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## Suitability of Real Cost to Tariff of INA-CBGs of Hypertensive Patients at X General Hospital

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### ABSTRAK

Tariff INA-CBGs merupakan program jaminan kesehatan pemerintah melalui BPJS yang diharapkan dapat membiayai komponen biaya Rumah Sakit. Pelaksanaannya tarif INA-CBGs JKN hingga sekarang masih terdapat laporan keluhan rumah sakit yang bekerja sama dengan BPJS Kesehatan terkait dengan selisih biaya. Data Kementerian Kesehatan Republik Indonesia menyebutkan bahwa biaya Badan Penyelenggara Jaminan Sosial (BPJS) sejak 2015 sebanyak 30 persen diserap oleh pengobatan penyakit kronis seperti hipertensi, dengan biaya mencapai 6,9 triliun. Penelitian ini bertujuan untuk mengetahui perbandingan antara biaya riil dan tarif INA-CBGs. Sehingga diperoleh manfaat untuk Rumah sakit sebagai gambaran besaran pembiayaan agar tidak mengalami kerugian. Penelitian ini merupakan penelitian deskriptif evaluasi ekonomi sederhana menggunakan rancangan cross sectional dengan data secara retrospektif. Pengambilan data biaya medis langsung dilakukan secara retrospektif. Objek pada penelitian ini adalah berkas keuangan rumah sakit dan rekam medis. Sebanyak 108 pasien menjadi sampel penelitian ini. Data dianalisis menggunakan chi-square untuk membandingkan biaya riil rumah sakit dengan tarif INA-CBGs. Hasil penelitian menunjukkan tidak ada beda signifikan antara biaya riil dan tariff INA-CBGs. Total biaya riil rumah sakit pada 108 pasien bulan Januari – Desember 2021 adalah Rp.408.473.500. Terdapat selisih biaya antara biaya riil rumah sakit dengan tarif INA CBGs yakni selisih biaya sebesar negatif (Rp.196.764.400). Sehingga dari penelitian diketahui biaya riil rumah sakit lebih besar dari tarif INA CBGs, sehingga menimbulkan selisih biaya negatif yang dapat merugikan rumah sakit.

**Kata kunci :** Biaya Riil, Tarif INA CBGs, Hipertensi

### ABSTRACT

The INA-CBGs tariff is a government health insurance program through BPJS which is expected to finance the hospital cost component. In the implementation of the INA-CBGs JKN tariff, up to now there are still reports of complaints from hospitals collaborating with BPJS Health regarding the difference in costs. Data from the Ministry of Health of the Republic of Indonesia states that since 2015, 30 percent of the costs of the Social Security Administering Agency (BPJS) have been absorbed by the treatment of chronic diseases such as hypertension, with costs reaching 6.9 trillion. This research aims to determine the comparison between real costs and INA-CBG rates. So that benefits are obtained for the hospital as an illustration of the amount of financing so that they do not experience losses. This research is a simple descriptive economic evaluation study using a cross-sectional design with retrospective data. Data collection on direct medical costs was carried out retrospectively. The objects of this research are hospital financial files and medical records. A total of 108 patients were the sample for this study. Data were analyzed using a one sample t-test to compare real hospital costs with INA-CBGs rates. The research results show that there is no significant difference between real costs and INA-CBGs tariffs. The total real cost of the hospital for 108 patients in January – December 2021 was IDR 408,473,500. Meanwhile, the average real cost of patients was Rp.3,782,162. There was a difference in costs between the real cost of hospital and the INA CBGs tariff. The real cost of the hospital was Rp.408,473,500 and the INA CBGs tariff was Rp.211,709,100, the difference in costs was negative (Rp.196,764,400). The real cost of hospital was greater than the INA CBGs tariff, thus causing a negative cost difference that can make financial loss to the hospitals.

