

# **AN APPLICATION OF ACTIVITY BASED COSTING METHOD AS ALTERNATIVE TO PRICES LAPARATOMY IN HOSPITAL THE TRUE PARTNER OF MEDAN**

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## **ABSTRACT**

Ileus is an occlusion or paralysis of the intestine that prevents the forward passage of intestinal contents, causing accumulation proximal to the site of the blockage. The problem of cost distortion can be avoided by using an activity-focused cost accounting method, namely the ABC (Activity-Based Costing) method. The ABC method uses more cost drivers than traditional cost accounting methods. The purpose of this study was to determine the application of the activity-based costing method as an alternative to laparotomy rates at Mitra Sejati Hospital Medan. The real cost of laparotomy with a diagnosis of obstructive ileus at Mitra Sejati General Hospital Medan is Rp. 26,875,905.00. There is a difference in the cost of a laparotomy with a diagnosis of obstructive ileus with a unit cost using the activity-based costing method and using real cost calculations at Mitra Sejati General Hospital Medan in 2020 with a cost difference of Rp. 2,804,156.3.

**Keywords:**Laparotomy, Obstruction Ileus, Activity Based Costing, Real Cost

## **INTRODUCTION.**

The hospital is an organization that through organized professional medical personnel and permanent medical facilities provides medical services, continuous care, diagnosis, and treatment of diseases suffered by patients (Zefri, 2016).

Meanwhile, in the National Health System, it is stated that hospitals have the main function of providing health care that is healing and recovering patients and providing services that are not limited to in-hospital care, but also provide outpatient services, as well as care outside the hospital. (2018).

Obstructive ileus is a frequently reported emergency in digestive surgery. Gastrointestinal disorders account for 20% of all cases of acute abdominal pain that are not classified as acute appendicitis. About 60% of the causes of obstructive ileus are caused by adhesions that occur after surgery in the abdominal region and surgery in the field of obstetric gynecology (Paulson, 2016). The incidence of obstructive ileus in 2011 is known to reach 16% of the world's population which is known through large studies of many populations. Gastrointestinal diseases are included in the top 10 diseases that cause death in the world. In Indonesia, gastrointestinal disease ranks as the 5th leading cause of death in 2008 with a mortality rate of 6,825 people and a Case Fatality Rate (CFR) of 2.91% (Kezia, 2020).

By definition, an ileus is an occlusion or paralysis of the intestine that prevents the forward passage of intestinal contents, causing accumulation proximal to the site of the blockage (Vilz TO, 2017). Obstruction occurs when the lumen of the intestine becomes partially or completely blocked. Obstruction often causes abdominal pain, nausea, vomiting, constipation, and distension, and prevents the normal movement of digested products (Smith DA, Nehring SM, 2018).

Based on the obstruction, obstructive ileus is divided into high-position obstructive ileus and low-lying obstructive ileus, in addition to intestinal adhesion factors,

several other factors can cause obstruction, one of which is mechanical forces affecting the intestinal wall, thus obstructing the intestinal lumen. As a result of the passage disruption, there is a buildup of the contents of the intestinal lumen in the form of gas and liquid in the proximal part of the blockage (Jacson, 2017).

Clinical features that can be caused as a result of intestinal obstruction can be systemic, including severe dehydration, hypovolemia, oliguric shock, and others. The general danger of this condition is sepsis, toxemia, and even shock that requires immediate action (Fillipone, 2017).

Pharmacoeconomic studies are the process of identifying, measuring, and comparing the costs, risks, and benefits of a service or therapy program and determining alternatives that provide the best health outcomes for the resources used to provide optimal output.*cost-effective*(Indrayathi & Noviyanti, 2016).

