JURNAL THESIS

ANALISIS PERBEDAAN BIAYA RILL DENGAN TARIF INA CBG'S RUMAH SAKIT PADA PASIEN ASMA PESERTA JKN DI INSTALASI GAWAT DARURAT RUMAH SAKIT UMUM XYZ JEMBER

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Difference in Real Costs Compared with INA CBG Rates for Asthma Patients

(Studied of JKN Asthma Patients at the IGD General Hospital "XYZ")

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Abstract: *The cost of treating an asthma attack at the "XYZ" General Hospital, which previously had asthma patients receiving treatment at the emergency room. This study is different from other studies because in addition to describing the direct medical costs, it also recognizes the discrepancy between the real costs of INA-BGS'S rates for asthma in hospitals. The INA-CBG system, the casemix system is a grouping of diagnoses and procedures with reference to similar clinical features and similar treatment costs, grouping is done using a grouper. The research design used in this study is a non-experimental research design with a retrospective method. Retrospective studies are used by following patient medical record data. The sampling technique used in this study was purposive sampling. In this study with a minimum total sample size of 97 people. Based on the results of research related to the real cost analysis compared with the cost of INA CBG'S in asthma patients hospitalized at the Hospital is 1) The average total direct medical costs in grade 1 mild asthma patients is Rp 3,711,753 / patient, grade 2 mild asthma patients in the amount of Rp. 3,451,968 / patient, grade 3 mild asthma patients in the amount of Rp.4,961,418 / patient; 2) The average total direct medical costs for moderate grade 1 asthma patients is Rp 1,912,000 / patient, moderate grade 2 asthma patients are Rp 1,942,512 / patient and no data is found in grade 3 moderate asthma patients; 3) The average total direct medical costs in grade 1 severe asthma patients is Rp 2,100,000 / patient and no data is found in grade 2 and 3 severe asthma patients; 4) The results of data processing from the help of SPSS for Windows version 25 with the independent t-test obtained data that the P value of 0.002 is smaller than the alpha value of 0.05 (P value <Value α). It can be concluded that there are significant differences in the total direct medical costs between the Real cost group and the INA CBG's Cost.*

Keywords: *asthma patients, INA-CBG system, similar clinical features and similar treatment costs and average total direct medical costs.*

1. Research Background

The pharmaceutical industry in Indonesia is currently experiencing significant growth in ASEAN, from data from the 2015 Food and Drug Supervisory Agency (BPOM), the growth of the Indonesian pharmaceutical industry on average reaches 14.10% per year, higher than the national growth rate of only 5 -6% per year. The total sales figures for 2004 reached around Rp. 20 trillion (for Rp. 22.8 trillion in 2005 and Rp. 26 trillion in 2006). However, in terms of global sales turnover, the Indonesian pharmaceutical market is no more than 0.44% of the total world pharmaceutical market. This shows that the pharmaceutical industry in Indonesia is not optimal in terms of sales even though Indonesia is the largest pharmaceutical market in the ASEAN region, which should be utilized by the pharmaceutical industry, so the role of pharmacists in the industrial sector is very large, this can be seen from the use of drugs in Indonesia consumption figures drugs per capita which only reaches less than US $ 7.2 per capita / year.

The problems faced by the pharmaceutical industry are quite complex. One of them is the regulatory aspect that is now faced with the issuance of the Health Social Security Organizing Agency (BPJS) program which makes many pharmaceutical industries mutually arrange new strategies. BPJS came into force on January 1, 2014 as a public legal entity tasked with organizing social security assistance in the health sector. BPJS Health is one embodiment of the National Health Insurance (JKN). The JKN program developed in Indonesia is part of the National Social Security System (SJSN) which aims to protect all Indonesians in the insurance system so that they can meet basic health needs, by paying contributions or contributions paid by the government.

In the world, asthma attacks are among the top 5 causes of death. An estimated 250,000 people die each year from asthma, the prevalence of asthma in the world varies greatly and epidemiological studies show an increase in asthma events especially in developed countries.12 The Ministry of Health of the Republic of Indonesia, 2015 mentions asthma, including the top 10 causes of morbidity and death, with the number sufferers in 2002 were 12,500,000. Of the 25 million people in Indonesia, 10% suffer from asthma. The 2005 Household Health Survey (SKRT) recorded 225,000 people died of asthma attacks.13 In 1997, the American Lung Association Epidemiology and Statistics Unit said that in America, more than 34 million adults suffer from asthma, and the Centers for Disease Control Surveillance for asthma shows that the prevalence of asthma increased by 75% from 1980-1994, and WHO estimates that the number of people who have an asthma attack will grow to more than 100 million by 2025.

