

## Analysis of Determining Inpatient Room Rates Using The Activity Based Costing Method

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### ABSTRACT

This study aims to determine the determination of inpatient room rates using the Activity Based Costing method at the Binjai Army Hospital and to determine the comparative difference in the amount of inpatient room rates at the Binjai Army Hospital using traditional cost accounting systems and Activity Based Costing. This research approach is comparative descriptive research. The research results show that calculating room rates using the Activity Based Costing method is carried out with several stages of activity identification, cost classification based on activity, identification of cost drivers, determination of rates per cost driver. The results of the comparison of determining room rates at the Binjai Army Hospital using the traditional method and Activity Based Costing showed different results in each room, where in the VIP and Class 1 room types the calculation using the Activity Based Costing method turned out to produce cheaper rates, whereas in calculating room rates using the ABC method for class II and class III room types produces more expensive calculations.

**Keywords:** Activity Based Costing; Room Rates

## **INTRODUCTION**

In calculating rates for inpatient rooms in a hospital on the basis of unit costs, the basic price determination no longer reflects specific activities because many cost categories are indirect. Unit cost calculations are carried out separately for each type of inpatient class. The calculation method is by adding up fixed costs, variable costs and semi-variable costs to produce total costs. Then the total cost is divided by the number of inpatient days. However, in its development, traditional cost accounting systems cannot provide accurate information (Sumilat, 2013). Product costs generated by traditional cost accounting systems provide distorted cost information. This distortion also results in undercost/overcost of the product (Mowen & Minor, 2012). The problem of cost distortion can be avoided by using a cost accounting method that focuses on activities, namely the Activity Based Costing method. Activity Based Costing is an approach to determining product costs that assigns costs to products or services based on resource consumption by activities (Rudianto, 2013).

The Activity Based Costing (ABC) method is highly recommended as a method for calculating rates for inpatient services in hospitals, because it uses cost drivers based on activities that cause costs, so it is able to allocate costs to each activity in each room used to support services. appropriate inpatient services based on the consumption of each activity that causes costs (Kaunang & Walandouw, 2015). To control costs, hospitals need an appropriate accounting system, especially costing calculation methods to produce accurate cost information regarding the costs of their service activities. So far, hospitals in determining their basic prices have only used the traditional cost system (Kaunang & Walandouw, 2015) (Kaunang and Walandouw, 2015). Traditional cost accounting systems are not suited to diversification or high product diversity. According to (Hidayat et al., 2021) the weakness of the traditional cost accounting system is that the costs charged are only product costs, such as development, research and marketing costs, distribution costs and customer service costs are not charged cost of goods sold. Based on the results of pre-research conducted by researchers on public relations and finance at the Binjai Army Hospital, information was obtained that the Binjai Army Hospital calculated its inpatient room rates using traditional calculations. Traditional calculations are calculations made on the basis of unit costs and carried out separately for each type of inpatient class. The calculation method is by adding up fixed costs, variable costs and semi-variable costs to produce total costs. Then the total cost is divided by the number of inpatient days. However, in its development, traditional cost accounting systems cannot provide accurate information (Sumilat, 2013).

## **LITERATURE REVIEW**

the Activity Based Costing method is defined as a cost calculation system in which more than one overhead cost pool is allocated using a basis that includes one or more factors that are Non-Volume Related Factor (Priyono et al., 2021). The Activity Based Costing method is a cost calculation method, where overhead costs are not charged evenly to all products or services produced (Rialdy, 2011). Activity Based Costing is an approach to determining product costs that assigns costs to products or services based on resource consumption by activities (Rudianto, 2013). the aim of Activity Based Costing is to allocate costs to transactions from activities carried out in an organization and then allocate these costs appropriately to products according to the product's loyal activity usage (Melinawati & Diana Gustiny, 2019). The benefits of Activity Based Costing are improving the quality of decision making, providing activity-based cost information so that it allows management to carry out activity-based management and continuous improvement of activities to reduce factory overhead costs (Fadhila & Chintya Maramis, 2020)

cost drivers as a basic activity that can be found directly in the units produced and used as a factor causing overhead costs (Waleny & Basri, 2016). Cost drivers are used to

calculate source costs for each unit of activity. Then each resource cost is assigned to the product or service by shifting activity costs to the quantity of each activity that can be consumed in a certain period. Intangible output in service companies makes calculations difficult. The use of the ABC method can still be applied to service companies to obtain accurate cost information. According to (Agustami & Dedi Irawan, 2014) the things that need to be considered when implementing the Activity Based Costing method in service companies are:

- a. Identifying and Costing Activities  
Identifying and rewarding activities can open up several opportunities for efficient operations.
- b. Challenger Special  
The difference between service and manufacturing companies will have similar problems. Problems such as the difficulty of allocating costs to activities. Apart from that, services cannot be an inventory, because existing capacity that cannot be used results in unavoidable costs.
- c. Output Diversity  
Service companies also have difficulties in identifying existing outputs, in service companies diversity which describes supporting activities on different things may be difficult to explain or determine.