To control costs, hospitals need the right method in determining costs so that they can produce accurate cost information by the costs of their service activities because in providing health services, hospitals will earn income from services and facilities offered, one of which is laparotomy services for obstructive ileus, where the income is obtained from the price or tariff that must be paid by the patient. (Fina, 2016)

Pricing for laparotomy services for obstructive ileus in many hospitals still uses traditional cost accounting methods that only use unit-level activity drivers to charge costs, causing problems, because the products produced do not reflect the overall absorbed costs. Things like this will result in distortion of product costs, which in turn will provide misleading information in decision-making by management (Fina, 2016). The problem of cost distortion can be avoided by using an activity-focused cost accounting method, namely the ABC (Activity-Based Costing) method. The ABC method uses more cost drivers than traditional cost accounting methods (Fina, 2016).

The ABC method is highly recommended as a method for calculating the tariff for laparotomy services for obstructive ileus in hospitals, because it uses a cost driver based on activities that cause costs, to be able to allocate costs for each activity in each laparotomy service for obstructive ileus appropriately based on consumption. each activity that incurs costs (Kaunang and Walandouw, 2015).

The researcher took the object of research, namely Mitra Sejati Hospital Medan, where based on a pre-survey conducted by researchers for setting rates or fees for laparotomy services for obstructive ileus still not using the ABC (Activity-Based Costing) method.

## **LITERATURE REVIEW**

### **2.1. Definition Accounting**

Accounting is the art of transactions that have occurred by recording, summarizing, classifying, and reporting. The usefulness of this is to improve the quality of a financial report for the better so that it is useful to users of information in making decisions (Bahri, 2016).

From some of the opinions above, the authors conclude that accounting is a process of identifying, measuring, and processing data to be used as reports that can be informed through communication to decision makers.

According to Lantip Susilowati (2016), each main accounting system will carry out five main functions, namely:

1. Collect and store data from all company activities and transactions.
2. Processing data into useful information for management.
3. Manage existing data into groups - groups that have been determined by the company.
4. Controlling sufficient data control so that the assets of an organization or company are maintained.

5. Information generator that provides sufficient information for management to plan, execute plans and control activities.

Accounting aims to prepare an accurate financial report so that it can be used by managers, policy makers, and other interested parties, such as shareholders, creditors, or owners. Lantip Susilowati (2016)

## **2.2. Definition Financial Management**

Financial management explains about several decisions that must be made, namely investment decisions, funding decisions or decisions to fulfill funding needs, and dividend policy decisions (Musthafa 2017)

Financial management is a combination of science and art that discusses, studies and analyzes how a financial manager uses all company resources to seek funds, manage funds, and distribute funds in order to be able to provide profit or profit and prosperity for shareholders and sustainability. business for the company (Fahmi, 2018)

Financial management, is a science that broadly explores two scopes of activities carried out by company owners, namely: First, getting the cheapest source of capital, this function includes various activities to find, analyze, and decide which sources of capital will be selected and taken as well. how many. Second, using it for investments that can benefit the company, meaning that it is used for effective, efficient and productive investments, this is the company's efforts to generate profits (Wiyono & Kusuma, 2017)

Based on the opinions of the experts described above, it can be concluded that financial management is a combination of science and art by planning, organizing, implementing, and controlling. Broadly speaking, financial management explores two scopes of activities carried out by the owner of the company's management, namely obtaining cheap or low sources of capital and using it for profitable investments in an effort to generate the highest profit for the company.

According to Fahmi (2018), financial management functions for company managers to be used as guidelines in making every decision that will be made. That is, a financial manager is allowed to make an innovation, but not to the point of overriding the rules that have been set in the science of financial management. For example, complying with the rules in SAK (Financial Accounting Standards).

GAAP (General Accepted Accounting Principles), laws and regulations regarding corporate financial management, and so on. In carrying out its duties, financial management has several tasks to achieve its goals. This task (obligation) is carried out in various activities that must first be planned, implemented, supervised and controlled in order to facilitate these goals, as the highest leader of the finance department, the director of finance or financial management is more responsible for this task (Wiyono & Kusuma, 2017 ).