**Keywords :** Real Cost, INA CBGs Tariff, Hypertension

## INTRODUCTION

Based on the Ministry of Health shows that the prevalence of hypertension in in 2013 it was 25.8%, then increased to 34.1% in 2017. Ministry Data Health of the Republic of Indonesia stated that the costs of the Guarantee Administering Agency Social (BPJS) since 2015 as much as 30% absorbed by the treatment of chronic diseases such as hypertension, at a cost reached 6.9 trillion.

Hospital will get payment based on the INA-CBGs rate which is the average cost spent by a diagnostic group referring to the International Classification of Diseases (ICD), compiled by WHO based on patient diagnoses (Permenkes 69, 2013). INA-CBGs tariff classification applied in the implementation of JKN until now it is still often invited complaints about the difference in costs from hospitals collaborating with BPJS Health.

In Indonesia, health costs keep increasing due to degenerative diseases, financing aims to cure diseases and the payments uses the retrospective method (*Fee For Service*) where payments are determined after health services are provided (Tusshaleha, 2018).

Per the Regulation Number 52 of 2016 by the Health Minister, the INA CBGs rate represents the total amount claimed by the BPJS health insurance from advanced healthcare facilities for service packages. These packages are sorted according to disease diagnoses and procedures (Regulation of the Health Minister No 52, 2016). Meanwhile, hospital rates are rates used by hospitals based on fee per each services according to regional regulations (Kemenkes RI, 2019).

Based on the research conducted (Hayul, Oetari, & Andayani, 2020), stated that there are differences in real cost for determining INA CBGs tariff. Another study by (Wirastuti, Sulistyanningrum, Cahyono, Santoso, & Miftahudin, 2019) also indicated a discrepancy between the hospital rate and the INA CBGs tariff. Furthermore, research by (Nilansari, Yasin, & Puspendari, 2021) highlighted a significant difference between the actual cost incurred by hospitals and the

INA CBGs tariff for class I, with a significant p-value of less than 0.05 (0.039). Meanwhile, this study will examine the comparison of real costs with INA-CBGs rates for each treatment class and based on the patient's length of stay. so it is hoped that the hospital will get more detailed information.

Several research pieces have indicated a discrepancy between the hospital rate and the INA CBGs tariff, leading to a substantial disparity that results in financial loss for the hospitals. This study aims to compare the rates of INA-CBGs with real cost rates incurred by the hospital. This analysis is important so that hospitals can get an idea about financing system that has been implemented, so that the hospital as the provider does not experience losses.

Based on the description above, researchers are interested in conducting a study entitled "Evaluation of Hospital Rate and INA CBGs Tariff for Hypertensive Patients at X Kediri General Hospital" for the 2021 research period. This study aims to determine the real costs of inpatient hypertension patients and the difference in real costs to the INA CBGs rates for inpatient hypertension patients at RSUD X Kediri.

## RESEARCH METHOD

This type of research is included in the simple economic evaluation that describes what is the difference between real (hospital) costs and INA-CBG rates for class 1, class 2 and class 3 inpatients. The data was collected retrospectively from hospital medical record with details of hospital rates claimed by BPJS for hypertensive inpatients in January to December for the 2021 period. The sampling method is purposive sampling. This research has received ethical feasibility from hospital ethics committee.

### Population

Data of medical record that all inpatients with hypertension with or without comorbidities at General Hospital X Kediri for the period of 2021.

### Sample

A sample represents the group from the population that satisfies both the inclusion and exclusion criteria. The inclusion criteria were patients with or without comorbidities, male and female patients aged over 18 to above 60 years, patients with treatment classes (1, 2 and 3), patients who were with details of hospital rates and patients who participating in JKN. The exclusion criteria were deceased patients, VIP class patients, upgraded patients and general patients.

