden. The results of this study could be a basis for developing more adaptive service management strategies, emphasizing the strengthening of primary care, chronic disease control, and the implementation of an integrated health information system to ensure hospital efficiency and service quality.

INTRODUCTION

Implementing the National Health Insurance (*Jaminan Kesehatan Nasional* or JKN) program managed by the Social Security Agency on Health (*Badan Penyelenggara Jaminan Sosial Kesehatan* or *BPJS Kesehatan*) has brought significant changes to the healthcare financing system (Cheng *et al.*, 2025). The Indonesian Case-Based Groups (INA-CBGs) payment system has become the tertiary referral hospitals' standard claim mechanism. This mechanism pays healthcare costs in packages based on the patient's diagnosis, aiming to enhance efficiency, control costs, and maintain the quality of healthcare services (Widayati and Estiningtyastuti, 2022). However, in the ENT (Ear, Nose, and Throat) Polyclinics, an imbalance existed between INA-CBG rates and actual hospital costs (Roesbianto *et al.*, 2022). This imbalance can cause hospital funding deficits, ultimately affecting the quality of patient service.

Previous research showed that the difference between INA-CBG and hospital costs could reach an average of IDR 60,174 per patient (Roesbianto *et al.*, 2022). Although seemingly minor, it becomes significant when accumulated over a high number of annual visits. The ENT Polyclinic is a strategic service unit that

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handles chronic diseases such as otitis media, sinusitis, tinnitus, and hearing disorders. Those diseases are prevalent among adult and elderly populations, impacting health and reducing patients' quality of life and productivity (Edi Kurnawan *et al.*, 2025).

Therefore, evaluating the INA-CBG rates in BPJS outpatients at the ENT Polyclinic is crucial. The issue at the ENT Polyclinic of Surabaya Islamic Hospital was cost deficits in specific hospital services (Putra *et al.*, 2024). The actual costs for medical procedures, equipment use, medications, and medical staff in ENT outpatient services often exceed the rates paid by BPJS based on INA-CBGs. This imbalance has two main impacts: first, an increasing financial burden on hospitals, which poses a risk to the sustainability of services; second, the potential for a decline in service quality due to resource constraints, limited service time, or the reduction of treatment components to control costs (Suprapto, Nita and Hermansyah, 2023).

A study by Putri and Fonna (2023) found that public hospitals serving JKN patients experienced significant disparities between INA-CBG rates and hospital costs for specific polyclinics. This mismatch prompted hospitals to implement cross-subsidies or service restrictions, ultimately impacting patient quality and satisfaction. Rahayu et al. (2022) emphasise that the tariff-cost gap must be systematically analysed to enable hospitals to design integrated quality and cost control strategies.

The urgency of this research lies in the need for data-driven interventions to prevent those ongoing systemic imbalances between tariffs and hospital costs. If not promptly evaluated and managed, the imbalance will reduce service quality, worsen hospital cash flow, and threaten the sustainability of funding for specialised outpatient services such as the ENT Polyclinic. Therefore, a thorough evaluation is needed to ensure that INA-CBGs reflect actual hospital costs and continue to guarantee service quality. This study aims to analyse shifts in demographic profiles and evaluate INA-CBGs tariffs in BPJS outpatients at the ENT Polylinic of Surabaya Islamic Hospital from 2023 to 2024.

METHOD

This study was a quantitative descriptive design with an evaluative approach. It was conducted at the ENT Polyclinic of Surabaya Islamic Hospital. The population in this study included all medical records and hospital cost information of BPJS outpatient ENT patients. The sample was selected based on specific criteria reflecting dominant cases during 2023 and 2024. Data collection techniques involved a documentary study of BPJS claim files in TXT format, which contained information about INA-CBGs tariffs, patient characteristics, and the consistency of codes and diagnoses to identify potential tariff differences between the two years. If necessary, qualitative interviews were conducted with management staff and medical personnel to obtain practical perspectives on implementing quality and cost control in the field. Data analysis was performed by comparing INA-CBGs rates with unit costs calculated using the

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Activity-Based Costing (ABC) method. Furthermore, the efficiency and quality of services were analysed based on indicators such as waiting time, drug availability, and completeness of medical procedures provided. This approach can provide a comprehensive overview of the effectiveness of the tariff system in supporting efficient and quality services.

RESULT

Table 1 indicates demographic shifts between 2023 and 2024. Female respondents increased more significantly than males, though both grew in number. Age distribution shows decline in infants, children, and adolescents, while adults, pre-elderly, and elderly groups rose notably, suggesting a 2024 profile dominated by older age groups.

