

Analysis of Hemodiialysa (HD) Services Based on Comparison of Hospital Tariff Calculations With BPJS Health Rates

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ABSTRACT

To thrive and advance, hospitals must effectively manage fierce competition within the healthcare sector. Remaining competitive necessitates hospitals to reevaluate their existing pricing tactics, particularly by adopting a competitive pricing framework. After engaging in conversations with the head of the hemodialysis (HD) department, it came to light that the BPJS program accounted for 95% of the HD patients at Wangaya Hospital, while the remaining 5% comprised general patients. This study used a descriptive, quantitative research method. The investigation focused on the Hemodialysis service unit and its related departments, including service, finance, technician, IPSRS, IPSRS waste management, and pharmacy departments.

INTRODUCTION

Running a hospital demands extensive effort, resources, technology, knowledge, systems, and energy, and it must adapt to its changing environment. Adapting to societal needs is essential for the hospital to remain relevant and expand, but this growth requires substantial financial commitment. Success depends on establishing the correct pricing strategy. In order to thrive in the healthcare industry, hospitals must efficiently and effectively manage their operations to expand and enhance their services. It is essential for hospitals to adapt their pricing strategies to strike a balance between deterring patients with high rates and compromising quality with low rates. Hospitals must focus on attracting both existing and new clients by offering high-quality services at competitive prices to achieve their goals and avoid financial setbacks or patient loss.

From the patient's perspective, it is crucial to put in place measures for cost-sharing in order to lower expenses. These measures are based on the understanding that the high demand for healthcare services often results in increased costs. When individuals are well-informed and have access to information, they become more conscious of the significance of their health. The presence of BPJS Health Guarantee protection and minimal financial risk also adds to this demand. However, if fees are set too high, there is a risk of moral hazard, where patients might unnecessarily or inappropriately utilize services. The purpose of cost-sharing is to promote rational behavior among patients and prevent moral hazard. The purpose of cost-sharing is to promote rational patient behavior and prevent moral hazard. Establishing fees that are too low can pose challenges as it may contradict the purpose of health insurance, which is to safeguard the public from financial burdens and ensure availability of healthcare services. As people age, they become more vulnerable to serious illnesses as a result of the natural deterioration of their organ function. Consequently, as the population ages, there is a growing need for healthcare services, including expensive treatments for conditions such as kidney failure. The body relies on the kidneys to filter out toxins and waste, making them essential organs. If the kidneys become overburdened, it can result in a decline in kidney health, possibly requiring dialysis. Dialysis, also referred to as hemodialysis (HD), is a medical procedure that utilizes a dialysis machine to effectively remove toxins from the body and eliminate waste. Typically, this process is conducted 2-3 times weekly.

The popularity of high-definition (HD) treatments is on the rise, as this method is among the options chosen by individuals with kidney failure. Wangaya Regional General Hospital, located in Denpasar, Bali Province, has been recognized as a Plenary accredited institution by the regional government. It offers 20 different service areas and provides Type B Education. The hospital's range of services includes:

Tabel.1 Type of Hospital Service

No	Type of Hospital Service
1	Surgical Care, covering general and orthopedic surgeries
2	Services for Children's Health, including Neonatology, Pediatrics, and Adolescent Endocrinology
3	Internal Medicine Care, which includes Hemodialysis, Endoscopy, Viral Hepatitis Testing, and Heart Clinic
4	Mental Health Care (Psychiatry)
5	Services for Skin and Genital Health
6	Obstetrics and Gynecology Care
7	Services for Ear, Nose, and Throat Health
8	Eye Care Services
9	Neurological Care
10	Anesthesia Care
11	Urology Care
12	Executive Polyclinic
13	Laboratory Services for Clinical Pathology
14	Imaging Services
15	Services for Lung Diseases, specifically focusing on Tuberculosis-Directed Treatment
16	Emergency Care
17	Dental Care
18	Rehabilitation Services
19	Nutrition Services
20	Pharmacy Services

Source: Services at Wangaya Hospital, Denpasar City, 2020

The hemodialysis installation at Wangaya Regional General Hospital in Denpasar City receives a high number of visitors seeking medical support. According to data from the hemodialysis installations, 7,064 patients received treatment there in 2020. The head of the hemodialysis division has declared that the agreement for cooperation on bundled programs with Sinar Rodar Roda Re Cant encompasses a comprehensive package valued at Rp. 439,000,- (Four Hundred and Thirty-Nine Thousand Rupiah), which consists of:

- a. One (1) Elisio HIGH FLUX 13H or 15H hollow fiber PC
- b. One (1) set of Blood Line A016 or V604 (NS6050-A16)
- c. Two (2) AV. Fistula 16 G or IV Catheter 16 G x 2" pieces
- d. Five (5) liters of Acid / AK / AK 1 Solution Concentrate
- e. Ten (10) liters of Bicarbonate Solution or one (1) Cartridge of Bicarbonate Powder.