Republic of Indonesia Law 44/2009 concerning hospitals, hospitals are health care institutions that conduct individual health services in a comprehensive manner that provides inpatient, outpatient and emergency services, and hospitals play an important role in providing medical treatment and recovery services according with hospital service standards. Hospitals are at risk of suffering losses in the administration of JKN, so drug delivery in hospitals must be effective and efficient and the pharmacist's role is needed to be able to choose rational treatments that are prioritized for long-term illness and the use of large amounts of drugs, one of which is asthma.

Hospitals also have an impact on the existence of the BPJS program, as in previous studies according to Khairina (2017) suggesting that the most widely used treatment is a combination of corticosteroid injection, and methylanthanthine (45.45%) in Jamkesmas participant patients, as well as a combination of injection agonists, β2 oral agonist, and corticosteroid injection (28.57%) in general patients. The factors that affect the cost of treatment are LOS (Length of Stay). There is a difference in real costs with the INA-CBG rate package for 13 patients of -Rp. 1,046,540.00, with the factor that influences the real cost is LOS. Then the difference between the real costs and the INA-CBG rate package for 2 patients is -Rp. 272,832.00 and in 7 patients amounting to Rp. 2,616,044.00.17 In addition, Gautfha's research (2016) suggests that health care facilities face obstacles in the supply of fornas drugs due to difficulties in getting drugs with e-catalog from the pharmaceutical industry so that drugs are sometimes empty or pharmacies are forced to buy from other parties at normal prices . BPJS participants feel disadvantaged because they do not get the right amount of medicine.2 Therefore, the use of costs is an important factor in the selection of treatment policy. Cost analysis by comparing the real costs at the "XYZ" General Hospital and the costs of the BPJS have been carried out on several diseases borne by the BPJS.

Previous research related to real costs and BPJS rates is Muslimah (2017) comparing the real costs of INA-BGS'S ischemic stroke rates at Bethesda Hospital Yogyakarta in inpatients is a negative difference and the costs to the hospital are Rp 455,487,724, whereas in outpatient care it was found that the difference in costs to be borne by the hospital was Rp 9,618,900. Overall the budget for stroke from the BPJS has not been sufficient to fund the care of ischemic stroke patients. In addition, another study by Mawaddah (2015) with cases of type II diabetes mellitus hospitalization at the Hospital of Kalisat Jember Hospital in the period January - June 2015, that of the 59 patients studied overall per patient with severity I, II and III were 27 samples (46%) real costs are greater than the INA-BGS'S rate of 9 patients, 4 patients and 14 patients, 0 samples (0%) are the same as INA-BGS'S rates, and 32 samples (54%) real costs are more small of INA-BGS'S rates as many as 11 patients, as many as 8 patients and as many as 13 patients, from 27 samples studied (46%) where the INA-BGS'S tariff-based financing is smaller than hospital rates with the average distribution of funding based on length of stay hospitalization 14.75%, supporting 18.18%, medical treatment 37.94%, pharmaceuticals or drugs 22.66%, and other additional costs 6.46%. While 32 samples studied (54%) where INA-BGS'S rates are greater than the real hospital rates with the average distribution of financing at real hospital rates based on the length of stay of 11.18%, supporting 17.86%, actions medical 41.49%, pharmacy or medicine 22.70%, and other surcharges 6.77% .19 However similar studies on asthma are not yet available. Though this analysis can be entered for hospitals in the selection of therapies for hospitals and a marketing strategy for the pharmaceutical industry.

Therefore this study wants to examine the cost of treating asthma attacks at the "XYZ" General Hospital, where previously asthma patients received treatment in the emergency room. This study is different from other studies because in addition to describing the direct medical costs, it also recognizes the discrepancy between the real costs of INA-BGS'S rates for asthma in hospitals. Direct costs which are referred to in this study are costs directly related to health care, including the cost of medicines (and medical supplies), doctor's consulting fees, costs for nurse services, use of hospital facilities (inpatient rooms, equipment), laboratory tests, informal service costs and other health costs.

The formulation of the research problem is: "Is there a difference in real costs compared to INA CBG rates for asthma patients participating in JKN at the IGD General Hospital" XYZ "?"