Table 1. Patient Demographic Profiles at the ENT Polylinic of Surabaya Islamic Hospital in 2023 and 2024

Patient Demographic Profiles	2023		2024	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Sex				
Male	798	41	884	40.6
Female	1,133	59	1,294	59.4
Age Group				
Infants	16	1	9	0
Toddler	271	12	292	13
Children	198	8	146	6
Teenagers	523	22	222	10
Adults	411	18	538	23
Pre-elderly	411	18	522	23
Elderly	512	22	575	25
Total	2,342	100	2,304	100

From 2023 to 2024, hospital cost proportions shifted. Consultation fees, while still dominant, decreased by about 4%. Nursing costs rose significantly (from 1% to 5%), hospital costs increased by 2%, and equipment rental grew to 2%. Meanwhile, accommodation and radiology costs dropped by 2% and 1%, respectively. Overall, total hospital costs increased with a more diverse distribution, shifting from consultation services toward supporting aspects like nursing, medicine, and equipment rental.

Table 2. Hospital Costs in the ENT Polylinic at Surabaya Islamic Hospital in 2023 and 2024

Hospital Services	2023 (IDR)	Percentage (%)	2024 (IDR)	Percentage (%)
Non-Surgical Procedures	8,920,000	3	5,260,000	2
Consultation service	116,300,000	45	131,122,900	41
Nursing	2,025,000	1	14,505,000	5
Support	60,000	0	1,583,000	0
Radiology	4,315,000	2	4,592,700	1
Laboratory	250,000	0	840,000	0
Ticket	58,010,000	23	65,510,000	21
Medicine	66,224,954	26	88,767,225	28
Equipment Rental	375,000	0	5,489,300	2
Total	256,479,954	100	317,670,125	100

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Table 3 demonstrates that overall, the number of patients handled by the ENT Outpatient Clinic decreased from 2023 to 2024. However, the total cost difference between INA-CBGs tariffs and hospital costs increases, indicating improvements in INA-CBGs claim management and an increase in the value of claims for several types of services. Although the number of patients with minor chronic diseases decreases, the financial burden remains high. This situation indicates that patients are still highly dependent on these services. Thus, chronic disease control strategies should be strengthened to make hospital financing more efficient.

Table 3. The Cost Differences between INA-CBGs Tariffs with Hospital Costs in 2023 and 2024

Hospital Services	2023				2024			
	n	Hospital costs (IDR)	INA-CBGs (IDR)	Differences (IDR)	n	costs (IDR)	INA-CBGs (IDR)	Differences (IDR)
Minor Chronic Illness	1,896	255,334,824	390,386,400	135,051,576	1,719	223,213,980	352,686,600	129,472,620
Ear, nose, mouth, and throat Procedures	105	17,297,000	33,904,500	16,607,500	119	17,719,539	38,085,500	20,365,961
Ear, Nose, Mouth, and Throat Tests	70	27,123,700	21,987,000	5,136,700	29	5,568,056	9,089,200	3,521,144
Consultation or Other Examinations	66	6,929,181	10,137,600	3,208,419	1	795,400	424,300	-
Other Minor Acute Illnesses	27	3,462,900	5,775,300	2,312,400	62	8.897.979	13,241,700	4,343,721
Total	2,164	310,147,605	462,190,800	152,043,195	1,930	256,194,954	413,527,300	157,332,346

There was an increase in the number of ENT procedures and cost differences. It had a positive impact because the cost differences between claims and hospital costs were quite profitable, thereby increasing the positive contribution to hospital finances. In contrast, the hospital incurred losses in 2023 for ENT tests because the hospital costs were higher than the INA-CBGs claims received. However, in 2024, the hospital no longer incurred losses for ENT tests (Table 3).

Consultation or other examination services in 2023 still yielded profits. Still, a significant decline in 2024 resulted in losses due to higher hospital costs than the claims received. Thus, re-evaluating the funding model for consultation services is crucial. Meanwhile, hospital services for other minor acute illnesses increased and provided additional hospital profits because claims were higher than the hospital costs. This condition presents a positive opportunity to enhance those services. In summary, despite the decrease in the number of patients handled by the ENT Polyclinic, the hospital managed to maintain an increase in INA-CBG claims. The main challenge was in consultation services, which incurred losses, necessitating a thorough evaluation of the INA-CBGs tariff and claim mechanisms (Table 3).

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DISCUSSION

Demographic data of BPJS outpatients at the ENT Polyclinic showed a shift from 2023 to 2024. There was an increase in the number of women outpatients. In addition, there was a decrease in the younger age groups and an increase in the adult to elderly age groups (Table 1). This pattern aligns with findings from a previous study at Surabaya Islamic Hospital, which noted that most ENT outpatients were over 50 years old and mostly diagnosed with mild chronic conditions (Arifin *et al.*, 2021). The increasing proportion of adults to elderly patients is likely linked to the characteristics of patients who frequently require repeated care or management of chronic conditions.