## **RESEARCH METHOD**

This research approach is comparative descriptive research, compare it with the conditions, situations or variables applied by the research object, so that later it can be used as a basis for determining rates for inpatient services at the Binjai Army Hospital. In this research, the type of data used is quantitative data. Data analysis techniques in implementing Activity Based Costing (ABC) in this research are as follows:

1. Identify activities
2. Classify activity-based costs into various activities
3. Identify cost drivers
4. Determine the rate per unit cost driver
5. Assign costs to products using cost driver rates and activity measures
  - a. Assignment of overhead costs from each activity to each room
  - b. Then calculate the rates for each room type using the Activity Based Costing method
6. Compare the calculation of inpatient service rates based on the traditional cost accounting system with the Activity Based Costing (ABC) method

## **RESULTS**

### **1. Calculation of Hospital Inpatient Room Rates Using the ABC Method.**

The purpose of Activity Based Costing is to allocate costs to transactions from activities carried out in an organization and then allocate these costs appropriately to products according to the product's loyal activity usage. The benefits of Activity Based Costing are improving the quality of decision making, providing activity-based cost information so that it allows management to carry out activity-based management and continuous improvement of activities to reduce factory overhead costs.

Meanwhile, in determining room rates at the Binjai Army Hospital, the traditional system is still used by relying on unit costs or per costs units of expenditure alone without paying attention to other related activities, calculating room rates using the ABC method is carried out with several stages of activity identification, cost classification based on activity, identification of cost drivers, determination of rates per cost driver.

The results of calculating inpatient room rates using the Activity Based Costing method were carried out for VIP, Class I, Class II and Class III room types. The following is the

calculation of inpatient room rates using the Activity based costing method for VIP room types:

**Table 1** Inpatient Room Rates for VIP Room Types

Activity	Cost Driver Rates	Amount of Cost Driver	Total
Nurse & doctor salaries expense	141.797	566	Rp. 80.257.102
Electricity expense	15.119	566	Rp. 8.557.354
water expense	12.009	566	Rp. 6.797.094
Consumption expense	87.289	566	Rp. 49.405.574
Cleaning expense	151.151	180	Rp. 27.207.180
administrative expense	10.624	340	Rp. 3.612.160
consumables expense	18.608	566	Rp. 10.532.128
Laundry expense	7.068	566	Rp. 4.000.488
Depreciation Expense Of Building	9.808	566	Rp. 5.551.328
Depreciation Expense Of facility	8.664	566	Rp. 4.903.824
Total cost for VIP room type			Rp. 195.824.232
Number of days of use			566
Inpatient costs per room			Rp. 345.979
60% laba			Rp. 207.587
Amount tarif			Rp. 553.566

**Table 2** Inpatient Room Rates for Class I Room Types

Activity	Cost Driver Rates	Amount of Cost Driver	Total
Nurse & doctor salaries expense	141.797	2.087	Rp. 295.930.339
Electricity expense	15.119	2.087	Rp. 31.553.353
water expense	12.009	2.087	Rp. 25.062.783
Consumption expense	87.289	2.087	Rp. 182.172.143
Cleaning expense	151.151	160	Rp. 24.184.160
administrative expense	10.624	518	Rp. 5.503.232
consumables expense	18.608	2.087	Rp. 38.834.896
Laundry expense	7.068	2.087	Rp. 14.750.916
Depreciation Expense Of Building	9.808	2.087	Rp. 20.469.296
Depreciation Expense Of facility	8.664	2.807	Rp. 24.319.848
Total costs for class I room types			Rp. 642.311.670
Number of days of use			2.087
Inpatient costs per room			Rp. 307.768
10% laba			Rp. 30.777
Amount tarif			Rp. 338.545

**Table 3.** Inpatient Room Rates for Class II Room Types

Activity	Cost Driver Rates	Amount of Cost Driver	Total
Nurse & doctor salaries expense	141.797	4.586	Rp. 650.281.042
Electricity expense	15.119	4.586	Rp. 69.335.734
water expense	12.009	4.586	Rp. 55.073.274

Consumption expense	87.289	4.586	Rp.	400.307.354
Cleaning expense	151.151	200	Rp.	30.230.200
administrative expense	10.624	1.193	Rp.	12.674.432
consumables expense	18.608	4.586	Rp.	85.336.288
Laundry expense	7.068	4.586	Rp.	32.413.848
Depreciation Expense Of Building	9.808	4.586	Rp.	44.979.488
Depreciation Expense Of facility	8.664	4.586	Rp.	39.733.104
Total costs for class II room types			Rp.	1.420.364.764
Number of days of use				4.586
Inpatient costs per room			Rp.	309.718
5% profit			Rp.	15.486
Amount tarif			Rp	325.204