### Data Analysis

Data examination in this research utilized a descriptive analysis approach to ascertain the hospital rates for patients with hypertension and the disparity between these rates and the INA CBGs tariff for hypertensive inpatients. The data shown in the results of this study was data that had been reprocessed by

researchers. Before processing the data, a review of the accuracy of the data obtained with the research criteria was carried out. The data processing uses Microsoft Excel 2010 to be summed and calculated in percentage form, find the average cost, find the overall total details of hospital rate and INA CBGs tariff and find the difference in rate between hospital rate and INA CBGs tariff which were presented in table form.

A normality test was carried out on INA-CBGs tariff and real cost data using descriptive statistical methods with a confidence level of 95%. The normality test used the Kolmogorov-Smirnov test with a sample size of 108 patients, resulting in the data not being normally distributed (p value <0.05). This is shown in table 1 as follows

Table 1. Normality test of real costs and tariffs for INA-CBGs

No.	Cost	p-value
1	Real cost	0,007
2	INA-CBGs tariff	0,00

Comparative analysis between real costs and INA-CBG tariffs using the chi square test. The difference in costs for the three classes of care was subjected to a statistical analysis of the chi-square test and produced a p-value of 0.614, which shows that in general there is no

significant difference between the real costs incurred by the hospital compared to the INA-CBGs tariff. Comparative analysis between real costs and INA-CBGs tariffs resulted in no significant difference between real costs based on severity level and INA-CBGs tariffs.

Table 2. compares real costs and INA-CBG rates based on severity level

No.	Severity Level	Real Cost	Tariff of INA CBG'S	p-value
1	Severity 1(Mild)	Rp 294.222.500,00	Rp 149.365.700,00	0,441
2	Severity2 (Moderate)	Rp 83.720.000,00	Rp 44.073.000,00	0,381
3	Severity 3(Severe)	Rp 30.531.000,00	Rp 18.270.400,00	0,321
4	<b>Total Cost</b>	<b>Rp 408.473.500,00</b>	<b>Rp 211.709.100,00</b>	

## RESULT AND DISCUSSION

This research was conducted at the private X Kediri General Hospital type D which is included in regional section 1 covering Banten Province, DKI Jakarta, West Java, Central Java, Special Region of Yogyakarta and East Java. This study discusses the real cost of hospital with INA CBGs tariff and also the difference between the real cost of hospital to INA CBGs tariff. The real cost of hospital uses rates based on fee per services in

accordance with local regulations (Lilissuriani, Saputra, & Ruby, 2017).

According to the Health Minister's Regulation Number 52 of 2016 regarding Health Service Tariff Standards in the Health Insurance Program's execution, the INA CBGs claim rates are preset package costs that the government has tailored for treatment classes I, II, and III, with severity levels of I, II, and III (Indawati, Dewi, Pramono, & Maryati, 2018). The data was processed in the form of

percentage of respondents in this study includes severity, treatment class and length of Stay (LOS). Meanwhile, the processing data of

cost which was studied was the total real cost, total INA CBGs tariff, average cost and cost difference.

Table 3. Total Hospital Cost and INA CBGs Tariff

No.	Tariff	Total	Average each patient
1	Real hospital cost	Rp 408.473.500	Rp 3.798.788,25
2	INA CBG'S package	Rp 211.709.100	Rp 1.960.269,44
3	<b>Difference</b>	<b>Rp. -(196.764.400)</b>	<b>Rp 1.821.892,59</b>

Source : Hospital data Januari-Desember 2021

This greater difference of total costs occurs because inpatients required additional costs, such as additional service fees, room fees, medical support costs, medicine costs and medical equipments (Muslimah, Andayani, Pinzon, & Endarti, 2017). In addition to additional costs that cause large differences were the errors in providing primary diagnosis codes or secondary diagnoses by the coding officers which can also affect the results of INA

CBGs claim values. This study's findings align with those of (Rahayuningrum, Tamtomo, & Suryono, 2010), which also found that the actual cost incurred by hospitals was higher than the INA CBGs tariff. Moreover, a separate study on ischemic stroke cases (Cahyani, Yuswar, & Nurmainah, 2018) revealed a negative discrepancy between the actual cost and the INA CBGs rate for patients with ischemic stroke, coded as 163.9.

