

Comparison the Unit Cost of Hemodialysis Service with Dialysis Service's Tariff in INA CBGs Universal Health Coverage Programme (JKN): Case Study Hemodialysis Clinic in Depok

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Abstract: Comparing the hemodialysis service unit costs calculated by activity-based costing method with INA CBG tariff for dialysis service in the National Health Insurance Program (JKN). Data was taken from a hemodialysis clinic that was the provider of the JKN program in the Depok area. Calculation of the unit cost of hemodialysis services uses the activity-based costing method. This method was started by tracking all hemodialysis service activities. The direct and indirect costs of each service activity were traced. The data used are primary data obtained from interviews with leaders and clinical finance officers, and secondary data obtained from clinical, operational records, both financial and non-financial records. The results of unit cost calculations will be compared with the tariff dialysis service in INA CBGs. The results showed that the unit cost of hemodialysis services using the activity-based costing method was lower than the tariff of dialysis service in INA CBGs. The results of this study it is used to trace costs and make efficiency in order to reduce service costs so that real profits can be increased from hemodialysis services

1 INTRODUCTION

The Universal Health Coverage Programme (JKN) organised by the Health Insurance Administration Agency (BPJS) began to be implemented on January 1, 2014. The goal of the JKN program is to fulfil the proper public health needs and are given to everyone who is registered and has paid contribution, or the contributions are paid by the government (PMKRI 28, 2014; Noviatry LW, 2016).

In the JKN Program, BPJS Kesehatan collaborates with first-rate and advanced health services both government and private. Payment system for JKN organisers' health services using two ways; by capitation and INA CBGs. Capitation payment is for the primary health services, while payment by INA CBGs is for the advanced health services (PMRK 28, 2014).

INA CBGs is a system for determining health care rates that use the case-mix system is a grouping of diagnoses and procedures by referring to similar/similar clinical features and similar/similar use of resources/ maintenance costs. The grouping is done using grouper software. The amount of INA CBG tariff is influenced by the class of hospital or

health service and regionalisation, which is where the location of the health service is located (PMKRI 27, 2014).

The problem that arises is that INA CBG tariff is sometimes not in accordance with the real costs incurred in the services provided. This happens a lot in hospital services such as in surgical and non-surgical cases, besides that it is also influenced by the use of drugs, consumables and medical equipment as well as treatment classes (Sari RP, 2014; Rayahuningrum IO, Tantomo D, Suryono A 2016).

Hemodialysis services are health services included in the payment system using INA CBGs. This service can be done in a hospital and at a special hemodialysis clinic. Febriani (2016) in his study found that the real costs incurred for hemodialysis services at the Medika Stania Hospital in Bangka were higher than the rates of INA CBGs paid. This is mainly because the overhead costs are still high and there are not enough hemodialysis patients (Febriani, 2016).

Hemodialysis services not only in hospitals, there are now many hemodialysis clinics that serve JKN patients with the INA CBGs payment system. To find out the ratio of costs incurred with the INA CBGs

tariff for hemodialysis services in the clinic, so the real unit cost calculation is carried out with the tariff of INA CBGs in a hemodialysis (HD) clinic in the Depok area. Real unit cost calculation uses the Activity Based Costing (ABC) method, where this method is an ABC cost calculation focusing on activities carried out to produce a product or service. The ABC method provides information about the activities and resources needed to carry out these activities (Rumumpuk MS, 2013). The ABC method was developed to accommodate various shortcomings of traditional calculation methods, where the ABC method can be to allocate a suitable cost driver for any activity, and to calculate the cost price according to the activity (Javid M, Hadian M, Ghaderi H, Gaffari S, Salehi M, 2106). This method will get a summary of the costs of the organisation of activities by providing more detailed cost information about health service activities so that it is seen which activities require large costs and are considered for efficiency measures (Kazemi Z, Zadeh AH, 2015).

2 METHOD

This research is a descriptive study in which the cost calculation uses the Activity Based Costing method. This calculation begins by tracing the activities that occur in hemodilysis services from start to finish. After the activity is obtained, the time for each activity is calculated. Percentage of time each of these activities will be the cost driver of overhead costs or indirect costs. For direct costs traced directly for each time service hemodialysis.

