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Analysis Of The Effect Of Care Class On BPJS Claim Values For Patients With The Same Diagnosis At Dustira Class II Hospital

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ABSTRACT

The National Health Insurance (JKN) program managed by BPJS Kesehatan implements the Indonesia Case-Based Groups (INA-CBGs) prospective payment system. Although INA-CBGs rates are determined based on diagnosis, the treatment class factor has the potential to influence the amount of claims paid. This study aims to analyze the effect of treatment class on the value of INA-CBGs claims in patients with chronic obstructive pulmonary disease (COPD, code J44.1) at Dustira Class II Hospital. This study used an observational analytical design with a cross-sectional approach. The sample consisted of all COPD patients treated at the Kenanga Ward in January 2025 (n=37), with a distribution of Class 1 (n=2), Class 2 (n=13), and Class 3 (n=22). Data analysis was performed using the Kruskal–Wallis test, followed by the Dunn–Bonferroni post-hoc test. The results showed that the highest median claim value was found in Class 1 (Rp 5,264,600), followed by Class 2 (Rp 4,611,500), and Class 3 (Rp 3,958,400). The Kruskal–Wallis test showed a significant difference (H=33.720; p<0.001). Post-hoc analysis showed a significant difference between Class 1 and Class 3 and between Class 2 and Class 3, while the difference between Class 1 and Class 2 was not significant. It was concluded that the treatment class significantly influenced the BPJS claim value in COPD patients. These findings have implications for the evaluation of INA-CBGs tariffs and the preparation for the implementation of the Standard Inpatient Class Policy (KRIS) in 2025.

Keywords*:* JKN, INA-CBGs, care class, COPD, KRIS

INTRODUCTION

The National Health Insurance (JKN) program represents a major transformation in the healthcare financing paradigm in Indonesia, launched on January 1, 2014. Managed by the Social Security Agency (BPJS Kesehatan), JKN aims to ensure that all Indonesian citizens receive equitable, comprehensive, and affordable healthcare. By 2024, the program will cover more than 200 million people, making

it one of the most extensive health insurance systems globally (Ministry of Home Affairs, 2024).

The JKN financing system uses the Indonesia Case-Based Groups (INA-CBG), a prospective payment method based on a patient's diagnosis, medical procedure, severity, and treatment category. Claim levels associated with INA-CBG are outlined in Regulation of the Minister of Health of the Republic of Indonesia Number 7 of 2024, which revises the technical provisions for setting rates based on the medical and administrative complexity of cases. Simultaneously, Regulation of the Minister of Health Number 3 of 2023 concerning Standard Tariffs for Health Services, set for full implementation in early 2024, serves as the legal basis for setting service rates at healthcare facilities.

In accordance with established policies, the government is in the process of implementing the Standard Inpatient Class (KRIS) as an integral component of reform efforts related to the classification of the care system, which is expected to be fully operational in 2025. The main objective of KRIS is to equalize service standards across all inpatient classes. However, during the transition phase in 2024, differences in the quality of facilities and comfort levels between the various classes remain apparent. These differences have the potential to affect the length of stay (LOS), consumption of medical resources, and the amount of INA-CBG claims disbursed by BPJS Kesehatan. Previous research has shown that LOS is one of the main factors determining health care costs and claim amounts, because longer LOS generally requires greater use of drugs, medical procedures, and accommodation (Pradana et al., 2020, Suwadono et al., 2019). A similar phenomenon is also observed in other countries that use package-based financing systems, such as South Korea and Thailand, where variations in treatment classes significantly affect LOS and utilization of additional services (Kwon, 2019., Patcharanarumol et al., 2018).

Chronic Obstructive Pulmonary Disease (COPD), classified by ICD-10 code J44.1, was chosen as the primary focus of this study due to its classification as a chronic disease requiring rigorous therapeutic interventions, specific medication administration, and relatively long hospital stays. Patients diagnosed with COPD frequently experience acute exacerbations requiring the use of bronchodilators, corticosteroids, and oxygen therapy, in addition to managing comorbid conditions, increasing the complexity of care (Hidayat et al., 2021). As demonstrated by

(Ramadhani et al., 2022), the complexity of these cases often impacts the overall cost of care and claim value.

Although the INA-CBGS system establishes standard levels for identical diagnoses, treatment classification continues to influence actual service costs, as it significantly impacts resource utilization intensity and length of stay. Several studies, including those by (Astuti & Widyaningsih 2020), have shown that for chronic diseases, higher treatment classes tend to have longer LOS due to access to additional facilities and different service intensities. However, it is important to note that most of these studies were conducted before the implementation of the new tariff policy in 2024, so the relevance of the findings in the current regulatory context remains to be tested.