We have a total of ten high-definition machines that are fully prepared for use. Kidney failure affects individuals from both affluent backgrounds and those belonging to the lower middle-class. The expenses associated with undergoing dialysis are significant, and this treatment requires consistent weekly sessions for individuals with chronic kidney failure. Therefore, it is crucial to implement cost-sharing initiatives to alleviate the financial burden on disadvantaged patients regarding the costs of hemodialysis. Following discussions with the head of the hemodialysis department, it was found that 95% of the patients receiving HD treatment at Wangaya Hospital were covered by BPJS, while the remaining 5% were non-BPJS patients.

The fee for hemodialysis (HD) patients at Wangaya Hospital used to be Rp.990,000, but BPJS has now set a tariff of Rp.887,100 for Ina CBG's HD patients. There is a noticeable disparity in cost sharing between the rates for HD treatment at hospitals and the rates set by BPJS. The examination of HD rates, comparing the charges imposed by hospitals and the rates established by BPJS, revealed a minor inconsistency in cost sharing. The hospital has not yet reviewed the gap between these two rates. With this assessment, it is expected that the hospital will face financial losses in HD services in 2020, highlighting the necessity for further investigation into the issue

LITERATURE REVIEW

The body relies on the kidneys to filter out toxins and waste, making them essential organs. If the kidneys become overburdened, it can result in a decline in kidney health, possibly requiring dialysis. Dialysis, also referred to as hemodialysis (HD), is a medical procedure that utilizes a dialysis machine to effectively remove toxins from the body and eliminate waste. Typically, this process is conducted 2-3 times weekly. The popularity of high-definition (HD) treatments is on the rise, as this method is among the options chosen by individuals with kidney failure. Wangaya Regional General Hospital, located in Denpasar, Bali Province, has been recognized as a Plenary accredited institution by the regional government. It offers 20 different service areas and provides Type B Education.

METHODOLOGY

- a. The research utilizes a descriptive approach with a quantitative method to illustrate and compare hospital rates for patients undergoing HD procedures at Wangaya Hospital, Denpasar City, in relation to CBG's Tariffes using the real cost method.
- b. The study utilizes interview guides and researcher-conducted calculations to meet specific requirements rooted in relevant concepts and theories.
- c. The research participants consist of the Hemodialysis service unit and its related departments, such as service, finance, IPSRS technicians, IPSRS waste processing, and pharmacy.

RESEARCH RESULT AND DISCUSSION

Opinions of Research Subjects

The study is centered on the Hemodialysis service unit in Denpasar City, as well as the financial department, IPSRS technicians, IPSRS waste management, and the Wangaya Hospital Pharmacy. Each research subject was requested to provide data concerning HD services. According to the interviews conducted with the HD Services section, it was indicated that Wangaya Regional Hospital in Denpasar City provides the same HD services to all patients, including general patients and BPJS patients. General patients are billed based on the hospital rate, while BPJS patients are billed based on the INA CBG's rate.

At Wangaya Hospital in Denpasar City, the calculation system for the Hemodialysis department is determined by the hospital tariffs and the tariffs set by the INA CBG. The costs for HD services are calculated based on the actual expenses for tools, materials, equipment, and labor. According to interviews with the JKN finance department, the rates for Hemodialysis services are determined using the hospital's rate of Rp. 990,000 and the INA CBG's rate of Rp. 887,100. The hospital evaluates its calculated expenses by comparing them to the rates offered by INA CBG for HD services. If there is any difference between the hospital's costs and the rates set by INA CBG, the hospital bears the cost. Patients who have BPJS insurance are not required to pay for hospital charges, as their expenses are already covered by the rates set by INA CBG.

Number of Patients and Employees in HD Services

The Wangaya Hospital in Denpasar City provided medical care to 7,064 patients throughout the year 2020, while operating with a team of 19 staff members. This group consisted of two specialized physicians, two general practitioners, twelve nurses, and three non-medical staff members.