This study use data from January to December 2018 including financial data and non-financial transactions. Direct cost data is the cost of medicines and consumables used for each hemodialysis procedure and doctor's fee for each patient consultation. While indirect costs are overhead costs, including investment depreciation costs, employee salaries, consumables, utilisation costs, maintenance costs and others. Charging depreciation of the building for 5 years, while electronic equipment and furniture are depreciated for 5 years. Calculation of depreciation costs using the straight-line method.

The total clinical overhead costs for a year will be charged to each activity using the percentage cost driver for each activity. Then the activity costs will be divided by the number of hemodialysis actions carried out during 2018 so the overhead or indirect costs of activity is measured. Finally, this cost is added to the direct cost of hemodialysis measures, such as the cost of drugs and medical supplies and the

of a doctor's services fee. This sum of indirect costs and direct costs results in unit costs for hemodialysis services.

Interviews were conducted with clinic managers to find out operational policies at this clinic, such as investment depreciation policies, provisions on the use of hemodialysis tools and others.

3 RESULT AND DISCUSSION

3.1 The Activity of Hemodialysis (HD)

Based on interviews with managers of clinic HD and observations of HD service actions starting from the beginning to completion there are several activities and the time needed for each activity as follows:

Table 1: HD Service Activity in 2018.

HD Activity	Time	Percentage
Registration	5 minutes	2 %
Doctor Anamnesa	5 minutes	2 %
HD service	240 minutes	96%
Total	250 minute	100%

The percentage of HD service time that will be used as a cost driver to share indirect cost of the HD service.

3.2 Direct Cost of HD Services

Direct costs are costs incurred due to the occurrence of the service, otherwise if there is no service, then these costs do not arise. In the case of HD service, for 1 time HD service uses a fixed amount of a package of drugs and medical supplies. In addition, there is a fee for the doctor who performs the examination and supervision during HD service. The direct costs are:

Table 2: Direct Cost for Each HD Service in 2018.

Direct Cost	Rp
Package of drugs & medical supplies	335,828,-
Doctor fee	55,000,-
Total Cost	390,828,-

Based on the table above, direct costs for 1 time HD action amounting to Rp 390,828, - which consists of the cost of the package of drugs and medical supplies. The size of the drug package and the cost of consumables are greatly affected by the number of times the dialyser is reused. The more frequently used

again, the smaller direct costs will be. In medical supplies there is a disposable tool called a dialyser. This tool can be reused several times. The more frequently used again, the lower the cost of medical supplies. For the amount of drug packages and medical supplies above is for the use of dialysers 5 times.

3.3 Indirect Cost of HD Services

According to the manager of clinic HD that the building used is not its own, but is rented for 5 years and will be extended after 5 years. There are 7 units Hemodialysis instrument in this clinic and all of them is loaned with an Operational Cooperation Agreement (OCA), while other equipment such as medical equipment, furniture and electronics are investment.

In addition to investment depreciation costs, costs which are indirect costs are electronic depreciation costs, medical device depreciation and 5-year, depreciation of the meubeler, employee salary costs, utilisation costs, maintenance costs and other consumable costs. All costs calculated are transactions that occurred in 2018. Details of indirect costs can be seen in the following table:

Table 3: Indirect Cost for HD Service in 2018.

Cost	Number	Rp
Depresiasi Inv.		
- Clinic Building	1 unit	25,704,500,-
- AC Split	5 unit	1,070,000,-
-Medical Instrument	total	9,534,000,-
- Meubeler	total	2,587,600,-
- Computer+Printer	3 set	2,480,000,-
- LCD TV 50"	1 unit	1,960,000,-
Salaries		
- Manager	1 prs	79,625,000,-
- Nurse	4 prs	213,200,000,-
- Marketing Officer	1 prs	46,150,000,-
- Registration Officer	1 prs	37,050,000,-
- Nurse Aid	1 prs	27,300,000,-
- Cleaning Service	1 prs	20,410,000,-
Other Cost		
Electricity		45,102,864,-
- Internet		6,000,000
- Consumables		4,476,000,-
- Food and Beverage		6,300,000,-
- Office Stationery		3,042,000,-
- Maintenance		4,227,720,-
Total Cost		561,219,684,-

The indirect costs incurred by HD clinics during 2018 are Rp. 561,219,684. This cost will be allocated to each HD service activity using the percentage of time for each activity. The total indirect costs for each activity for a year are as follows:

Table 3: Indirect Cost Allocated to HD Activity.