Based on this background, this study aims to analyze the effect of treatment class on INA-CBGs claim values in COPD patients (J44.1) at Dustira Hospital. The results are expected to provide input for hospital management and BPJS Kesehatan in evaluating rates and as a basis for developing more efficient and equitable healthcare financing policies.

METHOD

According to Sugiyono (2022), a quantitative approach is applied to research a specific population or sample using standardized research instruments. Data analysis is conducted statistically, and aims to test hypotheses. Similarly, Creswell and Creswell (2018) explain that quantitative research aims to objectively test theories by examining the relationships between various variables through statistically analyzed data. Neuman (2021) adds that the quantitative approach places greater emphasis on the numerical measurement of social phenomena and objective hypothesis testing.

A quantitative comparative analysis was conducted to compare INA-CBGs claim values based on patient care class. This study used an observational analytical design with a cross-sectional approach. This design was chosen to examine the relationship between care class and INA-CBGs claim values in patients with a primary diagnosis of COPD (ICD-10 J44.1) during a single time period, namely January 2025.

The study was conducted in the Kenanga Inpatient Ward of Dustira Hospital Class

II. Data collection was carried out in January 2025, with the inpatient recording period in the same month. The sampling technique used was total sampling (all patients who met the criteria were taken as samples). Data were obtained from medical records and BPJS Kesehatan claim documents managed by the hospital's Case Mix unit. The data collected included the code and name of the main diagnosis (ICD-10 J44.1), patient care class, INA-CBGs claim value, length of stay (LOS), and secondary diagnoses, if any.

Population All patients diagnosed with Chronic Obstructive Pulmonary Disease (COPD) with ICD-10 code J44.1 who were treated in the Kenanga Ward of Dustira Hospital Class II in January 2025 with a sample of 37 patients who met the inclusion criteria. Inclusion criteria include patients with a primary diagnosis of COPD (J44.1) based on medical records, using BPJS Kesehatan financing, having complete data related to treatment class and INA-CBGs claim value, and exclusion criteria include patients who were forcibly discharged or referred to another hospital before treatment was completed, INA-CBGs claim data was unavailable or incomplete

Research Variables:

- Independent variable: Treatment class (Class 1, Class 2, Class 3).
- Dependent variable: INA-CBGs claim value (in rupiah).
- Supporting variables (not analyzed statistically): Length of Stay (LOS) or length of treatment, recorded for descriptive purposes and interpretation of results.

Univariate analysis was used to describe the distribution of claim values for each treatment class. Normality testing was not performed on small groups (<3 data points). Comparison of claim values between the three classes was performed using the non-parametric Kruskal–Wallis test. If $p < 0.05$, a Dunn post-hoc test with Bonferroni correction was performed.

RESULTS

Descriptive Statistics of BPJS Claim Values

Descriptive statistical analysis shows a pattern of decreasing BPJS claims based on treatment class. Table 1 shows that the highest median claim value was in Class 1

at Rp 5,264,600, followed by Class 2 at Rp 4,611,500, and Class 3 at Rp 3,958,400. This pattern indicates that the lower the treatment class, the lower the claim value submitted by hospitals to BPJS Kesehatan.

Table 1. Descriptive Statistics of BPJS Claim Values Based on Treatment Class

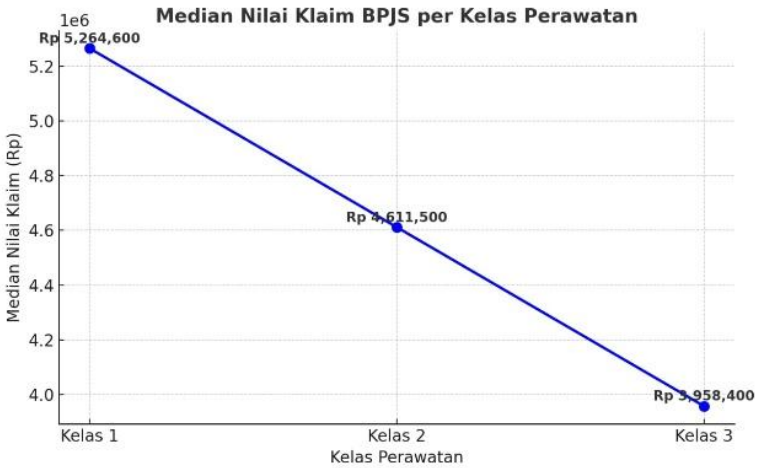
Care Class	N	Median (Rp)	IQR (Rp)	Mean Rank
Class 1	2	5,264,600	0	36.50
Grade 2	13	4,611,500	0	29.00
Grade 3	22	3,958,400	0	11.50

Data source processed by the author in 2025.

Description: IQR = Interquartile Range.