Based on the statements of experts regarding the function of financial management, it can be concluded that financial management has a function as a company guide that is useful for a financial manager in carrying out his duties, then this guideline can be used as a decision-making step in accordance with the applicable rules in financial management so that can achieve the goals that have been set.

## **2.3 Objectives of Financial Management**

The purpose of financial management is to achieve what has become the company's goals, all parties involved in the organization, both the finance, production, marketing, and human resources departments must work together.

Without good cooperation, it will be difficult to achieve company goals. As the spearhead to achieve company goals, financial management has the most interest in the company's financial management and has a fairly heavy task (Ross, Westerfield, Jordan, Lim, & Tan, 2016).

To achieve this goal, financial management has two objectives, namely:

1. Profit risk approach

In this case the financial manager not only optimizes profits, but also has to consider the risks that will be faced. It is not impossible that the hope of getting a large profit cannot be achieved because the risks faced are also large. Not only that, the financial manager must continue to supervise and control all activities carried out in the company. Furthermore, when carrying out its activities, a financial manager must use the precautionary principle. Broadly speaking, the profit risk approach consists of:

- a. Profit maximization
- b. Minimum risk
- c. Maintain control, and
- d. Achieve flexibility (careful management of found and activities)

2) Liquidity and profitability

Is an activity related to the way a financial manager manages the liquidity and profitability of the company. In terms of liquidity, financial managers must be timely in providing funds (cash) to pay debts that have matured. Furthermore, financial managers are also required to be able to manage company finances, in order to increase company profits from day to day. Financial managers are also required to be able to manage their funds, including fundraising and be able to manage company assets so that the company can continue to grow, from time to time.

The objective of financial management is to optimize the current value per share. The purpose of optimizing the value of this stock is done to avoid problems related to different objectives (Ross, Westerfield, Jordan, Lim, & Tan, 2016).

## 2.4. ABC (Activity Based Costing)

*Activity based costing* is a system of cost accumulation and assigning costs to products using various cost drivers, carried out by tracing costs from activities and after that tracing costs from activities to products. (V. Wiratna Sujarweni 2015).

*Activity based costing* System is an activity-based cost information system designed to motivate personnel to reduce costs in the long term through activity management (Mulyadi, 2016).

Some of the benefits and advantages of Activity based costing (ABC) proposed by Mulyadi (2016). The benefits of Activity Based Costing (ABC) for the company's management are:

1. An assessment of the ABC costing system can convince management that they must take a number of steps to become more competitive. As a result, they can seek to improve quality while simultaneously focusing on possible cost reductions. This cost analysis can highlight how really expensive the manufacturing process is, this in turn can spur activities to organize processes, improve quality, and reduce costs.
2. Management will be in a position to make a more reasonable competitive offer.
3. The ABC cost system can assist in making decisions (management decision making) to make-buy what management must do, besides that with a more accurate cost determination, the decisions that will be taken by the management will be better and more precise. This is based on the accuracy of product costing which becomes very important in today's competitive climate
4. Supporting continuous improvement, through activity analysis, the ABC system allows the elimination or improvement of activities that are not value added or less efficient. This is closely related to the problem of company productivity.
5. Facilitate the determination of costs that are less relevant (cost reduction), in the traditional system, many costs that are less relevant are hidden. A transparent ABC system allows the sources of these costs to be identified and eliminated.

6. With improved cost analysis, management piliak can perform a more accurate analysis of the production volume required to break even on low volume products.

## **2.5. Advantages of ABC (Activity Based Costing)**

Some of the advantages of the Activity based costing (ABC) costing system are: stated by Mulyadi (2016) are as follows:

1. More realistic product costs, especially in high-tech manufacturing industries where overhead is a significant proportion of total costs.
2. More and more overhead can be traced to products. In a modern factory, there is a growing number of non-factory floor activities. The ABC cost system analysis itself pays attention to all activities so that the costs of non-factory floor activities can be traced.
3. The ABC cost system recognizes that it is activities that cause costs, not products, and that it is products that consume activities.
4. ABC costing systems focus attention on the real nature of cost behavior and assist in reducing costs and identifying activities that do not add value to the product.
5. The ABC cost system recognizes the complexity of modern production diversity by using multiple cost drivers, many of which are transaction-based rather than product-volume-based.
6. The ABC cost system provides a reliable indication of the long run variable product cost relevant to strategic decision making.
7. ABC costing systems are flexible enough to trace costs to processes, customers, areas of managerial responsibility, as well as product costs.