2. Literature review

Definition of Farmakoekonomi

Economics is human activity related to the production, distribution, exchange and consumption of goods and services. Economics is also said to be a science that explains how to produce, distribute, share and use goods and services in society so that the material needs of society can be met as well as possible.21 Health economics is an economic discipline that is only related to the topic of health. Pharmacoeconomics (pharmacoeconomics) was originally established as a sub-discipline of health economics. Initially pharmacoeconomic studies were only associated with the therapeutic costs of a disease, whereas currently pharmacoeconomics can be defined as studies that measure and compare the costs and results / consequences of a treatment. 21 The purpose of pharmacoeconomics is to provide information that can help policy makers make choices about alternative treatments available to make health services more efficient and economical. Farmakoekonomi can be applied either on a small scale, for example in determining the choice of therapy for a patient for an illness, or on a large scale, for example in determining which drugs will be subsidized or which will be included in the formulary.

Cost-Minimization Analysis (CMA)

Cost Minimization Analysis is a method to measure the range of the lowest cost of therapy or program, which applies if the benefits are the same. This analysis is relatively easy and simple, only comparing two or more alternatives with equality of alternative therapies compared to the same so alternatives must be assumed or indicated equality in safety and effectiveness (ie, two alternatives must be therapeutic equivalent).

Cost-Effectiveness Analysis (CEA)
Cost effectiveness analysis (CEA) is a method that analyzes health benefits and resources used by competing health care programs so that policy makers can choose between those health programs. CEA compares alternative programs or treatments with different safety and efficacy profiles. Costs are measured in units of money, and results are measured in terms of obtaining specific therapeutic results.

Cost-Benefit Analysis (CBA)
CBA is a method that allows for the identification, measurement and comparison of benefits and costs of alternative programs or treatments. CBA can be used when comparing alternative treatments where costs and benefits do not occur simultaneously. CBA can be used when comparing different program objectives because all benefits are converted into units of currency.

Cost-Utility Analysis (CUA)
CUA can compare costs, quality and quantity of patients per year. Costs are measured in currency, and therapeutic outcomes are measured in utility-weighted patients not in physical units. Frequently the measurement of utility used is the suitability of quality of life obtained in years (QALY). QALY is a general measure of health status used in CUA, combining morbidity and mortality data.

Farmakoekonomi Outcome
Pharmacoeconomic studies always consider two sides, namely the cost (cost) and treatment outcomes (outcome). In fact, in studies that examine the economic side of a drug / treatment, the cost factor is always associated with effectiveness (effectiveness), utility (utility) or benefits (benefits) from the treatment (service) provided. Effectiveness refers to the ability of a drug to provide improved health (outcomes) to patients in routine clinical practice (daily use in the real world, not under optimal conditions of research). By linking to economic aspects, namely costs, pharmaconomic studies can provide a cost-effectiveness measure that shows the monetary unit (the amount of rupiah to be spent) for each unit of health indicator both clinical and non-clinical (for example, in mg / dL reduction in LDL levels and / or total cholesterol in the blood) that occurs due to the use of a drug. The smaller the monetary unit that must be paid to obtain the desired health indicator units (clinical or non-clinical), the higher the cost-effectiveness value of a drug

Definition of National Health Insurance
National Health Insurance is a government program contained in the National Social Security System (SJSN) program and is an implementation of Universal Health Coverage. The JKN program aims to provide health benefits and financial protection for participants. Things covered by JKN are promotive, preventive, curative, and rehabilitative benefits including service of medicines and consumable medical materials according to medical needs. Thus, the National Health Insurance (JKN) developed in Indonesia is part of the National Social Security System (SJSN). The National Social Security System is implemented through a mandatory Social Health Insurance mechanism based on Law No.40 of 2004 concerning the National Social Security System. The aim is that all Indonesian citizens are protected in the insurance system, so that they can meet the basic needs of adequate public health

Definition of Health Insurance Provider (BPJS)
According to Law Number 24 of 2011 Article 02 About the Social Security Organizing Agency (BPJS) is a public legal entity that is responsible to the President and functions to organize a health insurance program for all Indonesian citizens including foreigners who work for a minimum of 6 (six) months in Indonesia . The Social Security Organizing Agency (BPJS) operates a national social security system based on the principles of: humanity, benefits, social justice for all Indonesian people.
The Social Security Organizing Agency (BPJS) is further divided into 2 (two) programs, namely the Program organized by BPJS Health, with the program being Health Insurance that commences from January 1, 2014 and the program organized by BPJS Employment, with the program being Work Accident Guarantee, Work Day Guarantee Old age, retirement insurance, and death insurance are planned to start from 1 July 2015.