Stages of Activities in HD Services

Prior to undergoing Hemodialysis (HD), the patient is first evaluated in the lab to assess urea, creatinine, Hb, and HbSAg levels, and then the patient weighs themselves. Following this, the patient receives hemodialysis. During hemodialysis, several essential activities or stages are carried out.

The following procedures are to be performed:

- a) Flushing: use disinfectant liquid and water to rinse the engine in the engine circulation,
- b) Configuration: Attach the tube/catheter to the IV,
- c) Priming: Fill the extracorporeal channel with NaCl, Immersing: Connect the dialyzer to the dialysate,
- d) Entry: Perform vascular access/inject the patient,
- e) Setting up: Configuring the machines,
- f) Progressing: Carrying out the dialysis process,
- g) Concluding: Finish the HD,
- h) Flushing: Use disinfectant liquid and water to rinse the engine in the engine circulation.

Cost Analysis

Can you please differentiate between the direct and indirect expenses associated with the operations of the Hemodialysis unit? The data gathered is for the year 2020, encompassing January through December.

Direct Costs

The activities that generate costs and are directly related to patients are known as direct costs.

Table 2. Direct Costs of HD Services in 2020

Biaya Langsung	Nilai
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 Fees	3,619,000
Labor costs	215,979,500.00
Service Fees	1,095,217,606
Electricity cost	1,004,713,000.00
Water costs	25,827,143.80
Maintenance and repair costs	4,510,000.00
Cost of consumables (printing, cleaning, stationery, electrical equipment)	26,732,406.00
Waste fees	197,792,000.00

Indirect Costs

The patient is not held accountable for specific costs, including expenses for linens and laundry, rental charges for the HD building, and depreciation fees for both medical and non-medical devices.

Table 3. Indirect Costs of HD Services in 2020

Indirect Costs	value
Linen and laundry costs	8,206,000.00
HD building rental costs	328,500,000.00
Depreciation of Medical and Non-medical Equipment	10,783,320.00

Total Cost

In the year 2020, the Hemodialysis services provided at Wangaya Hospital in Denpasar City encompassed various expenses, comprising both direct and indirect costs. Through a comprehensive evaluation and analysis of these direct and indirect costs, a complete comprehension of the overall expenses borne by the Hemodialysis unit at Wangaya Regional Hospital in Denpasar City can be attained.

Table 4. Total Cost of HD Services in 2020

Direct cost	Value
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 Fees	3,619,000
Labor costs	215,979,500.00
Service Fees	1,095,217,606
Electricity cost	1,004,713,000.00
Water costs	25,827,143.80
Maintenance and repair costs	4,510,000.00
Cost of consumables (printing, cleaning, stationery, electrical equipment)	26,732,406.00
Waste fees	197,792,000.00
Indirect Costs	Nilai
Linen and laundry costs	8,206,000.00
HD building rental costs	328,500,000.00
Depreciation of Medical and Non-medical Equipment	10,783,320.00
Total	7.105.899.357,73

Source: Data from Wangaya Hospital, Denpasar City, 2020

DISCUSSION

Existing Tariff Differences

In the year 2020, the costs linked to providing Hemodialysis services at Wangaya Hospital in Denpasar City encompassed both direct and indirect expenditures.. Through the evaluation and analysis of both direct and indirect costs, a thorough comprehension of the overall expenses associated with the Hemodialysis unit at Wangaya Regional Hospital in Denpasar City can be acquired.

Table 5. Calculation of the Difference in Income and Costs in 2020 Based on Hospital Rates and INA CBG's Rates Based on the Real Cost Method

No	Document	Value (Rupiah)			Analysis
		Hospital Rates	INA-CBG's rates	Difference	
2	Operational Report				
a	Finance in 2019				Income consists of INA-CBG's income and general income for 2020
-	Income	7,290,652,588	6,211,632,514	-1,079,020,074	Income from outpatient and inpatient BPJS claims in 2020
-	BPJS claim income	21,621,000	21,621,000	0	General patient income in 2020
	General income	7,312,273,588	6,233,253,514	-1,079,020,074	Income consists of INA-CBG's income and general income for 2020
	Total income				
b					Costs consist of:
-	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 drug packages and medical consumables, laboratory fees, labor costs, service fees, electricity costs, water costs, maintenance and repair costs , costs for consumables (printing, cleaning, stationery, electrical equipment), waste costs
-	Direct cost	347,489,320	347,489,320	0	Indirect costs are costs that are not directly considered as HD service costs, namely linen and laundry costs, building rental costs, depreciation costs for medical and non-medical equipment