## **METHOD**

This type of research is a quantitative descriptive study by conducting a case study at Mitra Sejati Hospital, Medan. Descriptive research was conducted to determine the existence of independent variables, either only on one or more variables (stand-alone variables or independent variables) without making comparisons of the variables themselves and looking for relationships with other variables. (Sugiyono, 2017).

In this study, researchers analyzed the efficiency of laparotomy financing in the form of unit costs, carried out using the ABC (Activity Based Costing) method. In this study, the research subjects were all those related to the laparotomy service at Mitra Sejati Hospital Medan. The object of this research is all activities and costs that occur in the laparotomy service at Mitra Sejati Hospital Medan

Meanwhile, the object of research is all activities that occur to produce Laparotomy service products at Mitra Sejati Hospital Medan. The activities in question are all activities that occur in the Laparotomy service.

This research was conducted at Mitra Sejati Hospital Medan which is located at Jl. General Besar AH Nasution No.7, Pangkalan Masyhur, Kec. Medan Johor, Medan City, North Sumatra 20219.

The time of the research will be carried out in September 2021 until its completion.

The population of this study were all patients who underwent laparotomy who were treated at Mitra Sejati Hospital and sample of this study were all patients who underwent laparotomy who were treated at Mitra Sejati Hospital. The inclusion and exclusion criteria are as follows:

### **a. Inclusion Criteria**

The inclusion criteria for the sample of this study were patients who would undergo laparotomy with a diagnosis of obstructive ileus

### **b. Exclusion Criteria**

1. The exclusion criteria for the sample in this study were patients with complications beyond the diagnosis of obstructive ileus

2. The operation stopped before it was finished, because the patient's condition did not allow it to be continued

The data in this study consisted of primary data and secondary data. Primary data is data obtained from interviews directly from the field.

Secondary data is data obtained from searching documents in the form of patient medical records, journals, literature studies and costs incurred from all activities that occur. The variables in this study consist of independent variables and dependent variables, which are included in the independent variable in this study is the application of the activity based costing method and the dependent variable in this study is an alternative to laparotomy rates.

Research instrument is a tool used for data collection at the time of doing research (Sugiyono, 2017). In this study, the research instruments used were writing instruments, recording devices as documentation media, along with several questions that would later be asked to the respondents in this study.

The data analysis technique used in this study is a non-statistical quantitative analysis technique. The data in the form of numbers obtained from Mitra Sejati Hospital which contains the calculations are then analyzed using the theory of ABC Application (Activity Based Costing) in calculations for the application of laparotomy rates at Mitra Sejati Hospital Medan. This analysis is intended to find out how the level of competitiveness of laparotomy rates is when using the Activity based costing system so that later it can be applied as a standard for setting laparotomy rates at Mitra Sejati Hospital Medan.

## **RESULT.**

### **4.1. Research**

*Obstructive ileus* obstruction of passage of intestinal contents caused by mechanical obstruction, for example by strangulation, invagination, or obstruction in the intestinal lumen. In this case, the patient underwent laparotomy. There are 4 methods of laparotomy surgery, namely Midline incision, Paramedian (slightly to the edge of the midline ( $\pm 2.5$  cm), length (12.5 cm), Transverse upper abdominal incision (incision at the top, for example cholecystotomy and splenectomy surgery), and Transverse lower abdominal incision (a transverse incision at the bottom  $\pm 4$  cm above the anterior iliac spine). In laparotomy, there are costs that must be paid by the patient with the following details.