Payment Method with INA CBG

According to Minister of Health Regulation number 27 of 2014 concerning Technical Guidelines. The INA-CBG system, the casemix system is a grouping of diagnoses and procedures with reference to similar clinical features and similar treatment costs, grouping is done using a grouper. The casemix system was first developed in Indonesia in 2006 under the name INA-DRG (Indonesia-Diagnosis Related Group). Implementation of payments with INA-DRG began on September 1, 2008 at 15 vertical hospitals, and on January 1, 2009 expanded to all hospitals working together for the Jamkesmas program. On September 31, 2010 the nomenclature was changed from INA-DRG (Indonesia Diagnosis Related Group) to INA-CBG (Indonesia Case Based Group) in line with the grouper change from 3M Grouper to UNU (United Nation University) Grouper. Thus, from October 2010 to December 2013, payments to Advanced Health Service Providers (PPK) in community health insurance (Jamkesmas) use INA-CBG. Since the implementation of the casemix system in Indonesia, there have been 3 changes in tariff rates, namely the 2008 INA-DRG tariff, the 2013 INA-CBG tariff and the 2014 INA-CBG tariff. The INA-CBG tariff has 1,077 tariff groups consisting of 789 group codes / inpatient groups and 288 outpatient group codes, using a coding system with ICD-10 for diagnosis and ICD-9-CM for procedures / actions. The grouping of diagnosis codes and procedures is done using the UNU grouper (UNU Grouper). UNU-Grouper is a casemix Grouper developed by United Nations University (UNU).

Calculation of INA CBG rates is based on hospital costing data and coding data. Costing data obtained from selected hospitals (sample hospitals) representations of hospital classes, hospital types and hospital ownership (private and government hospitals), including all data costs incurred by hospitals, excluding drugs whose funding sources are from government programs (HIV, TB, etc.). The coding data was obtained from the PPK Jamkesmas hospital coding data. For the preparation of JKN tariffs, 137 public and private hospitals and 6 million coding data (cases) were used. Indonesian Tariffs - Case Based Groups, hereinafter referred to as INA-CBG Rates. INA-CBG's is a form of prospective payment is a method of payment made for health services whose amount is known before health services are provided through capitation and case based payment (Casemix). This system uses a classification of diagnoses and procedures with reference to clinical features, use of resources or treatment costs.

3. Research methods

The research design used in this study is a non-experimental research design with a retrospective method. Retrospective studies are used by following patient medical record data. This study compares 2 (two) medical costs, namely the real cost of the "XYZ" General Hospital with the INA CBGs rate for JKN asthma patients in the emergency department of the "XYZ" General Hospital.

Definition of Variable Operations

Asthma

Asthma is a disorder of chronic airway inflammation that causes bronchial hyperperactivity of various stimuli characterized by recurrent episodic symptoms of wheezing, coughing, shortness of breath, having a low fatality rate but the number of cases is quite a lot found in the community. Factors related to the level of asthma control include health insurance, routine asthma checks, emergency room visits and hospitalization, as well as cost constraints. In asthma attacks can be known based on decreased expiration by measuring lung function such as peak expiratory flow (PEF) or forced expiratory volume in 1 second (FEV1)

Costs are costs (or opportunity costs) defined as the value of opportunities lost as a result of the use of resources in an activity. Direct costs are those directly related to health care, including drug costs (and medical supplies), doctor consultation fees, nurse service costs, use of hospital facilities (inpatient rooms, equipment), laboratory tests, informal service costs and other health costs. Real Costs are costs incurred in accordance with valid proof of expenditure.

In this study, the costs referred to are direct medical costs, namely the costs of medicines, doctor services, care services, rental of inpatient rooms, laboratory costs, consumption costs, medical equipment costs, emergency costs. The perspective used in this study is the hospital perspective.

CBG'S INA Fee

Indonesian Tariffs - Case Based Groups, hereinafter referred to as INA-CBG Rates. INA-CBG's is a form of prospective payment is a method of payment made for health services whose amount is known before health services are provided through capitation and case based payment (Casemix). This system uses a classification of diagnoses and procedures with reference to clinical features, use of resources or treatment costs. 18

In this study, INA-CBG's rates in regional government class B hospitals 1 for asthma & mild bronchitis patients for class 3 were Rp 2,161,100 while for class 2 they were Rp 2,593,000 and for class 1 they were Rp 3,025,500, patients moderate asthma & bronchitis in class 3 amounting to Rp 2,883,200, in class 2 amounting to Rp 3,459,800 and for class 1 amounting to Rp 4,036,400 and in severe asthma & bronchitis patients in class 3 amounting to Rp 3,034,900 in class 2 patients Rp.3,641,900 and in class 1 Rp.4,248,900.

