Analysis of Hemodialisa (HD) Services Based on Comparison of Calculations Hospital Rates with Rates BPJS Kesehatan

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ABSTRACT

Background: For hospitals to grow and develop in order to be managed efficiently and effectively, it is necessary to face intense competition in the world of health services. If they want to survive in competition, hospitals need to recalculate their existing hospital rates, namely by using a competitive tariff model calculation. Based on the results of interviews with the head of the hemodialysis (HD) unit, it was stated that 95% of HD patients seeking treatment at Wangaya Hospital were BPJS patients and the rest were general patients. There is a difference in cost sharing between HD rates at hospitals and I n a C B G 's (BPJS) rates. Wangaya Hospital previously set a fee for HD patients at Rp. 990,000, while the BPJS has set a tariff for I n a C B G 's HD patients at IDR 887,100. Between HD rates from hospitals and BPJS, there is a difference in cost sharing. Researchers in this case only compared HD rates based on hospital rates and rates based on BPJS, so that the cost sharing value was small. So far, the hospital has never recalculated the difference based on these two rates. Based on this calculation, hospitals will incur losses in HD services in 2020, thus further research is needed on the topic above.
INTRODUCTION

Hospitals, as multifaceted institutions, constantly adapt to meet evolving societal needs while navigating complex economic landscapes. Efficient management and strategic pricing mechanisms are imperative for hospitals to not only survive but thrive amidst fierce competition in the healthcare sector. In this context, the determination of hospital tariffs becomes a crucial aspect, requiring a delicate balance between cost-effectiveness and quality assurance. This paper explores the significance of tariff determination in the context of Wangaya Regional General Hospital, particularly focusing on hemodialysis services—a critical component in addressing the growing prevalence of kidney failure. Through an examination of existing tariff structures and the impact of reimbursement policies such as those of the BPJS Health Guarantee, this study aims to shed light on the necessity of recalibrating hospital rates to ensure financial viability without compromising patient access and quality of care.

LITERATURE REVIEW

A hospital is a labor-intensive business institution that is multidisciplinary, capital-intensive, technology-intensive, knowledge-intensive, system-intensive, energy-intensive, and influenced by an ever-changing environment. A hospital must be able to survive and even develop by following the development of society's current needs. The steps taken to survive and develop certainly require quite large funds. Efficient and effective tariff determination is needed here.

Hospitals that grow and develop are of course managed efficiently and effectively, this needs to be done to face the intense competition in the world of health. Hospitals can survive in the current competition, of course the hospital must recalculate the existing hospital rates, namely to minimize the calculation of very high rates by using a competitive rate calculation model, even though the rates are low but still upholding quality. to be able to carry out the vision and mission of a hospital, so that the hospital does not experience losses in terms of rates or customers. This is done to attract the interest of old and new patients in utilizing existing services. Cost efficiency from the demand side is to implement cost contributions (cost sharing).

The motivation behind implementing cost contributions is the assumption that high demand for health services is the main cause of high health costs. Increasing levels of education and knowledge and widespread access to information have made people aware of the importance of health. With the availability of BPJS Health Guarantee protection and with no/little financial risk, there is a high possibility of moral hazard, unnecessary and inappropriate use of services. 1 The purpose of fee contributions is so that people act rationally and avoid moral hazard. However, fee contributions that exceed the participant's ability can be a paradox of the health insurance principle which protects the population from financial loss and at the same time reduces participant access. At age, humans are susceptible to various types of serious diseases, this is because the function of the human body's organs has begun to decline, so that the body's organs cannot function properly. The older a person is, the more types of disease they have, including kidney failure. One of the degenerative diseases that requires large funds to survive. The kidneys are one of the most important organs in the human body, because the kidneys will filter all toxins and remove waste. If the kidneys work too hard then kidney health will decline, this can result in a person having to undergo dialysis. Dialysis is a medical procedure carried out using a dialysis machine or commonly called hemodialysis (HD machine).
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 for HD procedures is currently increasing, because this procedure is an alternative used by kidney failure patients. Wangaya Regional General Hospital is one of the regional government hospitals located in Denpasar, Bali Province. It is a Plenary accredited hospital with 20 service areas with type B Education. The types of services provided consist of:

1. Surgical Services, including: general surgery and orthopedic surgery
2. Children's Health Services, including: Neonatology, Children's and Adolescent Endocrine
3. Internal Medicine Services, including Hemodialysis, Endoscopy, VCT, and Heart Polyclinic
4. Mental Health Services (Psychiatry)
5. Skin and Genital Services
6. Obstetrics and Gynecology Services
7. Ear, Nose and Throat Services
8. Eye Services
9. Nervous Services
10. Anesthesia Services
11. Urology Services
12. Executive Poly
13. Clinical Pathology Laboratory Services
14. Radiology Services
15. Lung Disease Services, namely TB-DOTS
16. Emergency Services
17. Dental Services
18. Physiotherapy Services
19. Nutrition Services
20. Pharmacy Services

Source: Pelayanan RSUD Wangaya Kota Denpasar Tahun 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 hemodialysis installations, the number of HD patients in 2020 was 7,064 people undergoing treatment at hemodialysis installations.