**Table 4.** Inpatient Room Rates for Class II Room Types

Activity	Cost Driver Rates	Amount of Cost Driver	Total	
Nurse & doctor salaries expense	141.797	10.728	Rp.	1.521.198.216
Electricity expense	15.119	10.728	Rp.	162.196.632
water expense	12.009	10.728	Rp.	128.832.552
Consumption expense	87.289	10.728	Rp.	936.436.392
Cleaning expense	151.151	260	Rp.	39.299.260
administrative expense	10.624	2.805	Rp.	29.800.320
consumables expense	18.608	10.728	Rp.	199.626.624
Laundry expense	7.068	10.728	Rp.	75.825.504
Depreciation Expense Of Building	9.808	10.728	Rp.	105.220.224
Depreciation Expense Of facility	8.664	10.728	Rp.	92.947.392
Total costs for class III room types			Rp.	3.291.383.116
Number of days of use				10.728
Inpatient costs per room			Rp.	306.803
30% profit			Rp.	92.040
Amount tarif			Rp	398.843

## 2. Difference in comparison of hospital inpatient room rates with Inpatient Room Rates Using the ABC Method.

Comparison of Hospital Inpatient Room Rates with Inpatient Room Rates Using the ABC Method.

**Table 5** Comparison of Hospital Inpatient Room Rates with Inpatient Room Rates Using the ABC Method

Type of Room	Hospital Rates	ABC Method Rates	Difference	Comparison Results
VIP	Rp. 500.000	Rp. 553.566	(Rp. 53.566)	Preponderance
Room I	Rp. 375.000	Rp. 398.843	(Rp. 23.843)	Preponderance
Room II	Rp. 275.000	Rp. 325.204	(Rp. 50.204)	Preponderance
Room III	Rp. 200.000	Rp. 322.143	(Rp. 122.143)	Preponderance

## DISCUSSION

The calculation results for VIP type inpatient room rates using the Activity Based Costing method are IDR. 397,876. This rate is obtained from calculating the total cost of the VIP room type divided with the number of days of use then added a profit margin of 15% of the inpatient costs incurred for VIP type rooms. The calculation results for class I inpatient room rates using the Activity Based Costing method are IDR.338,545. This rate is obtained from calculating the total cost of room type I divided by the number of days used and then adding a profit margin of 10% of the inpatient costs incurred for class I room types. The results obtained for calculating the rate for class II inpatient rooms using the Activity Based Costing method are Rp.553,566. This rate is obtained from calculating the total cost of room type II divided by the number of days used, then adding a profit margin of 60% of the inpatient costs incurred for class II room types, because the costs incurred are quite large so it is necessary to mark up a larger profit margin. The calculation results for class III inpatient room rates using the Activity Based Costing method are Rp. 398,843. This rate is obtained from calculating the total cost of room type III divided by the number of days used and then adding a profit margin of 30% of the inpatient costs incurred for class III room types.

Based on the calculations in the table 5, it can be seen that the results of calculating inpatient room rates using the Activity Based Costing method for VIP room types are IDR. 553,566, class I Rp. 338,545, class II Rp. 325,204, class III Rp. 322.143. From the results obtained, the difference in the price of inpatient room rates that has been determined by the management of the Binjai Army Hospital can be compared with the results of calculations using the Activity Based Costing approach.

The Activity Based Costing method for VIP and Class I room types provides calculation results that are greater than the rates determined by the hospital, namely the price difference for the VIP room type is IDR. 53,566, class I Rp. 23,843. Calculation of room rates using traditional rates turns out to be smaller than the activity based costing method, in the calculations for the two rooms, namely class VIP and class I, a profit margin mark up on costs is carried out, namely 60% and 30%, this is done because patients are in the VIP and class room types. I at the Binjai Army Hospital is smaller than class II and class III rooms, so the supporting data used as a basis for calculating the number of days used for rooms in class VIP and class I is also lower, so that when converted to calculations using activity based costing it also becomes higher. a small amount of the room rate set by the Binjai Army Hospital.

The difference in price in room rates is due to differences in overhead costs for each product. In the traditional cost accounting method, overhead costs for each product are only charged to one cost driver, this results in a tendency for errors in cost assignment (distortion). Meanwhile, in the Activity Based Costing method, overhead costs for each product are charged to many cost drivers so that in the ABC method, we are able to allocate activity costs to each room appropriately based on the consumption of each activity, namely: number of inpatient days, number of patients, area. floor where the selection of cost drivers is carried out in accordance with the forming activities. So that the calculation of the cost price and selling price is more precise and accurate. Can makes it easier for financial data users such as managers to make the right decisions in controlling costs for service operational systems and evaluating the performance of hospital managers. The Activity Based Costing method does not guarantee that the results will be cheaper, but the ABC method can only guarantee the avoidance of undercosting/overcosting. This is in line with research which states that room prices using the traditional system are lower for all types of rooms, both premium, deluxe and triple, compared to using the activity based costing method (Yudha et al., 2022).

## **CONCLUSION**

Based on the results of research and discussions carried out by researchers at the hospital. Binjai Army, the conclusions that can be drawn are Calculation of room rates

using the ABC method is carried out with several stages of activity identification, cost classification based on activity, identification of cost drivers, determination of rates per cost driver. The results of a comparison of determining room rates at the Binjai Army Hospital using the traditional and ABC methods showed that calculations using the ABC method resulted in more expensive calculations for inpatient room rates in all classes.

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## **DECLARATION OF CONFLICTING INTERESTS**

The author has no conflict of interest in writing this article

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