In addition, national data from the ENHANCE study published in 2025 showed that age and gender were the main predictors of healthcare utilisation in Indonesia. Older people groups tended to use outpatient and inpatient services more frequently (Cheng *et al.*, 2025). They also found that BPJS membership status (contributory or subsidised) did not significantly influence the use of primary care services, but age was the dominant factor. Thus, the changing demographic distribution of BPJS outpatients at the ENT Polyclinic in Surabaya, becoming the age group of older people by 2024, is not merely a local phenomenon but aligns with national trends: increasing healthcare utilization by the adult to the elderly age group, and the high prevalence of mild chronic diseases managed through outpatient clinics.

The hospital costs in the ENT Polyclinic in 2024 showed a significant shift from 2023. Despite a decrease in percentage, consultation services remained the most crucial hospital cost. In contrast, nursing and medication services showed a substantial increase. Equipment rental also increased by a larger percentage in 2024. However, accommodation and radiology services experienced a relative decline (Table 2). This phenomenon aligns with the findings of Mustafidah and Indrawati (2021). The finding identified a significant correlation between age and the utilisation of BPJS health services (p=0.011), while sex did not significantly influence (p=0.638). Given that adults and older people increasingly dominate the patient population, Sari (2023) believes there will be an increase in nursing costs and therapeutic drugs reflecting adaptation to clinical needs in older age.

That opinion is further supported by a study on polypharmacy prescribing in elderly patients. The study confirmed that older adults tended to consume more complex and multi-item drug therapies, significantly increasing pharmaceutical costs (Anggraini, 2023). Increased nursing and medications service reflects a patient profile with mild chronic conditions and repeated treatments. That might also be a reason why diagnostic services like radiology have declined. The more varied hospital cost distribution reflects the healthcare financing system's response to patient demographic profile and changes in care needs.

This paper showed that hospital cases decreased from 2023 to 2024, yet the cost difference between hospital costs and claim revenue increased (Table 3). It reflects improvements in claim management

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efficiency, although certain services still incur losses. For example, in consultation services during 2024, a negative cost difference indicated that the hospital costs were higher than the claims received. This situation aligns with the findings of the National Health System Research Institute (Kristian *et al.*, 2021), which demonstrated that the commitment-based capitation model in the JKN scheme was ineffective in reducing hospital costs due to the high number of chronic patients. In addition, a study by Imansyah et al. (2022) also revealed a negative correlation between revenue from BPJS patients and hospital financial performance indicators, indicating that the dominance of JKN claims could suppress the profitability of healthcare services (Rantung, Palandeng and Mengko, 2018).

Furthermore, chronic diseases continue to dominate the number of visits, indicating a high financial burden, despite the positive difference in hospital costs and claims (Suryani, Ciptono and Satibi, 2017). It underscores the importance of strengthening promotive and preventive services. Minimum funding for basic health services is often inadequate, leaving hospitals to bear the curative burden (Roesbianto *et al.*, 2022). A report by Fuady et al. (2024) also indicated that funding for promotive and preventive activities in Indonesia remains significantly lower than curative services, even though the activities potentially can reduce the burden of chronic care. On the other hand, acute care services in this investigation showed a positive trend in cost differences between hospital costs and claims (Table 3), indicating opportunities to strengthen these services. Angell et al. (2021) support this finding with the opinion that without preventive interventions, even mild cases can contribute significantly to the cost burden in the JKN program (Marhenta, Satibi and Wiedyaningsih, 2018).

Thus, despite the overall decline in outpatients handled by the ENT Polylinic, hospitals could still increase the cost difference between hospital costs and claims (Table 3). However, improvement strategies are crucial to avoid future losses, particularly for services with negative cost differences (Astuti, 2017). Optimising the role of primary care services, such as public health centres, and implementing an integrated electronic recording system are crucial steps to reduce hospital workload and improve cost efficiency. A study showed that implementing an Electronic Medical Record (EMR) system reduced operational costs and improved service quality (Djafar and Lellu, 2021).

CONCLUSION

In conclusion, hospitals should adapt to changes in patient demographic profiles, which are increasingly dominated by older people with chronic disease risks, potentially increasing the cost burden. This situation is relevant to national challenges in maintaining the sustainability of the JKN scheme and improving service quality based on accreditation. The results of this study could be a basis for developing more adaptive service management strategies, emphasizing the strengthening of primary care, chronic

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disease control, and the implementation of an integrated health information system to ensure hospital efficiency and service quality.

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