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Analysis of Hemodialization Services (HD) Based on the Comparison of the calculation of Wangaya Hospital Rates with Ina CBG's Rate

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Abstract

Hospitals that grow and develop in order to be managed efficiently and effectively, need to be done to face stiff competition in the world of health services. If you want to survive in the competition, the hospital needs to recalculate the existing hospital rates, by using a competitive rate model calculation. Based on the results of interviews with the head of the hemodialysis unit (HD) stated that 95% of HD patients who seek treatment at Wangaya Hospital are BPJS patients and the rest are general patients. There is a difference in cost sharing between HD rates in hospitals and Ina CBG's (BPJS) rates. Previously, Wangaya Hospital had set a rates for HD patients of IDR. 990,000 while the BPJS has set the Ina CBG's rates for HD patients at IDR. 887,100. Between HD rates originating from hospitals and BPJS there is a difference in cost sharing. Researchers in this case only compare HD rates based on hospital rates and rates based on BPJS, so that the cost sharing value is small. So far, the hospital has never recalculated the difference based on the two rates. Based on this calculation, the hospital will suffer losses for HD services in 2020, thus further research is needed on the topic of the problems above. The type of research used is descriptive with a quantitative approach. This study shows the HD service rates, where the real rates of Wangaya Hospital per unit is IDR. 990,000 while the rates issued by BPJS per unit is IDR.887,100, with a unit cost of IDR. 954,268. Based on the HD Hospital rates, the total revenue per unit minus the total cost per unit is a surplus of 35,732. Based on the HD BPJS rates, the total revenue per unit minus the total cost per unit is minus 67,168.

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1. Introduction

The hospital is a labor-intensive business institution that is multi-disciplinary, capital-intensive, technology-intensive, knowledge-intensive, system-intensive, labor-intensive, and is influenced by an ever-changing environment (Belay et al., 2014). A hospital must be able to survive and even develop by following the development of today's community needs. The steps taken to remain able to survive and develop, of course require no small amount of funds. Determination of efficient and effective tariffs is very much needed here.

Hospitals that grow and develop are certainly managed efficiently and effectively. It needs to be done to face tough competition in the world of health. Porter & Teisberg (2004) state that hospitals can survive in the existing competition, of course the hospital must recalculate the previous hospital rates, namely to minimize the calculation of such high rates by using a competitive rate calculation model, even though the rates are low but still uphold a quality to be able to carry out the vision and mission of a hospital, so that the hospital does not suffer losses in terms of rates and customers (Squires et al., 2015). This is done to attract the interest of old patients and new patients in utilizing existing services. Cost efficiency from the demand side is to impose cost sharing.

The motivation behind the application of fees is the assumption that high demand for health services is the main cause of high health costs. The increased level of education and knowledge and wider access to information have made people aware of the importance of health (Kickbusch, 2001). The availability of BPJS[2] Health Insurance protection and without / little financial risk, there is a high possibility of moral hazard, the use of services that are not needed and inappropriate.

The purpose of fees is to make people act rationally and avoid moral hazard (Kostritsky, 1992). However, fees that exceed the participant's ability limit can become a paradox of the principle of health insurance which protects the population from financial losses and at the same time reduces participant access. At the age of humans are susceptible to various types of serious diseases, this is because the function of the human organs has begun to decline, so that the organs of the body cannot function properly. The older a person is, the more types of diseases they have, including kidney failure.

One of the degenerative diseases that must require large funds to survive. Kidneys are one of the most important organs in the human body, because the kidneys will filter all toxins and get rid of waste, if the performance of the kidneys is too hard then kidney health will decline, this can result in a person having to undergo dialysis. Dialysis is a medical procedure performed using a dialysis machine or commonly called hemodialysis (HD machine) (Savey et al., 2005), this dialysis machine functions to filter toxins in the body and remove them, this is usually done for people with kidney failure. Dialysis is usually done 2-3 times a week. The trend of HD action is currently increasing, because it is one of the alternatives used by patients with kidney failure.