The head of the hemodialysis section stated that the MOU for package program cooperation with the partner of SINAR RODDA Complete package of Rp. 439,000,- [Four Hundred and Thirty Nine Thousand Rupiah] consists of:

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

There are 10 HD machines provided. Kidney failure is not only experienced by upper middle class people, but also by lower middle class people. As we all know, the costs required to be able to undergo dialysis are not small. In fact, this medical procedure must be carried out routinely every week for patients with chronic kidney failure. Therefore, cost sharing is very necessary 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 seeking treatment at
Wangaya Hospital were BPJS patients and the rest were general patients.
Wangaya Hospital previously set a fee for HD patients at Rp. 990,000, while BPJS has set a tariff for
INA C B G 's HD patients at Rp. 887,100. Between HD rates from hospitals and BPJS, there is a
difference in cost sharing. Researchers in this case only compared HD rates based on hospital rates
and rates based on BPJS, so that the cost sharing value was small. So far, the hospital has never
recalculated the difference based on these two rates. Based on this calculation, hospitals will incur
losses in HD services in 2020, thus further research is needed on the topic above.

**METHODOLOGY**

a. The type of research used is descriptive with a quantitative approach. Descriptive research with
the aim of illustrating or describing comparisons regarding hospital rates for hospital patients in
relation to C B G's Tarifies related to HD procedures at Wangaya Hospital, Denpasar City using
the real cost method.

b. The tools or instruments used in this research are interview guides and calculations made by the
researcher himself, according to the researcher's needs based on concepts and theories. The
subjects in this research were the Hemodialysis service unit and related units such as service,
finance, IPSRS technicians, IPSRS waste processing and pharmacy.

**RESEARCH RESULT**

**Opinions of Research Subjects**

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

Regarding the calculation system applied at Wangaya Hospital, Denpasar City for the
Hemodialysis section, it is based on hospital tariffs and INA CBG's tariffs and the costs incurred in
HD services are based on the real cost approach of tools, materials and equipment including labor
costs. The results of interviews from the JKN finance department stated that:
"The calculation system that we use to calculate rates for Hemodialysis services is based on hospital
rates that set a rate of Rp. 990,000 and INA CBG's rate of Rp. 887,100.

The analysis treatment for HD services is based on a comparison of the calculation of hospital
rates with the INA CBG's rates. The difference between the hospital rates and the INA CBG's rates is
borne by the hospital. Patients with BPJS insurance are not charged hospital fees but are claimed in
the INA CBG's rates.

**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.
**Stages of Activities in HD Services**
Before a patient undergoes Hemodialysis (HD), the HD patient first undergoes an examination in the laboratory to determine the patient's urea, creatinine, Hb, HbSAg levels, after which the patient weighs themselves. After that, the patient underwent hemodialysis. Carrying out 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; Install the tube/catheter on the IV
c) Premming; filling NaCl into the extracorporeal channel, Soaking; connect the dialyzer to the dialysate,
d) Accessing; perform vascular access/inject patient,
e) Programming; programming machines,
f) Proceeding; dialysis process,
g) Ending; end HD,
h) Rinsing; rinse the engine with disinfectant liquid and water in the engine circulation.

2) **Cost Analysis**
Identify the activities in the Hemodialysis unit which consist of direct and indirect costs. The data obtained is data for 2020, namely from January to December 2020.