An IQR of 0 across all groups indicates relatively homogeneous claim values within a single class. This indicates that patients in the same class of care tend to receive similar services and incur relatively small cost variations. The consistency of claim values within a class reinforces the idea that differences between classes (rather than between patients) are the primary factor influencing claim sizes.

Figure 1. Median Claim Value Line Graph



Graphic source processed by the author 2025

The line graph in Figure 1 visually demonstrates the gradual decline from the median of Class 1 to Class 3. This decline reflects the characteristics of each class of care, with the class with more comprehensive facilities (Class 1) tending to

involve better accommodations, higher monitoring intensity, and the need for more medical procedures and use of medical equipment. Conversely, Class 3 generally has simpler facilities, resulting in lower service costs.

Thus, the descriptive results confirm that even though all patients have the same primary diagnosis (J44.1 – COPD), the treatment class still makes a significant contribution to the variation in the value of claims paid by BPJS Kesehatan.

Kruskal–Wallis Test Results

Table 2. Kruskal-Wallis Test Results

Test Statistics	df	p-value
H = 33.72	2	< 0.001

The Kruskal–Wallis test was conducted to assess whether there was a difference in claim values between treatment classes. The test statistic value was H = 33.72 with $p < 0.001$, indicating that the difference in claim values between treatment classes was statistically significant.

The Kruskal–Wallis test showed a significant difference in BPJS claim values between treatment classes ($p < 0.05$).This means that the class of care does influence the size of BPJS claims, and this difference is not due to chance. In other words, there is a statistically consistent pattern: higher classes of care result in larger claims.

Table 3. Mean Rank of BPJS Claim Values Based on Treatment Class

Care Class	Mean Rank
Class 1	36.50
Grade 2	29.00
Grade 3	11.50

This mean rank pattern is identical to the median pattern, thus reinforcing the conclusion that the highest claim values are found in the highest care class. The large difference in rank between Class 1 and Class 3 indicates a significant gap in claim values.

The interpretation:

The higher the class, the higher the service costs, resulting in higher claims submitted to BPJS. Conversely, classes with minimal facilities result in lower claims.

Table 4. Results of the Dunn Bonferroni Post-Hoc Test

Comparison	Z	p-value	p Bonferroni	Information
Class 1 vs 2	1.37	0.170	1,000	Not significant
Class 1 vs 3	4.78	<0.001	<0.001	Significant
Class 2 vs 3	4.12	<0.001	<0.001	Significant

This finding indicates that the largest differences in claim values occur at the extreme classes (highest vs. lowest). Classes 1 and 2 are not significantly different because their facilities are relatively similar compared to Class 3. Class 3 consistently has significantly lower claim values, making the difference statistically significant.

Overall, these results strengthen the conclusion that the class of care has a significant influence on the size of BPJS claims in COPD cases (J44.1) at Dustira Class II Hospital.

DISCUSSION

The discussion in this study examines the differences in BPJS claim values based on treatment class in patients with a primary diagnosis of Chronic Obstructive Pulmonary Disease (ICD-10 J44.1) at Dustira Class II Hospital. The descriptive statistics results show that there is a gradual decrease in BPJS claim values from Class 1 to Class 3. Class 1 is the group with the highest median claim value of Rp 5,264,600, followed by Class 2 at Rp 4,611,500, and Class 3 as the lowest at Rp 3,958,400.

To clarify the relationship between diagnosis, length of stay, and claim value, the data are summarized in the following table:

Care Class	ICD-10 Code	Average Length of Stay (days)	Median Claim Value (Rp)
Class 1	J44.1	7	5,264,600
Grade 2	J44.1	5	4,611,500
Grade 3	J44.1	4	3,958,400

The table above shows that although all patients had the same primary diagnosis (J44.1), there were differences in the length of service and treatment class, which in turn impacted the amount of costs claimed by the hospital. Class 1 patients had a longer average length of stay and more comprehensive facilities, resulting in higher accommodation and medical service costs, contributing to higher claim values. Conversely, Class 3 patients had shorter lengths of stay and standard facilities, resulting in lower claims.

The Kruskal–Wallis test yielded a p-value <0.001, indicating a significant difference between the three treatment classes. Dunn–Bonferroni post-hoc analysis confirmed that significant differences were found between Classes 1 and 3, as well as between Classes 2 and 3, while Classes 1 and 2 showed no significant differences. This suggests that the difference in claim values is primarily due to the large distance between the extreme classes (highest vs. lowest), rather than between classes with relatively similar facilities (Classes 1 and 2).

The decrease in claim values from high to low classes is also in line with the theory of the INA-CBGs payment system, where service costs are influenced by clinical complexity, use of ancillary services, and length of stay. Although INA-CBG rates are determined based on diagnosis, clinical variables such as length of stay (LOS), severity of COPD exacerbations, and additional measures can influence the CBG group selected by the system, thus impacting claim values. Previous studies (Hidayat et al., 2021) and (Pradana et al., 2020) confirmed that longer lengths of stay are associated with greater use of medical resources, which in turn increases claim values.