The Wangaya Regional General Hospital is one of the local government hospitals located in Denpasar, Bali Province, which is a Plenary accredited hospital with 20 service areas with type B Education. The types of services provided consist of: Surgical services, including: general surgery and orthopedic surgery, Children's Health Services, including: Neonatology, Child and Adolescent Endocrine, Internal Medicine Services, including Hemodialysis, Endoscopy, VCT, and Cardiology Polyclinic, Mental Health Services (Psychiatry), Skin and Sex Services, Obstetrics and Gynecology Services, Ear, Nose and Throat Services, Eye Services, Neuro Services, Anesthesia Services, Urology Services, Poly Executive, Clinical Pathology Laboratory Services, Radiology Services, Lung Disease

[2] BPJS Kesehatan (*Badan Penyelenggara Jaminan Sosial Kesehatan*, Health Social Security Agency) is a social security agency of Indonesia aimed at providing universal health care to its citizens.

Services , namely TB-DOTS, Emergency Services, Dental Services, Physiotherapy Services, Nutrition Services, Pharmaceutical Services (Source: Wangaya Hospital Services Denpasar City in 2020).

One of the medical service support units at the Wangaya Regional General Hospital, Denpasar City, which is visited by many customers is the hemodialysis installation. Based on data obtained from the hemodialysis installation, the number of HD patients in 2020 was 7,064 people undergoing treatment at the hemodialysis installation.

The head of the hemodialysis department stated that the MOU for the package program collaboration with Sinar Roda partners, the complete package of IDR. 439,000 [Four Hundred Thirty Nine Thousand IDR) consists of:

- 1 (one) Pc Hollow Fiber Elisio HIGH FLUX 13H or 15H
- 1 (one) Set Blood Line A016 or V604 (NS6050-A16)
- 2 (two) Pcs AVs. Fistula 16 G or IV Catheter 16 G x 2”
- 5 (five) Liters of Solution Concentrate Acid / AK / AK 1
- 10 (ten) Liters of Solution Bicarbonate or 1 (one) Cartridge Bicarbonate Powder

There are 10 HD machines provided. Kidney failure is not only experienced by the upper middle class, but also by the lower middle class. As we all know that the cost to be able to do dialysis is not small. In fact, these medical actions must be carried out regularly every week for patients with chronic kidney failure. Therefore, cost sharing is needed here to ease the burden on poor patients in terms of hemodialysis rates. Based on the results of interviews with the head of the hemodialysis unit, it was stated that 95% of HD patients who were treated at Wangaya Hospital were BPJS patients and the rest were general patients.

Previously, Wangaya Hospital had set a tariff for HD patients of IDR. 990,000 while the BPJS has set the Ina CBG's tariff for HD patients at IDR. 887,100. Between HD rates originating from hospitals and BPJS there is a difference in cost sharing. The researcher in this case only compares HD rates based on hospital rates and tariffs based on BPJS, so that the cost sharing value is small. So far, the hospital has never recalculated the difference based on the two rates. Based on this calculation, the hospital will suffer losses for HD services in 2020, thus further research is needed on the topic of the problems above.

2. Materials and Methods

The type of research used is descriptive with a quantitative approach. Descriptive research with the aim of describing or describing the comparison of Wangaya hospital rates with CBG Ina Tariffs related to HD actions at Wangaya Hospital Denpasar City using the real cost method. The tools or instruments used in this research are in the form of interview guidelines and calculations made by the researchers themselves, according to the needs of researchers based on concepts and theories. The subjects in this study were the hemodialysis service unit and related units such as the service division, finance, IPSRS technicians, IPSRS waste treatment and pharmacy.

3. Results and Discussions

A. Research Results.

1) Opinion of Research Subjects.