Population and Sample

The sampling technique used in this study was purposive sampling. Purposive sampling is used in this study because it has certain considerations in sampling that is conducting research on two alternative costs of real costs and costs that have been set by BPJS in the treatment of asthma attacks, where later the real costs incurred by research subjects are compared with the costs which has been determined by BPJS related to the treatment of asthma attacks, the sample data source is asthma patients who have JKN who are treated in the emergency room of the "XYZ" General Hospital

Data Analysis

In this study, with a minimum total sample size of 97 people, a normality test was carried out using Kolmogorov Smirnov. If the normality test results p> 0.05, it can be concluded that the data is normally distributed (homogeneous) and the next test used is the parametric test with different tests. independent t-test (Free t-test). Whereas the different test on non-parametric data (P value> 0.05) will use Mann-Withney U.

4. Research Result

Profile of Total Asthma Therapy Costs by Therapy Class

The severity and class of care are factors that affect real costs, the higher the severity, the costs that affect real costs also increase. The higher the class of treatment costs that affect real costs are also high. Hospitals are expected to optimize effective and efficient health services specifically for asthma attack patients. So that the goal of implementing INA-CBG rates to control health costs, encourage quality health services to remain standard, limit unnecessary health services, facilitate claims administration and encourage providers to control costs can be achieved42. In a previous study conducted by Satilbi, 2019 comparing cancer patients with non-chemotherapy treatment found that the real cost was lower than the cost set by INA CBG's, where the data taken was direct cost data obtained from data financing invoice provided by the finance department (Table 4.5)

Table 1. Comparison of Real costs and INA CBG's Costs based on Class of Therapy

No. Medical record	Class I		Class II		Class III	
	Rill	INA CBG'S	Rill	INA CBG'S	Rill	INA CBG'S
021494			**2.537.500**	6.286.100		
036211	**2.469.311**	5.393.600				
033055	**3.815.877**	5.429.600				
016748	**7.620.358**	9.022.700				
036377	**3.097.152**	3.116.300				
036382	**4.632.600**	5.429.600				
013986	**3.206.800**	6.515.500				
033878	**4.015.300**	2.671.100				

034219	**2.114.600**	5.728.600				
027177	**2.114.600**	3.116.300				
032230	**3.921.000**	6.776.900				
032247	**2.686.900**	3.116.300				
031989	**6.640.900**	5.402.100				
016037	**2.960.400**	2.225.900				
025127	**2.960.400**	5.931.100				
033140	**2.114.600**	4.872.500				
035791	**4.042.200**	6.961.900				
035824	**2.114.600**	4.872.500				
018024	**3.490.100**	6.874.400				
025151	**2.960.400**	6.363.800				
035053	**2.114.600**	4.494.600				
035056	**2.114.600**	4.872.500				
035146	**8.329.600**	3.116.300				
028236			**2.537.500**	4.157.500		
033523	**2.537.500**	2.671.100				
033621	**5.483.300**	3.116.300				
021494			**1.495.366**	3.563.600		
034290	**2.908.400**	13.625.600				
034364	**2.114.600**	4.545.500				
034513					**3.490.100**	10.045.300
034668	**2.537.500**	4.414.500				
028236					**2.100.900**	11.605.600
017881	**2.080.000**	5.187.400				
039013	**2.690.900**	5.429.600				
037425	**6.947.148**	8.743.400				
005433	**4.140.800**	2.671.100				
037813	**3.668.650**	10.848.900				
037906	**4.499.160**	8.962.800				
026628			**1.794.669**	10.961.800		
014828	**3.522.134**	8.177.200				
038441	**4.292.298**	7.749.200				
003814	**2.537.500**	6.292.500				
022057	**2.908.400**	4.997.500				
033035	**1.421.400**	2.225.900				
011131	**2.785.800**	7.601.400				
035949	**3.024.700**	2.225.900				
015879	**4.275.200**	7.097.700				
037011	**2.601.500**	5.429.600				
020829	**2.376.051**	5.454.700				
036255	**5.476.099**	5.661.300				
033946	**1.995.800**	4.872.500				
012885	**3.085.200**	6.363.800				
026435	**4.119.100**	7.007.000				
032329	**3.432.600**	5.839.100				
002061	**2.203.700**	4.545.500				
035949	**2.305.634**	7.079.900				
022145	**2.257.400**	7.262.500				
022387	**3.432.600**	5.839.100				
038837	**3.186.300**	8.174.800				
018024	**4.410.564**	5.454.700				