This finding aligns with research by Astuti & Widyaningsih, 2020, which states that treatment class influences variations in service costs for chronic diseases, even when the primary diagnosis is the same. Another study by Ramadhani et al., 2022, showed that non-medical facilities, such as the number of beds in a room and room comfort, also influence the accommodation cost component that is part of the BPJS claim rate. Internationally, research in Thailand (Patcharanarumol et al., 2018) found that case-mix-based systems like INA-CBGs still allow for cost variations between classes due to differences in service facilities.

These findings are relevant ahead of the implementation of the KRIS (Standard Inpatient Class) Policy in 2025, which will standardize basic care facilities. This research indicates that differences in claim values are influenced not only by facility class, but also by clinical factors such as length of stay and complications. Therefore, future KRIS implementation requires adjustments to INA-CBGs rates that take into account the severity and duration of stay to avoid harming healthcare facilities.

Overall, the results of this study demonstrate that treatment class plays a significant role in shaping claim values, and this role remains significant even when the patient's primary diagnosis is the same. The differences observed in this study underscore the need for regular evaluation of the tariff structure and service standards within the JKN–BPJS Kesehatan system.

CONCLUSION

The study explains that there are significant differences in BPJS claim values among patients diagnosed with Chronic Obstructive Pulmonary Disease (COPD) (ICD-10 J44.1) at Dustira Class II Hospital, depending on the treatment classification. The highest median claim value was recorded in Class 1, followed by Class 2, while Class 3 showed the lowest median value. Subsequent post-hoc analysis showed statistically significant differences between Class 1 and Class 3, as well as between Class 2 and Class 3; however, no significant differences were observed between Class 1 and Class 2. The observed variations in claim values may be attributed to differences in facility capabilities across treatment classifications, in addition to clinical variables such as length of stay (LOS), disease severity, and

associated complications, which may influence INA-CBG level categorization. This study carries profound implications for the implementation of the Standard Inpatient Class (KRIS) 2025, where standardization of essential facilities is expected to reduce differences in claims resulting from class differences, although the effects of LOS and case complexity require further exploration. Based on these findings, it is recommended that hospital management conduct periodic evaluations of tariffs and optimal resource utilization without sacrificing service quality, while BPJS Kesehatan and policymakers consider tariff adjustments and KRIS implementation strategies.

REFERENCE

Ministry of Health of the Republic of Indonesia. Regulation of the Minister of Health Number 7 of 2024 concerning Standard Tariffs for Health Services in the Implementation of the Health Insurance Program. Jakarta: Ministry of Health of the Republic of Indonesia; 2024.

Ministry of Health of the Republic of Indonesia. Regulation of the Minister of Health Number 3 of 2023 concerning Standard Tariffs for Health Services in the Implementation of the Health Insurance Program. Jakarta: Ministry of Health of the Republic of Indonesia; 2023.

Kwon S. Thirty years of national health insurance in South Korea: lessons for achieving universal health care coverage. Health Policy Plan. 2009;24(1):63–71.

Patcharanarumol W, Tangcharoensathien V, Limwattananon S, Panichkriangkrai W, Pachanee K, Poungkantha W, et al. Why and how Thailand achieved good health at low cost: lessons for the world. In: Balabanova D, McKee M, Mills A, editors. Good health at low cost 25 years on. London: London School of Hygiene & Tropical Medicine; 2011. P. 193–223.

Ramadhani N, Santoso B, Prasetyo B. The relationship between length of hospitalization and the amount of INA-CBGs claims in COPD patients at Dr. Sardjito General Hospital, Yogyakarta. J Health Service Management. 2022;25(3):145–152.

Putri DP, Wulandari RD. The effect of severity on the amount of INA-CBGs rates in hospitalized patients. J Kesehat Masy Indones. 2021;16(1):25–32.

Hidayat R, Sari NM, Wicaksono A. Analysis of factors influencing the amount of INA-CBGs claims in COPD patients in type B hospitals. Indonesian Journal of Health Administration. 2021;9(2):112–120.

Astuti WD, Widyaningsih P. Differences in BPJS Health claim values based on treatment class in chronic disease patients. J Health Service Management. 2020;23(2):87–95.

Creswell, J. W., & Creswell, J. D. (2018). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (5th ed.). Thousand Oaks, CA: SAGE Publications.

Neuman, W. L. (2021). Social Research Methods: Qualitative and Quantitative Approaches (9th ed.). Harlow: Pearson Education.

Sugiyono. (2022). Quantitative, Qualitative, and R&D Research Methods. Bandung: Alfabeta.