The subjects of this study were the hemodialysis service unit and related units such as the finance department, IPSRS technicians, IPSRS waste treatment and pharmacy at Wangaya Hospital, Denpasar City. Each research subject was asked for data related to HD services. The results of the interview from the HD Services section stated that: "... *HD services provided by Wangaya Hospital, Denpasar City for every patient, both general patients and BPJS patients, are given the same service, where general patients will be charged with hospital rates while BPJS patients are subject to INA CBG's rates* ...."

Regarding the calculation system applied at the Wangaya Hospital, Denpasar City for the hemodialysis section, it is based on hospital rates and INA CBG's rates and the costs incurred in HD services are based on a real cost approach of tools, materials and equipment including labor costs. The interview results from the JKN finance department stated that: "That the calculation system that we use to calculate rates for hemodialysis services is based on the hospital rates setting a rates of IDR. 990,000 and INA CBG's rates of IDR. 887,100.The treatment of HD service analysis based on the comparison of the calculation of the hospital rates with the INA CBG's rates is the difference between the hospital rate and the INA CBG's rate borne by the hospital, patients with BPJS insurance are not subject to hospital fees but are claimed in the INA CBG's rates.

2) Number of Patients and Employees in HD Services.

Wangaya Hospital Denpasar City in 2020 had a total of 7,064 patients from January to December 2020 with a total of 19 employees consisting of 2 specialist doctors, 2 general practitioners, 12 nurses and 3 non-medical employees.

3) Stages of Activities in HD Services.

Before the patient performs hemodialysis (HD), the HD patient first conducts an examination in the laboratory to determine the level of urea, creatinine, Hb, HbSAg of the patient after which the patient weighs. After that, the patient underwent hemodialysis. Performing hemodialysis there are several activities or stages that must be carried out, namely: a) Rinsing; rinse the engine with disinfectant liquid and water in the engine circulation, b) Settings; put a tube/catheter on the infusion c) Premming ; filling NaCl into corporeal extral channel, Soaking; connect the dialyzer to the dialysate, d) Accessing; perform vascular access/inject patient, e) Programming; programming machine, f) Proceeding ; dialysis process, g) Ending ; ending HD, h) Rinsing; rinse the engine with disinfectant liquid and water in the engine circulation.

4) Cost Analysis.

Identify the activities in the Hemodialysis unit which consist of direct and indirect costs. The data obtained is data in 2020, namely from January to December 2020. Direct costs are activities that generate costs and relate directly to patients, namely:

Table 1. Direct Cost of HD Services in 2020.

Direct cost	Mark (IDR)
Registration fee	19,719,000
Direct costs (HD package costs)	3,781,010,420

Direct costs (Heparin and NACL costs, non-mandatory drug costs, and medical consumables)	383,289,962
Laboratory Fee	3,619,000
Labor costs	215,979,500.00
Service Fee	1,095,217,606
Electricity cost	1,004,713,000.00
Water fee	25,827,143.80
Maintenance and repair costs	4,510,000.00
Cost of consumables (printing, cleaning, stationery, electric tools)	26,732,406.00
Garbage fee	197,792,000.00

Source: Data from Wangaya Hospital Denpasar City in 2020

b) Indirect Costs.

Indirect costs are costs that are not directly related to patients, which consist of linen and laundry costs, HD building rental costs, depreciation costs for medical and non-medical equipment.

Table 2. Indirect Cost of HD Services in 2020

Indirect Cost Value	Mark (IDR)
Linen and laundry fee	8,206,000.00
HD building rental fee	328,500,000.00
Depreciation of Medical and Non-medical Equipment	10,783,320.00

Source: Data from Wangaya Hospital Denpasar City in 2020

c) Total Cost.

The total cost is the cost incurred by the Hemodialysis unit at the Wangaya Hospital, Denpasar City in 2020 which consists of direct costs and indirect costs. Based on the results of identification and analysis of direct and indirect costs, it can be seen that the total costs for hemodialysis measures used by Wangaya Hospital Denpasar City, namely:

Table 3. Total Cost of HD Services in 2020.