### **4.2. Steps in Calculation of Activity Based Costing (ABC) in Laparotomy with Obstructive Ileus Diagnosis**

The steps for determining tariffs for patients at service companies such as Mitra Sejati Hospital Medan, are generally carried out through several stages, namely identification of activities in each room, classification of activities and costs, identification of cost drivers, determination of rates per unit cost driver, determination of cost per room used, by patients with laparotomy with a diagnosis of obstructive ileus and lastly an analysis of costs for patients with these procedures.

With ABC, hospital overhead costs are assigned to a cost object such as a product or service by identifying the resources needed to produce the output. Cost drivers are used to calculate the resource cost of each unit of activity. Then each resource cost is assigned to the product or service by multiplying the cost of each activity by the quantity of each activity consumed in a given period. Activity based costing is a system that maintains and processes financial and operational data from company resources based on activities, cost objects,

1. Identify each activity
2. Where possible, trace directly to activities and cost objects
3. Assigning costs to each activity

4. Determine the cost driver
5. Assigning costs to cost objects using activity rates (determining the cost of laparotomy with a diagnosis of obstructive ileus)

After going through the stages of the ABC implementation process, the next step is to make a comparison between the rates set by Mitra Sejati General Hospital in Medan and the cost of goods obtained by calculating using the ABC method. Is there a significant difference and whether the use of the ABC method as the basis for determining the rate of laparotomy with a diagnosis of obstructive ileus is the right choice for Mitra Sejati Hospital Medan in the future.

Activity identification. The activities contained in each inpatient unit of Mitra Sejati General Hospital Medan consist of:

- 1) Labor costs.
- 2) Cost of raw materials.
- 3) Building depreciation expense.
- 4) Facility depreciation expense.
- 5) Cleaning fee.
- 6) Building maintenance costs.
- 7) Consumption costs.
- 8) Electricity and water costs.
- 9) Administration fee
- 10) Laundry fee.

These ten activities can then be subdivided into 4 major activities which include:

- 1) Patient care activities such as salaries of health workers.
- 2) Inventory maintenance activities consist of building depreciation costs, facility depreciation costs and cleaning costs.
- 3) Patient maintenance activities, namely consumption costs.
- 4) Patient service activities which include the cost of consumables, electricity and water costs, administrative costs and laundry costs.

The breakdown of salaries for health workers is shown in table 4.1 below:

**Table 1.** Health Personnel Costs at Mitra Sejati Hospital Medan

Power Type	Basic Salary 1 Month (Rp)	1 Month Incentive (Rp)	Operator Rates	Total 1 Month (Rp)	Amount 1 Year (Rp)
General practitioners	3.780.000.00	1,800,000.00		5.580.000.00	66.960.000.00
Surgeon			2,250,000.00		
Anesthetist			1,500,000.00		
Nurse	2.700.000.00			2.700.000.00	32.400.000.00

Source: Primary data at Mitra Sejati General Hospital in Medan

Identify other sources of financing to conduct a unit cost analysis, namely the breakdown of consumables (BHP). BHP in cases of laparotomy with a diagnosis of obstructive ileus in the Emergency Room (IGD) includes the cost of infusion equipment, injection of antibiotics and pain relievers as shown in table 2 below:

**Table 2.** Cost of Laparotomy BHP with a Diagnosis of Obstructive Ileus at the Emergency Room at Mitra Sejati Hospital Medan in 2020

Consumables Name	Length of Days of Care	Amount	Price (Rp)	Amount (Rp)
Ringer Lactate Sanbe	1	1	Rp. 22.000.00	Rp. 22.000.00
Fresco Macro Infuset	1	1	Rp. 6.756.00	Rp. 6.756.00
Abocath 22 Remedi	1	1	Rp. 13.876.00	Rp. 13.876.00
IV Dressing 8 Cm X 6 Cm	1	1	Rp. 3.502.00	Rp. 3.502.00