022917	**3.680.700**	8.621.800				
034059	**1.924.300**	8.478.400				
032781	**4.119.100**	9.121.800				
033113	**2.203.700**	5.454.700				
022387	**1.552.353**	5.323.900				
031599	**4.674.300**	6.140.800				
038564	**2.756.871**	7.368.900				
036739	**2.091.600**	6.981.200				
022387	**2.305.100**	5.187.400				
037730	**5.288.947**	11.377.600				
033113	**3.131.600**	4.545.500				
025791	**3.632.666**	15.585.400				
33567	**1.817.058**	6.897.400				
26546	**7.692.092**	12.912.300				
25675			**2.537.500**	4.157.500		
36989					**2.100.900**	11.605.600
13456			**1.495.366**	4.157.500		
39858					**2.100.900**	11.605.600
32546	**2.114.600**	4.545.500				
34677	**2.114.600**	4.545.500				
24362	**4.042.200**	6.961.900				
028236			**1.495.366**	4.157.500		
28245					**2.100.900**	11.605.600
28355	**4.292.298**	7.749.200				
22575	**2.537.500**	5.429.600				
27890	**2.908.400**	4.997.500				
021494			**1.495.366**	4.157.500		
021494					**2.100.900**	11.605.600
026628	**2.114.600**	4.545.500				
028236	**3.490.100**	6.874.400				
28232	**2.114.600**	4.545.500				
28456	**2.537.500**	5.393.600				
22566	**2.537.500**	5.429.600				
34896	**6.947.148**	8.743.400				
33567	**4.140.800**	2.671.100				
26546	**3.668.650**	10.848.900				
25675	**4.499.160**	8.962.800				
36989	**2.537.500**	5.429.600				
13456	**2.908.400**	4.997.500				
	283.128.579	**524.540.300**	**15.388.633**	**41.599.000**	**13.994.600**	**68.073.300**

In the difference between the real tariff and the INA-CBG package at the "XYZ" hospital, the real tariff is calculated in detail the type of service, in this case the standard tariff has been determined based on the Regent's Regulation No. 57 of 2013 concerning Tariff Services at the "XYZ" Hospital. Where the cost of health services is calculated on a real basis (real unit cost) at the "XYZ" Hospital by taking into account the socio-economic capacity of the community and other local hospital tariffs as well as the government and government policies of Jember.

The profile of the difference in the real cost is compared to the cost of INA CBG based on the difference in BPJS classes

In the difference between the real tariff and the INA-CBG package at the "XYZ" hospital, the real tariff is calculated in the type of service. The health service tariffs at the "XYZ" hospital include the

components of facilities, services, needs and medical services according to each service, the components and the amount of inpatient fees consisting of facilities, services, and medical services. Inpatient tariffs excluding drugs, use of medical devices, medical procedures, nursing actions, medical support measures, and specialist consulting services will be paid separately by the patient. Whereas the INA-CBG tariff calculation is calculated based on the accumulation or merging of the diagnostic code and procedure / action code into an INA-CBG code for which the government has determined the standard rates. Whereas in the table below, comparing the severity of asthma attack patients is compared based on BPJS class. It is known that the Rill costs of mild asthma severity for grades 1, 2 and 3 and also the severity of moderate and severe asthma grades 1,2 and 3 are very low compared to the costs of INA CBG's (Table 4.6)

Table 2. Differences in mean Severity of asthma based on real costs compared to INA CBGS's Costs

Class Room	Mild asthma			Medium Asthma			Severe asthma		
	Number of patients	Rill	INA CBG'S	Number of patients	Rill	INA CBG'S	Number of patients	Rill	INA CBG'S
Class 1	86	66.811.550	122.317.200	5	9.561.098	20.787.500	5	10.504.500	58.028.000
Class 2	8	82.847.236	158.643.100	3	5.827.535	20.811.500	-		
Class 3	5	136.959.893	243.580.000	-			-		

The real difference in the cost profile is compared with the INA CBG's fee based on the difference in class of the room. In the table below there is a normality test with a P * 0.863 value for grade 1 mild asthma patients which is compared between the average cost of the real cost and the average cost of INA CBG'S, then also obtained a P value test * 0.516 for grade 2 mild asthma which is compared between the average cost of the real cost and the average cost of INA CBG'S and also obtained the value of P * 0.173 for grade 3 mild asthma which is compared between the average cost of the real cost with the average cost of INA CBG'S. and a P value of 0.173 for patients with moderate and severe asthma in grade 1 and grade 2.