Direct cost	Mark (IDR)

Registration fee	19,719,000
Direct costs (HD package costs)	3,781,010,420
Direct costs (Heparin and NACL costs, non-mandatory drug costs, and medical consumables)	383,289,962
Laboratory Fee	3,619,000
Labor costs	215,979,500.00
Service Fee	1,095,217,606
Electricity cost	1,004,713,000.00
Water fee	25,827,143.80
Maintenance and repair costs	4,510,000.00
Cost of consumables (printing, cleaning, stationery, electric tools)	26,732,406.00
Garbage fee	197,792,000.00
Indirect Cost	Mark (IDR)
Linen and laundry fees	8,206,000.00
HD building rental fees	328,500,000.00
Depreciation of Medical and Non-medical Devices	10,783,320.00
total	7.105.899.357,73

Source: Data from Wangaya Hospital Denpasar City in 2020

B. Discussion.

1) Difference in Existing Rates.

Based on this research, it can be seen that the rate charged by the Wangaya Hospital in Denpasar City is IDR. 990,000. The determination of the tariff for this hemodialysis procedure is using the real cost method. In general, the results of the analysis of the real cost method are used for determining the cost of products/services, controlling costs (related to the budget), making decisions, and identifying cost accounting systems.

Table 4. Calculation of the Difference in Income and Costs in 2020 based on Hospital Rates with INA CBG's rates based on the Real Cost Method

No	Document	Mark (IDR)			Analysis
		Hospital Rates	INA-CBG's Price	Difference	
1	2019 Financial Operational Report				
a	Income				Revenue consists of INA-CBG's income and 2020 general income
	BPJS claim income	7,290,652,588	6,211,632,514	-1,079,020,074	Income from BPJS Outpatient and inpatient claims in 2020
	General income	21,621,000	21,621,000	0	General patient income in 2020
	Total income	7,312,273,588	6,233,253,514	-1,079,020,074	Revenue consists of INA-CBG's income and 2020 general income
b	Cost				Cost consists of:
	Direct cost	6,758,410,038	6,758,410,038	0	Direct costs are costs that are directly used for HD services, namely registration fees, mandatory & non-mandatory HD package drugs and medical consumables, laboratory fees, labor costs, service fees, electricity costs, water costs, maintenance and repair costs , costs of consumables (printing, cleaning, stationery, electric tools), waste costs
	Indirect Cost	347,489,320	347,489,320	0	Indirect costs are costs that are indirectly considered as HD service costs, namely linen and laundry costs, building rental costs, depreciation costs for medical and non-medical devices
	Total cost	7,105,899,358	7,105,899,358	0	Total direct and indirect costs in 2020

c	Total revenue minus costs	206,374,230	-872,645,844	-1,079,020,074	Represents total residual income minus 2020 costs
	Percentage (%)	97%	114%		

Source: Data from Wangaya Hospital Denpasar City in 2020

Based on the calculation of the 2020 HD operational report using the real cost method based on the 'INA-CBG' Tariff, the total revenue report minus the total HD cost for 2020 minus IDR. 872,645,844 with a percentage of 114%, meaning that the total cost of HD exceeds the total revenue of HD in 2020 by 14%, while Based on the calculation of the HD operational report in 2020 using the real cost method based on Hospital Rates, the report obtained is that the total income minus the total cost of HD in 2020 is a surplus. of IDR. 206,374,230 with a percentage of 97%, meaning that HD's total revenue exceeds HD's total cost in 2020 by 3%

Table 5. Calculation of the difference in income and costs per unit based on Hospital Rates with INA CBG's rates based on the Real Cost Method.