3 cc syringe (ONEMED)	1	1	Rp. 1,569.00	Rp. 1,569.00
Aquabides 25 ml OTSUKA	1	1	Rp. 3,861.00	Rp. 3,861.00
5 cc syringe (ONEMED)	1	1	Rp. 1.050.00	Rp. 1.050.00
10 cc syringe (ONEMED)	1	1	Rp. 1,800.00	Rp. 1,800.00
Nacl 0.9% Infusion, 500 ml (OGB)	1	1	Rp. 17.000.00	Rp. 17.000.00
Abocath 20 Remedi	1	1	Rp. 8,607.00	Rp. 8,607.00
Abocath 24 Vasflow	1	1	Rp. 11.325.00	Rp. 11.325.00
70% alcohol	1	1	Rp. 147.00	Rp. 147.00
Plastic Apron (Solid)	1	1	Rp. 8,800.00	Rp. 8,800.00
Aquabides 2L SANBE	1	1	Rp. 28.000.00	Rp. 28.000.00
Lodine povidone 1 liter	1	1	Rp. 75.00	Rp. 75.00
Hand skune non sterile uk.L SUWARNA	1	1	Rp. 1.705.00	Rp. 1.705.00
Ultrafix	1	1	Rp. 155.00	Rp. 155.00
ORGAN RAPE MASK	1	1	Rp. 1.755.00	Rp. 1.755.00

#### 4.3. Calculation of Real Hospital Costs in Laparotomy Cases with a Diagnosis of Obstructive Ileus

The calculation of real hospital costs for laparotomy with a diagnosis of obstructive ileus is not much different from the cost

Calculation of Real Hospital Costs for laparotomy with a diagnosis of obstructive ileus. The calculation of the real cost of the hospital in the case of laparotomy with a diagnosis of obstructive ileus after being calculated is Rp. 26,875,905.00 which consists of a registration fee of Rp. 27.500.00, the doctor's check-up fee is Rp. 35,000.00, 3x injection of Rp. 37,000.00, the infusion fee is Rp. 15.000.00, the laboratory fee is Rp. 615,000.00, 5-day ward accommodation costs Rp. 2,250,000.00, ward administration fee of Rp. 145,000.00, the surgeon's visit fee is Rp. 2.750.000.00, the cost of visiting an anesthesiologist is Rp. 70.000.00, moderate wound treatment costs Rp. 15,000.00, the cost of a chest X-ray and ECG is Rp. 290.000.00, the cost of hematology is Rp. 2.550.00, medical equipment fee of Rp. 782,000.00, the cost of medical services for laparotomy with a diagnosis of obstructive ileus with a surgeon is Rp. 10,500,000.00, operating room costs Rp. 2,000,000.00, the cost of medicine and instrument services is Rp. 2,784,000.00, the cost of consumables is Rp. 1,010,405.00 so that the total real cost of laparotomy with a diagnosis of obstructive ileus becomes Rp. 26,875,905.00 who perform maintenance for 5 days.

In calculating the real costs of hospitals, it is indeed much different and not as detailed as in the calculation of unit costs which are calculated based on the activities or actions taken, so that in calculating the real hospital rates it can be seen that the highest cost consumption is pharmaceutical costs, where in the calculation of real home rates hospital costs are higher than pharmaceutical costs in unit cost calculations using the ABC method.

## CONCLUSIONS

Based on the results of research and discussion that have been presented in the previous chapter, it can be concluded that:



1. The unit cost of laparotomy with a diagnosis of obstructive ileus at Mitra Sejati General Hospital Medan using the activity based costing method is Rp. 24,071,748.7
2. The real cost of laparotomy with a diagnosis of obstructive ileus at Mitra Sejati General Hospital Medan is Rp. 26,875,905.00.
3. There is a difference in the cost of laparotomy with a diagnosis of obstructive ileus with unit costs using the activity based costing method and using real cost calculations at Mitra Sejati Hospital Medan in 2020 with a cost difference of Rp. 2,804,156.3.

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