*a) Direct Costs*
Direct costs are activities that generate costs and are directly related to patients, namely:

<table>
<thead>
<tr>
<th>Direct cost</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration fee</td>
<td>19,719,000</td>
</tr>
<tr>
<td>Direct costs (HD package costs)</td>
<td>3,781,010,420</td>
</tr>
<tr>
<td>Direct costs (Heparin and NACL costs, non-mandatory drug costs, and medical consumables)</td>
<td>383,289,962</td>
</tr>
<tr>
<td>Laboratory Fees</td>
<td>3,619,000</td>
</tr>
<tr>
<td>Labor costs</td>
<td>215,979,500.00</td>
</tr>
<tr>
<td>Service Fees</td>
<td>1,095,217,606</td>
</tr>
<tr>
<td>Electricity cost</td>
<td>1,004,713,000.00</td>
</tr>
<tr>
<td>Water costs</td>
<td>25,827,143.80</td>
</tr>
<tr>
<td>Maintenance and repair costs</td>
<td>4,510,000.00</td>
</tr>
<tr>
<td>Cost of consumables (printing, cleaning, stationery, electrical equipment)</td>
<td>26,732,406.00</td>
</tr>
</tbody>
</table>
Wahyuni, Suartawan, Wardana

<table>
<thead>
<tr>
<th>Waste fees</th>
<th>197,792,000.00</th>
</tr>
</thead>
</table>

Source: Data RSUD Wangaya Kota Denpasar Tahun 2020

**b) Indirect Costs**

Indirect costs are costs that are not directly related to the patient, consisting of linen and laundry costs, HD building rental costs, depreciation costs alat medik dan non medik.

<table>
<thead>
<tr>
<th>Table 2. Indirect Costs of HD Services in 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect Cost</td>
</tr>
<tr>
<td>Linen and laundry costs</td>
</tr>
<tr>
<td>HD building rental costs</td>
</tr>
<tr>
<td>Depreciation of Medical and Non-medical Equipment</td>
</tr>
</tbody>
</table>

Source: Data RSUD Wangaya Kota Denpasar Tahun 2020

**c) Total Cost**

Total costs are the costs incurred by the Hemodialysis unit at Wangaya Hospital, Denpasar City in 2020, consisting 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 procedures used by Wangaya Hospital, Denpasar City, are:

<table>
<thead>
<tr>
<th>Table 3. Total Cost of HD Services in 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct cost</td>
</tr>
<tr>
<td>Registration fee</td>
</tr>
<tr>
<td>Direct costs (HD package costs)</td>
</tr>
<tr>
<td>Direct costs (Heparin and NACL costs, non-mandatory drug costs, and medical consumables)</td>
</tr>
<tr>
<td>Laboratory Fees</td>
</tr>
<tr>
<td>Labor costs</td>
</tr>
<tr>
<td>Service Fees</td>
</tr>
<tr>
<td>Electricity cost</td>
</tr>
<tr>
<td>Water costs</td>
</tr>
<tr>
<td>Maintenance and repair costs</td>
</tr>
<tr>
<td>Cost of consumables (printing, cleaning, stationery, electrical equipment)</td>
</tr>
</tbody>
</table>
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 RSUD Wangaya Kota Denpasar Tahun 2020

DISCUSSION

Existing Tariff Differences

Based on this research, it can be seen that the tariff charged by the Wangaya Regional Hospital, Denpasar City is IDR. 990,000. Determining the tariff for this Hemodialysis procedure uses the real cost method. In general, the results of the real cost method analysis are used to determine the cost of products/services, control costs (related to the budget), make decisions, and identify cost accounting systems.

Table 4. 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

<table>
<thead>
<tr>
<th>No</th>
<th>Document</th>
<th>NILAI (Rupiah)</th>
<th>Analisyst</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Hospital Rates</td>
<td>INA-CBG’s Rates</td>
</tr>
<tr>
<td>2</td>
<td>2019 Financial Operational Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BPJS claim income</td>
<td>7,290,652,58</td>
<td>6,211,632,51</td>
</tr>
<tr>
<td></td>
<td>General income</td>
<td>21,621,000</td>
<td>21,621,000</td>
</tr>
<tr>
<td></td>
<td>Total income</td>
<td>7,312,273,58</td>
<td>6,233,253,51</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Direct cost</td>
<td>6,758,410,03</td>
<td>6,758,410,03</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on the calculation of the 2020 HD operational report using the real cost method based on the INA-CBG Tariff, a report of total income minus total HD costs for 2020 minus Rp. 872,645,844 with a percentage of 114%, meaning that the total HD costs exceed the total HD income in 2020 by 14%, while based on the calculation of the 2020 HD operational report using the real cost method based on Hospital Tariffs, the total income report minus the total HD costs in 2020 is a surplus. amounting to Rp. 206,374,230 with a percentage of 97%, meaning that HD's total revenue exceeds HD's total costs in 2020 by 3%.
Table 5. 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