Table 4. Hospital Tariff and INA CBGs Tariff based on Class

No.	Amount	Class	Real Cost	INA CBG'S Tariff	P value
1	13	Class 1	Rp 65.785.500,00	Rp 32.900.700,00	0,369
2	16	Class 2	Rp 61.440.000,00	Rp 36.177.400,00	0,433
3	79	Class 3	Rp 281.248.000,00	Rp 142.631.000,00	0,440
4	<b>Total cost</b>		<b>Rp 408.473.500,00</b>	<b>Rp 211.709.100,00</b>	

Sources: Hospital Data Januari-Desember, 2021

Table 5. Difference of Hospital Tariff and INA CBGs Tariff

No.	Amount	Class	Difference Cost
1	13	Class 1	Rp -(32.884.800,00)
2	16	Class 2	Rp -(25.262.600,00)
3	79	Class 3	Rp -(138.617.000,00)

Sources: Hospital data Januari-Desember, 2021

Table 4 shows that the total hospital rate and INA CBGs tariff based on the treatment class and the highest cost treatment class were in treatment class 3. Table 4 also shows that there is no significant difference between the real hospital costs in each treatment class and the INA-CBGs claim rates which are shown based on the results of the chi

square test statistical analysis with a confidence level of 95%.

The most dominant treatment class used by hypertensive patients with or without comorbidities is treatment class 3. Based on the research results, it was found that 73% of hypertensive patients with or without comorbidities occupy treatment class 3. Thus,

there is a difference in costs between treatment classes due to the facilities received. each patient each class of treatment is different. The results of research (Muslimah et al., 2017) state that apart from treatment class, there is also the number of samples which influences the real cost of patient care in hospital. Meanwhile,

there is a negative difference in Table 5 shows that the real costs of inpatient hypertension patients in the hospital was bigger in comparison INA-CBGs tariff claims. The hospital needs it carry out evaluations for proper care given to inpatients is appropriate, and cost control is necessary for avoid losses.

Table 6. Average Hospital Rates and INA CBGs Tariff

No.	Number of Patients	Treatment class	Real Cost	INA CBGs Tariff
1	13	Class 1	Rp 5.060.423,08	Rp 2.530.823,08
2	16	Class 2	Rp 3.840.000,00	Rp 2.261.087,50
3	79	Class 3	Rp 3.560.101,27	Rp 1.805.455,70

Source: Hospital Data January-December, 2021

The overall average cost of hypertensive inpatients with or without

comorbidities at X General Hospital in Kediri was also greater than the INA CBGs claim rate.

Table 7. Total Hospital Tariff and INA CBGs Tariff by Severity

No.	Number of Patient	Severity Level	Real Cost	Tariff of INA CBG'S
1	81	Severity 1 (Mild)	Rp 294.222.500,00	Rp 149.365.700,00
2	20	Severity 2 (Moderate)	Rp 83.720.000,00	Rp 44.073.000,00
3	7	Severity 3 (Severe)	Rp 30.531.000,00	Rp 18.270.400,00
4		<b>Total Cost</b>	<b>Rp 408.473.500,00</b>	<b>Rp 211.709.100,00</b>

Source: Hospital Data January-December, 2021

Table 7 shows the severity levels consists of mild severity, moderate severity and severe severity. The highest cost occurred at severity 1 (mild) because, hypertensive patients with or without comorbidities mostly occurred in women as many as 51 patients out of a total of 81 patients at severity 1 (mild). Research (Muslimah et al., 2017), states that

mild severity, moderate severity and severe severity determine the size of the INA CBGs rates. The higher the level of satisfaction, the higher the cost of patient care in the hospital. The difference in rates is due to complications, types of comorbid drugs and physiotherapy procedures so that there are cost components that are not covered in INA CBGs claims.