Table 3. Test Results Normality Value difference in real costs compared with the cost of INA CBG based on differences in class room

Class Room	Cost method	Mild asthma		Medium asthma		Severe asthma	
		Average Cost	P*	Average Cost	P*	Average Cost	P*
Class 1	Rill Cost	3.711.753	0.863	1.912.220	0.173	2.100.900	0.173
	INA CBG's	6.795.400		4.157.500		11.605.600	
Class 2	Rill Cost	3.450.310	0.516	1.942.512	0.173		
	INA CBG's	6.610.129		6.937.167			
Class 3	Rill Cost	3.185.114	0.173				
	INA CBG's	5.664.651					

Basically the P value of the different test using SPSS
1. Test the ratio of real numbers VS INA CBG's
2. The normality test uses Kolmoygorov Smirnoff because the sample is more than 50 patients.
3. The next test used is the parametric test with a different test is an independent t-test (Free t-test)

Figure 4. Test Results Calculation of Data Distribution for mild Class 1 Asthma Patients using the Kolmogorov-Smirnov Test between the Real Cost and the INA CBG'S Cost

Class 1 Mind asthma		Unstandardized Residual
N		18
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	2514666,82657531
Most Extreme Differences	Absolute	,142
	Positive	,131
	Negative	-,142
Kolmogorov-Smirnov Z		,601
Asymp. Sig. (2-tailed)		,863

Figure 5. Test Results Calculation of Data Distribution for Class 2 mild asthma patients using the Kolmogorov-Smirnov Test between the Real Cost and the Cost of INA CBG'S

Class 2 Medium asthma		Unstandardized Residual
N		24
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	2597553,96100341
Most Extreme Differences	Absolute	,167
	Positive	,139
	Negative	-,167
Kolmogorov-Smirnov Z		,818
Asymp. Sig. (2-tailed)		,516

Figure 6. Test Results Calculation of Data Distribution for Class 3 Mild Asthma Patients using the Kolmogorov-Smirnov Test between the Real Cost and the INA CBG'S Cost

Class 3 Severe asthma		Unstandardized Residual
N		13
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	2743757,17885118
Most Extreme Differences	Absolute	,321
	Positive	,321
	Negative	-,252
Kolmogorov-Smirnov Z		1,156
Asymp. Sig. (2-tailed)		,138

4. Discussion

Based on the results of research conducted by an analysis of the relationship between sex with asthma attacks that is as many as 23 male patients, where the results of male sex data is lower than women with a total of 47 people.). This is consistent with data from CDC, WHO, and NCHS asthma statistical sources, which say that the prevalence of bronchial asthma morbidity is higher in women than in male patients, with percentages reaching 60 percent.14-16 Wibowo's 2010 study results in RSUD dr. Soedarso Pontianak that the highest number of women is 36 people (72%) while 14 men (28%) have men.

Various sources of literature say that the cause of the high prevalence of bronchial asthma in women, is still uncertain because it deals with multifactorial. Women are said to be more susceptible to exposure which can trigger hypersensitivity reactions, and respond to reactions worse than in men.

Psychological stress and activity factors also play a role in worsening and recurrence rates of bronchial asthma, which are more vulnerable in women. Based on Anissa's research there are several things that cause an increase in the incidence of bronchial asthma in women compared to men, namely the differences in hormones between men and women, anxiety and depression that often attacks women and obesity. Anissa from Tanjungpura University Pontianak, found that the high prevalence of bronchial asthma in women caused by estrogen levels circulating in the body can increase eosinophil degranulation, thereby facilitating bronchial asthma attacks. High estrogen levels can play a role as a proinflammatory substance (helping / triggering inflammation) mainly affecting mast cells, where mast cells are cells that play a role in triggering hypersensitivity reactions by releasing histamine and other inflammatory mediators, thereby aggravating bronchial asthma morbidity in female patients. in addition to high estrogen levels, large fluctuations in estrogen levels during menstruation and in the use of contraception and postmenopausal hormone replacement therapy also influence the state of bronchial asthma in women. Fluctuations in estrogen levels trigger inflammatory reactions and increase levels of proinflammatory substances in the body, which can worsen bronchial asthma.