<table>
<thead>
<tr>
<th>No</th>
<th>Document</th>
<th>NILAI (Rupiah)</th>
<th>Analisys</th>
<th>NILAI (Rupiah)</th>
<th>Analisys</th>
<th>NILAI (Rupiah)</th>
<th>Analisys</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Document</td>
<td>Hospital Rates</td>
<td>INA-CBG's Rates</td>
<td>Selisih</td>
<td>Analisys</td>
<td>NILAI (Rupiah)</td>
<td>Analisys</td>
</tr>
<tr>
<td>1</td>
<td>Laporan Keuangan per unit</td>
<td>990,000</td>
<td>887,100</td>
<td>-102,900</td>
<td>INA-CBG's income is used based on BPJS tariff payment claims</td>
<td>990,000</td>
<td>887,100</td>
</tr>
<tr>
<td>b</td>
<td>Biaya</td>
<td></td>
<td>INA-CBG's income is used based on BPJS tariff payment claims</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biaya Langsung</td>
<td>905,076</td>
<td>905,076</td>
<td>Direct costs are costs that are directly used for HD services, namely registration fees, mandatory HD drug packages &amp; medical consumables, labor costs, service fees, electricity costs, water costs, maintenance and repair costs, costs of consumables (printing, cleaning, stationery, electrical equipment), waste costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biaya Tidak langsung</td>
<td>49,192</td>
<td>49,192</td>
<td>Direct costs are costs that are directly used for HD services, namely registration fees, mandatory HD drug packages &amp; medical consumables, labor costs, service fees, electricity costs, water costs, maintenance and repair costs, costs of consumables (printing, cleaning, stationery, electrical equipment), waste costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Biaya</td>
<td>954,268</td>
<td>954,268</td>
<td>The sum of direct and indirect costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Total revenue minus expenses</td>
<td>35,732</td>
<td>-67,168</td>
<td>-102,900</td>
<td>Represents the remaining total income minus costs per unit/patient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage ( % )</td>
<td>96%</td>
<td>108%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Data RSUD Wangaya Kota Denpasar Tahun 2020

1. Based on the HD unit cost calculation using the real cost method based on the INA-CBG Tariff, where the total income per unit is IDR. 887,100 While the total cost per unit is Rp. 954,268 so that the total income minus total costs per unit is minus 67,168 with a percentage of 108%, meaning that the total HD costs per unit exceed HD income per unit by 8%.

2. Based on HD unit cost calculations using the real cost method based on Hospital Tariffs, where the total income per unit is IDR. 990,000 While the total cost per unit is Rp. 954,268 so that the total income minus total costs is a surplus of 35,732 with a percentage of 96%, meaning that the total HD income per unit exceeds the total HD costs per unit by 4%.
3. Based on the table above, the rate for Wangaya Hospital, Denpasar City is IDR. 990,000 while INA CBG's tariff is Rp. 887,100, the difference between the two rates is Rp. 102,900. Based on the data above, it can be analyzed that the hospital rates are greater than INA CBG's rates, this means that Wangaya Hospital experienced a loss of Rp. 102,900, where the hospital must bear the difference in tariff because INA BCG's (BPJS) tariff only pays Rp. 887,100.

CONCLUSIONS AND RECOMMENDATIONS

Based on the calculation of the 2020 HD operational report using the real cost method based on the INA-CBG Tariff, a report of total income minus total HD costs for 2020 minus Rp. 872,645,844 with a percentage of 114%, meaning that the total HD costs exceed the total HD income in 2020 by 14%, while based on the calculation of the 2020 HD operational report using the real cost method based on Hospital Tariffs, the total income report minus the total HD costs in 2020 is a surplus amounting to Rp. 206,374,230 with a percentage of 97%, meaning that HD's total revenue exceeds HD's total costs 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 income per unit is IDR. 887,100 While the total cost per unit is Rp. 954,268 so that the total income minus total costs per unit is minus 67,168 with a percentage of 108%, meaning that the total HD costs per unit exceed HD income per unit by 8%

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

Of the cost components that can be streamlined are additional direct costs for non-mandatory drugs, general medical BHP costs, laboratory costs because not all patients use the drug or examination, registration costs because they can get subsidies from other units

For RSUD Wangaya Kota Denpasar
This hemodialysis examination consists of HD and poly HD services. It is recommended that in the future HD services have their own management because calculating indicators related to HD examinations is difficult and requires time to sort the data because the data is still incorporated into the hospital management system.

ADVANCED RESEARCH

Future researchers are expected to be able to carry out more in-depth research, such as research from a financial perspective, namely the supply of HD drugs as of 31 December 2020 amounted to Rp. 6,247,542 are classified as not meeting the standard guidelines for preparing drug needs 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 HD drug use the average per month in 2020 is IDR. 327,898,000 so HD supplies as of 31 December 2020 do not yet meet standards.

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