Table 8. Difference between Hospital Tariff and INA CBGs Tariff

No.	Number of Patients	Severity Level	Difference of Costs
1	81	Severity 1(Mild)	Rp -(144.856.800,00)
2	20	Severity 2 (Moderate)	Rp -(39.647.000,00)
3	7	Severity 3 (Severe)	Rp -(12.260.600,00)

Source: Hospital Data January-December, 2021

The difference in cost in severity levels due to secondary diagnosis in patients which affected the real cost of hospitals. This

difference was negative because the total cost of services incurred by hospitals for hypertension inpatients with or without

comorbidities was more than the total INA CBGs tariff paid by Social Security Agency on Health (BPJS kesehatan). Another study said that the largest cost difference was found at severity level 1 of negative Rp.71,818,829 due to treatment episodes which consisted of 75 episodes (Dwidayati, Andayani, & Wiedyaningsih, 2016). Research (Mardiah,

2016) stated that there was a difference in mild severity, where the total real cost of hospitals was greater than the INA CBGs Tariff. This condition must get the attention of hospital management by conducting an evaluation and improved service methods efficiently while still paying attention to quality health services.

Table 9. Total Hospital Tariff and INA CBGs Tariff

No.	Number of Patients	Length of Stay (Days)	Real Cost	Tariff of INA CBG'S	Cost Difference
1	66	0 - 5	Rp 214.884.500,00	Rp 129.379.900,00	Rp - (85.504.600,00)
2	41	6 - 10	Rp 188.072.000,00	Rp 80.608.400,00	Rp -(107.463.600,00)
3	1	≥ 10	Rp 5.517.000,00	Rp 1.720.800,00	Rp -(3.796.200,00)
4	<b>Total Cost</b>		<b>Rp 408.473.500,00</b>	<b>Rp 211.709.100,00</b>	

Source: Hospital Data January-December, 2021

The highest cost difference was in the length of treatment of 6-10 days which was negative Rp.107,463,600, this was because the total real cost of 6-10 days of treatment as many as 41 patients exceeded the claim tariff of INA CBGs. This negative discrepancy occurs because the total service cost borne by hospitals for treating hypertension with or without comorbidities exceeds the total INA CBGs tariff that the Health Social Security Agency (BPJS Kesehatan) reimburses.

Table 8 shows the difference in the cost of length of Stay was due to the severity of each patient's illness. This made patients stay longer in the hospital. The longer the patient stay will increase the cost of treatment, such as the use of drugs, the use of services, the use of rooms and the use of medical items. The difference in costs on the length of Stay could occur when there were patients with complications, so that the costs incurred were greater.

Research (Rahayuningrum et al., 2010) stated that the length of Stay could lead to increasing hospital costs due to the increasing number of health services provided. Another study stated that the length of stay of patients at hospital affected the amount of drug costs, the longer the patient stays, the more the real hospital costs incurred (Muslimah et al., 2017).

The high costs incurred by hospitals were influenced by the length of stay of hospitalization (LOS). The longer the length of stay would affect the amount of costs incurred, while the short length of stay did not affect the INA CBGs tariff (Lilissuriani et al., 2017).

## CONCLUSION

1. The total real cost of the hospital for 108 patients in January – December 2021 was IDR 408,473,500.
2. There was a difference in costs between the real cost of hospital and the INA CBGs tariff. The real cost of the hospital was Rp.408,473,500 and the INA CBGs tariff was Rp.211,709,100, the difference in costs was negative (Rp.196,764,400).