HD Activity	Indirect Cost	Cost Driver	Cost/year
Registration	Rp 561,219,684,-	2 %	Rp 11,224,394
Doctor Anamnesa	Rp 561,219,684,-	2 %	Rp 11,224,394
HD Service	Rp 561,219,684,-	96%	Rp 538,770,896

Table 4 shows the amount of indirect cost for each activity during 2018. To get the indirect cost of one time the HD service, must be divided by the number of HD service in 2018. Based on HD service records in 2018, the number of HD service are 2,072 services, so that the indirect cost for one time HD service is as follows:

Table 5: Indirect Cost Allocated to Each HD Activity.

HD Activity	Indirect Cost	HD Service in 2018	Indirect Cost/ Serv
Registration	Rp 11,224,394	2,072	Rp 5,417,-
Doctor Anamnesa	Rp 11,224,394	2,072	Rp 5,417,-
HD Service	Rp 538,770,896	2,072	Rp 260,025,-
Total Indirect Cost Each HD Service			Rp 270,859,-

The unit cost calculation of HD services using the ABC method is to add up the direct costs incurred in the activities and indirect costs for one HD action as obtained above. The HD services unit costs can be seen in the following table:

Table 6: Unit Cost HD Service with ABC Method.

Direct Cost	+ Indirect Cost	= Unit Cost
Rp 390,828,-	+ Rp 270,859,-	= Rp 661,687,-

Table 6 shows that for 1 time the HD service requires direct costs and indirect costs of Rp. 661,687. Based on interviews with HD clinic managers that the

HD clinics are in the category of primary referral clinics at the level of type D hospitals and are in regional 1 according to Permenkes RI RI no 64 2016. For this reason, payments received by these HD clinics use INA CBGs tariff code is N-3.15.0 (Dialysis Procedure) and the tariff is Rp. 737,700, - for 1 time HD service (PMKRI 64, 2016).

Compared to the unit cost calculated using the ABC method on HD services at the HD clinic, it was obtained at Rp 661,687, with the INA CBGs rate applicable to this clinic at Rp 737,700, -. The profit of Rp 76,013 was still obtained for each time HD. Whereas the profit during 2018 was 2,072 HD services multiplied by Rp 76,013, - equal to Rp 157,498,936.

There are the differ results from Febriani (2016) for hemodialysis services in the Medika Stania Hospital in Bangka where real costs were higher than the INA CBGs tariff paid. This is mainly because overhead costs are still high and the number of hemodialysis patients has not been large (Febriani, 2016). Kalhor et al (2016) find that unit costs calculated using the ABC method in the radiology department at a hospital in Iran are higher than the rates determined by the ministry of health. Noer (2016) in his research at Charitas Hospital Palembang found that cost inefficiencies occur in employee salary costs and maintenance costs. This causes the high cost of HD services at the hospital (Rusli NT).

According to Febriani (2016) that in addition to fairly high employee costs, the thing that causes unit costs to be high is the selection of Operational Cooperation for HD devices with certain more expensive brands. This is because the obligation to purchase medical consumables used in HD services has been determined by the Operational Cooperation Agreement (OCA). The use of disposable dialysers is also the factor that causes the high cost of HD services in Medika Stania Hospital, Bangka. The results of interviews with HD clinic managers that OCA is done not with expensive companies brand, so that the cost of medical supplies is not too high. On the other hand the use of dialysers 5 times is also enough to reduce the cost of HD services at the clinic, so the unit costs are lower than the INA CBGs tariff for HD services.

4 CONCLUSION

Calculation of HD service unit costs in HD clinics in Depok area using the ABC method found that the unit cost was Rp. 661,687, -. This result is lower than the INA CBGs tariff for HD services received by the clinic of Rp. 737,700. When compared to other

services which turned out to be a higher unit cost than JKN tariffs, this was due to, among other things, Operational Cooperation Agreement with not an ordinary brand companies so the price of consumable medical materials that had a lower price compared to expensive brands. The use of dialysers 5 times can reduce costs so that the direct costs are lower than the INA CBG rates for HD services.

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