Based on the age criteria of patients who suffer from asthma attacks in adults, in this study it was found that patients with the highest range at age 46-55 years and the least range at age 26-35 years both from the severity of asthma attacks, patients suffering from bronchial asthma with age 20-55 years is the most patients, namely 51 people (72.9%). While the patient age group> 55 years is as many as 19 people (27.1%). The mean age of bronchial asthma patients from 70 study subjects was 49.21 years. The results of this study are consistent with Wibowo's research: 29 adults (58%) were the most adults, followed by 21 elderly patients (42%) .46 Atmoko's research conducted at the Asthma Polyclinic of the Jakarta Friendship Hospital in 2009, which was an adult occupying the largest distribution is 67.3%, and the elderly is 27.1% .46 This shows that bronchial asthma is more common in adult patients, aged 20-55 years. The existence of hormonal changes that occur in adulthood contribute to the development of bronchial asthma. Research conducted by Lange et al in 2001 reported that the hormone estrogen can increase the production of corticosteroids that bind to globulin, whereas the hormone progesterone competes with the hormone cortisol to bind to the side of the globulin. The hormones estrogen and progesterone can affect cortisol free levels which cause a decrease in the amount of cortisol. As a result of a decrease in cortisol can cause bronchial narrowing which ultimately leads to bronchial asthma attacks. The hormone estrogen increases adhesion to endothelial cells in blood vessels and a combination of the hormones estrogen and progesterone can increase eosinophil degranulation, thereby facilitating bronchial asthma attacks.

Based on the criteria of the severity of asthma attacks in this study it was found that patients with mild asthma attacks were 85 patients, in patients with moderate asthma attacks were 8 patients and in patients with severe asthma attacks were 6 patients. Distribution of respondents according to the severity of asthma can be seen that the most data are respondents who have asthma severity in mild degrees by 50 respondents from a total of 105 respondents.

Based on the criteria of comorbidities suffered by asthma attack patients in this study it was found that patients with attacks without comorbidities were 10 patients, patients with 1 comorbidities were 37 patients, patients with 2 comorbidities in asthma attacks were 10 and patients with comorbidities more than 3, as many as 17 patients. This is very different from the study by the goddess in 2016 that there were 32 patients with asthma attacks without other comorbidities and 24 patients with asthma patients.

Based on the criteria of classrooms in asthma attack patients it is known that class III there are many patients with asthma attacks as many as 43 people and in class II and I as many as 28 patients, asthma patients based on wards are divided into wards Melati I, Melati III, and Anggrek II . Of the three wards, the highest number of asthma patients sampled from the Anggrek II ward was 22 patients (67%). This is adjusted to the condition of the Anggrek II ward which is a special lung ward, one of which is an asthma patient in Dr. Moewardi, Surakarta. distinguished from the ward Melati I, Melati III, and Anggrek II. Of the three wards, the highest number of asthma patients sampled from the Anggrek II ward was 22 patients (67%). This is adjusted to the condition of the Anggrek II ward which is a special lung ward, one of which is an asthma patient in Dr. Moewardi, Surakarta. Factors that influence the severity of asthma, namely control, genetic, concomitant diseases, in GINA 2019 are

explained mild to severe and life threatening classification, this is very difficult to apply by BPJS, because in BPJS it is only differentiated into 3 classifications namely, mild asthma , moderate asthma and severe asthma.

This study compares the cost of an asthma attack in a therapeutic class with a class that has been determined by INA CBG'S. Based on the results of data analysis regarding the normal distribution test using Kolmogorov-Smirnov, the P value = 0.863 for grade 1 mild attack asthma, which means that the data are normally distributed, then in class 2 mild asthma patients, the value of P = 0.516 means that the data owned are normally distributed and the value of P = 0.138 for grade 3 mild attack asthma, which means that the data owned are normally distributed and the data analysis uses the Independent Samples t-test to find out whether there is a significant difference between the total real cost and the CBG'S INA cost group, with a value of P = 0.002, this proves that there is a significant difference in total costs.

5. Conclusion

Based on the results of research related to the real cost analysis compared with the cost of INA CBG'S in asthma patients hospitalized at the "XYZ" General Hospital in the period January 2017 - December 2018, it can be concluded:

1. The average total direct medical cost for grade 1 mild asthma patients is Rp 3,711,753 / patient, grade 2 mild asthma patients is Rp 3,451,968 / patient, grade 3 mild asthma patients is Rp 4,961,418 / patient.
2. The average total direct medical costs for moderate grade 1 asthma patients is Rp 1,912,000 / patient, moderate grade 2 asthma patients are Rp 1,942,512 / patient and no data is found in grade 3 moderate asthma patients
3. The average total direct medical costs in grade 1 severe asthma patients is Rp 2,100,000 / patient and no data is found in grade 2 and 3 severe asthma patients.
4. The results of data processing from SPSS for Windows version 25 program help with independent t-test obtained data that the P value of 0.002 is smaller than the alpha value of 0.05 (P value <Value α). It can be concluded that there are significant differences in the total direct medical costs between the Real cost group and the INA CBG's Cost.

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