## BIBLIOGRAPHY

- Cahyani, D. P., Yuswar, M. A., & Nurmainah. (2018). Analisis Kesesuaian Biaya Riil Terhadap Tarif INA CBGs Pada Pengobatan Stroke Iskemik Pasien JKN Rawat Inap RSUD Sultan Syarif Mohammad Alkadrie Pontianak Tahun 2018. *Electronic Publishing*, 15(6), 35–39.
- Dwidayati, A., Andayani, T. M., & Wiedyaningsih, C. (2016). Analisis Kesesuaian Biaya Riil Terhadap Tarif INA-CBGS Pada Pengobatan Stroke

- Non Hemoragik Pasien JKN Rawat Inap RSUD Dr . Soehadi Prijonegoro Sragen Tahun 2015 Comformity Analysis of Real Cost to INA-CBG ' S Cost in Non Hemorrhagic Stroke Treatment Of H. *Jurnal Farmasi Indonesia*, 13(2), 139–149.
- Hayul, H., Oetari, & Andayani, T. (2020). *Analisis Kesesuaian Biaya Riil Terhadap Penetapan Tarif INA-CBG'S Pasien Nefropati Diabetik Rawat Inap Di RSUD Ir.Soekarno Sukoharjo Tahun 2018*. 3(1).
- Indawati, L., Dewi, D. R., Pramono, A. E., & Maryati, Y. (2018). *Manajemen Informasi Kesehatan V, Sistem Klaim dan Asuransi Pelayanan Kesehatan* (1st ed., Vol. 5). Jakarta: Kementerian Kesehatan RI .
- Kemenkes RI. (2019). Hipertensi Si Pembunuh Senyap. *Kementrian Kesehatan RI*, 1–5. Retrieved from <https://pusdatin.kemkes.go.id/resources/download/pusdatin/infodatin/infodatin-hipertensi-si-pembunuh-senyap.pdf>
- Lilissuriani, Saputra, I., & Ruby, M. (2017). Perbedaan biaya riil rumah sakit dan tarif ina-cbg untuk kasus katastrofik dengan penyakit jantung koroner pada pasien rawat inap peserta jaminan kesehatan nasional di rsuza. *JUKEMA*, 3(1), 198–205.
- Mardiah. (2016). Cost Recovery Rate Tarif Rumah Sakit dan Tarif INA-CBG's Berdasarkan Clinical Pathway pada Penyakit Arteri Koroner di RSUP Dr. Mohammad Hoesin Palembang Tahun 2015. *Jurnal Administrasi Rumah Sakit Indonesia*, 2(3), 245–259.
- Muslimah, Andayani, T., Pinzon, R., & Endarti, D. (2017). *Perbandingan Biaya Riil Terhadap Tarif INA CBG's Penyakit Stroke Iskemik Di RS Bethesda Yogyakarta*. 7(1), 105–114.
- Nilansari, A., Yasin, N., & Puspendari, D. (2021). *Analisis Tarif INA-CBGs Pasien Hipertensi Rawat Inap di Rumah Sakit Umum Daerah Panembahan Senopati Analysis of INA-CBGs Rates of Hypertensive Inpatients in Panembahan Senopati Hospital*. 10(1).
- Permenkes No 52. (2016).
- Rahayuningrum, I. O., Tamtomo, D. G., & Suryono, A. (2010). *Analisis Tarif Rumah Sakit Dibandingkan Dengan Tarif Indonesian Case Based Groups Pada Pasien Rawat Inap Peserta Jaminan Kesehatan Di Rumah Sakit*. 214–223.
- Tusshaleha, L. (2018). Analisis Kesesuaian Biaya Riil Pasien Kemoterapi Kanker Rektum Dengan Penetapan Biaya Ina-CBGs Terhadap Pelaksanaan Jaminan Kesehatan Nasional Di RSUP Sanglah Denpasar Tahun 2014. *Jurnal Ilmiah Mandala Education*, 4(1), 156.
- Wirastuti, K., Sulistyaningrum, I., Cahyono, E., Santoso, A., & Miftahudin, Z. (2019). Perbandingan Biaya Riil Dengan Tarif Ina-Cbg'S Penyakit Stroke Pada Era Jaminan Kesehatan Nasional Di Rs Islam Sultan Agung. *Jurnal Ilmiah Ibnu Sina (JIIS): Ilmu Farmasi Dan Kesehatan*, 4(1), 117–126.