	Indirect Costs	7,105,899,358	7,105,899,358	0	Sum of direct and indirect costs in 2020
c	Total cost	206,374,230	-872,645,844	-1,079,020,074	Represents the remaining total income minus costs for 2020
		97%	114%		

Source: Data from Wangaya Hospital, Denpasar City, 2020

The 2020 HD operational report discloses a shortfall of Rp. 872,645,844 when employing the real cost approach and the INA-CBG Tariff. This signifies that expenses surpassed revenue by 14%. Conversely, when utilizing Hospital Tariffs, the report indicates a surplus of Rp. 206,374,230, with revenue surpassing expenses by 3%. These findings are extracted from the operational report of 2020 HD.

Table 6. Calculation of the Difference in Income and Costs Per Unit Based on Hospital Rates and INA CBG's Rates Based on the Real Cost Method

No	Document	Value (Rupiah)			Analysis
		Hospital Rates	INA-CBG's rates	Difference	
1	Financial Reports per unit				
a	Income	990,000	887,100	-102,900	INA-CBG's income is used based on BPJS tariff payment claims
b	Cost				Costs consist of:
-	Direct cost	905,076	905,076	0	Direct costs are costs that are directly used for HD services, namely registration fees, mandatory HD drug packages & medical consumables, labor costs, service fees, electricity costs, water costs, maintenance and repair costs, costs of consumables (printing, cleaning, stationery, electrical equipment), waste costs

-	Indirect Costs	49,192	49,192	0	Indirect costs are costs that are not directly considered as HD service costs, namely linen and laundry costs, building rental costs, depreciation costs for medical and non-medical equipment
-	Total cost	954,268	954,268	0	The sum of direct and indirect costs
c		35,732	-67,168	-102,900	Represents the remaining total income minus costs per unit/patient
	Total revenue minus costs	96%	108%		

Source: Data from Wangaya Hospital, Denpasar City, 2020

1. The unit cost of HD is determined through the utilization of the real cost approach and is based on the INA-CBG Tariff. Each individual unit generates a revenue of IDR 887,100, while incurring a total cost of Rp. 954,268. As a result, there is a shortfall of IDR 67,168, which represents 108% of the total revenue. The figures demonstrate that the overall expenses for each unit of HD surpass the income generated by HD per unit by 8%.
2. By employing the real cost method and Hospital Tariffs, the calculation of HD unit cost reveals that the overall revenue per unit amounts to IDR 990,000. The total cost per unit is Rp. 954,268, leading to a surplus of 35,732 and a percentage of 96%. As a result, the total HD revenue per unit exceeds the total HD costs per unit by 4%.
3. According to the provided table, the rate at Wangaya Hospital in Denpasar City is IDR 990,000, while INA CBG's tariff amounts to Rp. 887,100, resulting in a discrepancy of Rp. 102,900. This data indicates that the hospital's rates are higher than those of INA CBG, implying that Wangaya Hospital incurred a loss of Rp. 102,900. Therefore, the hospital is responsible for covering the difference in tariff since INA BCG's (BPJS) tariff only covers Rp. 887,100.

CONCLUSIONS AND RECOMMENDATIONS

1. In the operational report for 2020, the INA-CBG Tariff-based real cost method reveals that the total HD expenses exceeded the total HD earnings by Rp. 872,645,844, resulting in a 14% shortfall. In contrast, the report indicates that using the Hospital Tariffs-based real cost method resulted in an HD revenue surplus of Rp. 206,374,230, representing a 3% excess compared to the total HD costs for 2020.

2. Employing the INA-CBG Tariff along with the real cost method results in a total income per unit of IDR 887,100, with the total cost per unit at Rp. 954,268. This leads to a deficit of IDR 67,168 per unit, representing 108% of the total HD costs per unit surpassing HD income per unit by 8%.
3. By utilizing the real cost method based on Hospital Tariffs, the total income per unit reaches IDR 990,000.

ADVANCED RESEARCH

Still conducting further research to find out more about Analysis of Hemodialysis (HD) Services Based on Comparison of Hospital Tariff Calculations With BPJS Health Rates

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