No	Document	Mark (IDR)			Analysis
		Hospital Rates	INA-CBG'sI Price	Difference	
1	Financial Report per unit				
a	Income	990,000	887,100	-102,900	INA-CBG's income used based on BPJS tariff payment claims
b	Cost				Cost consists of:
	Direct cost	905,076	905,076	0	Direct costs are costs that are directly used for HD services, namely registration fees, mandatory HD package drugs & medical consumables, labor costs, service fees, electricity costs, water costs, maintenance and repair costs, costs of consumables (printing, cleaning, stationery, electric tools), waste costs
	Indirect Cost	49,192	49,192	0	Indirect costs are costs that are indirectly considered as HD service costs, namely linen and laundry costs, building rental costs, depreciation costs for medical and non-medical devices
	Total cost	954,268	954,268	0	Sum of direct and indirect costs
c	Total revenue minus costs	35,732	-67,168	-102,900	Represents total residual income minus costs per unit/patient

	Percentage (%)	96%	108%		

Source: Data from Wangaya Hospital Denpasar City in 2020

Based on the HD unit cost calculation using the real cost method based on the INA-CBG tariff, where the total revenue per unit is IDR. 887.100 While the total cost per unit is IDR. 954,268 so that the total revenue minus the total cost per unit is minus 67,168 with a percentage of 108%, meaning that the total HD cost per unit exceeds the HD revenue per unit by 8%.

Based on the HD unit cost calculation using the real cost method based on Hospital Rates, where the total income per unit is IDR. 990,000 While the total cost per unit is IDR. 954,268 so that the total revenue minus the total cost is a surplus of 35,732 with a percentage of 96%, meaning that the total HD income per unit exceeds the total HD cost per unit by 4%.

Based on the table above, the tariff for Wangaya Hospital in Denpasar City is IDR. 990,000 while the INA CBG's tariff is IDR. 887,100, the difference between the two rates is IDR. 102,900. Based on the data above, it can be analyzed that the hospital rate is greater than the INA CBG's rate, this means that Wangaya Hospital has suffered a loss of IDR. 102,900, where the Hospital must bear the difference in rates because from the INA BCG's tariff (the BPJS) only pays HD services of IDR. 887,100.

4. Conclusion

Based on the calculation of the 2020 HD operational report using the real cost method based on the 'INA-CBG' Tariff, the total revenue report minus the total HD cost for 2020 minus IDR. 872,645,844 with a percentage of 114%, meaning that the total cost of HD exceeds the total revenue of HD in 2020 by 14%, while Based on the calculation of the HD operational report in 2020 using the real cost method based on Hospital Rates, the report obtained is that the total income minus the total cost of HD in 2020 is a surplus. of IDR. 206,374,230 with a percentage of 97%, meaning that HD's total revenue exceeds HD's total cost in 2020 by 3%. Based on the HD unit cost calculation using the real cost method based on the INA-CBG tariff, where the total revenue per unit is IDR. 887.100 While the total cost per unit is IDR. 954,268 so that the total revenue minus the total cost per unit is minus 67,168 with a percentage of 108%, meaning that the total HD cost per unit exceeds the HD revenue per unit by 8%. Based on the HD unit cost calculation using the real cost method based on Hospital Rates, where the total income per unit is IDR. 990,000 While the total cost per unit is IDR. 954,268 so that the total revenue minus the total cost is a surplus of 35,732 with a percentage of 96%, meaning that the total HD income per unit exceeds the total HD cost per unit by 4%. The components of costs that can be streamlined are direct additional costs for non-mandatory drugs, general medical BHP costs, laboratory costs because not all patients use these drugs or examinations, registration fees because they can get subsidies from other units.

Recommendations for research results: This hemodialysis examination consists of HD services and HD polyclinic, it is recommended that in the future HD services have their own management management because to calculate indicators related to HD examinations it is difficult and takes time to sort out the data because the data is still incorporated in the home management system sick. For further researchers, it is expected to be able to do more in-depth research such as research from a financial perspective, namely the HD drug supply as of December 31, 2020 in the amount of IDR. 6,247,542 are classified as not meeting the standard guidelines for preparing drug demand plans and controlling drug supplies in hospitals based on guidelines from the Ministry of Health of the Republic of Indonesia in 2020, because the standard drug supply is normally 1.5% of the average drug use per

month while the use of HD drugs the average per month in 2020 is IDR. 327,898,000 so that HD supplies as of December 31, 2020 do not meet the standards.

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