**VitaMedica : Jurnal Rumpun Kesehatan Umum**
**Vol.2, No.4 Oktober 2024**
e-ISSN : 3030-8992, p-ISSN : 3030-900X, Hal 72-85
DOI: https://doi.org/10.62027/vitamedica.v2i4.201
*Available online at:* https://journal.stikescolumbiasiamdn.ac.id/index.php/VitaMedica

# Comparison Between Unit Cost Results of The ABC Method And INA-CBGs Rates For BPJS Patients With Caesarea Sectio Action at Rumah Sakit Graha Sehat Probolinggo

**Susanti Sugianto [1*], Yanuar Ramadhan [2], Erry Yudhya Mulyani [3], Rokiah Kusumapradja [4], Nofierni [5]**
[1-5] Universitas Esa Unggul, Jakarta
Email: sugianto.susanti@student.esaunggul.ac.id [1*], yanuar.ramadhan@esaunggul.ac.id [2], erry.yudhya@esaunggul.ac.id [3], rokiah.kusumapradja@esaunggul.ac.id [4], nofi.erni@esaunggul.ac.id [5]

Address: Jl. Arjuna Utara No.9, Duri Kepa, Kec. Kb. Jeruk, Kota Jakarta Barat, Daerah Khusus Ibukota Jakarta 11510
*Email correspondence: sugianto.susanti@student.esaunggul.ac.id*

***Abstract*****:** *Delivery using the caesarean section method is one of the JKN-KIS services which has experienced a significant increase in cases from year to year at Graha Sehat Probolinggo Hospital. The general tariff applied by the hospital is IDR 10,800,000, which is 206.15%, far above the INA CBGs tariff of IDR 5,238,800, making the hospital feel the need to carry out descriptive quantitative research using the ABC method and DD method. Then the unit cost results of the ABC method are compared with the INA-CBGs rates. The results of this research show that the unit cost of the ABC method is IDR 5,484,214, which is IDR 245,414 (4.68%) greater than the INA-CBGs tariff. The potential efficiency that can be achieved results in savings of IDR 665,295 so it is hoped that the unit cost of the ABC method will be IDR 4,818,919. IDR 419,881 (8.01%) smaller than the INA-CBGs tariff. The conclusion is that there is a negative difference between the unit costs of the ABC method and the DD method and the INA CBGs rates. Hospitals should submit a tariff review to BPJS, including a review of the provision of separate tariffs for baby handling costs. Apart from that, hospitals also need to make efficiencies by reducing length of stay, reviewing medical services, efficiency in laundry units and CSSD, speeding up RME, as well as efficiency in several other resources while still prioritizing patient safety*

***Keywords:*** *caesarean section, unit cost, ABC method, BPJS, JKN KIS, INA-CBGs rates*

## 1. INTRODUCTION

The Social Security Administering Agency (BPJS) through its official website stated that funding for the JKN-KIS program continues to increase from year to year. From IDR 42.7 trillion in 2014 to IDR 108.7 trillion in 2019. Around 80% of JKN-KIS expenditure is used to finance health services in hospitals and 20% is used to finance First Level Health Facilities (FKTP)

Delivery using the caesarean section method is one of the JKN-KIS services which has experienced a significant increase in cases from year to year. Based on BPJS data, in 2019 there were 608,994 caesarean section procedures recorded in hospitals, while normal deliveries at FKTP were recorded at 1,066,559 procedures. In total, of the 1,675,553 birth procedures, 36% were birth procedures by caesarean section. In fact, according to WHO recommendations, caesarean section cases are 10-15%. To control these numbers, BPJS Health has established a strategy for controlling the quality and costs of health services by strengthening the role of the Quality Control and Cost Control Team (TKMKB) to stimulate

*Received: September 21, 2024; Revised: September 30, 2024; Accepted: Oktober 17, 2024;*
*Published: Oktober 18, 2024;*

and improve the quality of delivery services, both at FKTP and hospitals, with the hope that maternal and child health will improve good

Currently there is still quite a big difference between hospital rates and INA-CBGs rates. For example, the tariff gap is in Class 3 for caesarean section patients without complications at Rumah Sakit Graha Sehat, the general rate for class 3 is IDR 10,800,000,- while the INA-CBGs rate is IDR 5,238,800,-. This rate includes the cost of a caesarean section operation without complications along with the costs of caring for the newborn such as resuscitation, cutting the umbilical cord, lactation education, etc.

With the difference between the general class 3 billing rate for caesarean section patients without complications at Rumah Sakit Graha Sehat of Rp. 10,800,000,- and the Class 3 INA-CBGs rate for caesarean section patients without complications of Rp. 5,238,800,-, then the hospital has the potential to suffer a loss of IDR 5,561,200 per service, if multiplied by the number of caesarean section patients without complications with BPJS class 3 payments at Rumah Sakit Graha Sehat during 2022 which is 496 patients then the total loss experienced by Rumah Sakit Graha Sehat is IDR 2,758,355,200. This loss figure is only for 1 service and does not rule out the possibility of the same thing occurring in other services

For this reason, it is necessary to carry out a cost analysis as well as an analysis of efforts to efficiently provide services for caesarean section patients without complications so that the hospital does not suffer losses. So, the aim of this research is to provide an overview of the INA-CBGs rates and the unit cost of BPJS class 3 patients with caesarean section procedures without complications, as well as to analyze the cost efficiency that can be carried out for caesarean section services without complications at Rumah Sakit Graha Sehat. The aims of this study were to understand the unit cost for BPJS patients with caesarean section procedures as well as efficiency efforts made by hospitals based on the estimated unit costs of caesarean section procedures so that the unit costs can be smaller than the INA-CBGs rates.

## 2. METHODS

This study used a descriptive analysis research design with quantitative methods. The population of this study were all patients who underwent caesarean section without complications and were paid using BPJS class 3 at Rumah Sakit Graha Sehat from October to December 2022 with a total population of 127 people. The research focuses on class 3 patients because the number of caesarean section patients without complications whose

payment using BPJS class 3 is greater than class 1 or 2. Besides that, it is estimated that the difference in unit costs and INA-CBGs rates is the largest

**ABC Method data analysis techniques**

The stages carried out by researchers to calculate unit costs using the ABC method are as follows:

a. Obtain the flow of caesarean section service activities from the results of in-depth interviews and observations, then identify and group related units
b. Grouping the types of costs into BHP costs, depreciation costs, operational costs and maintenance costs, then the researchers regrouped these costs into direct costs and indirect costs. Investment costs are obtained using the Annualized Investment Cost (AIC) formula

$$\text{AIC} = \frac{\text{IIC}(1+\text{i})^{\text{t}}}{\text{L}} (1)$$

Information:

AIC = Annualized Investment Cost
IIC = Initial Investment Cost
i = Inflation rate
t = Service life
L = Investment life

c. Classify primary activities and secondary activities.
d. Laboratory fees and Pharmacy Unit fees are calculated based on the total laboratory examinations and number of pharmaceutical prescriptions and BMHP.
e. Add up all the costs to obtain the total cost for caesarean section services.
f. The unit cost of caesarean section patients is obtained using the formula:

$$\text{Unit Cost} = \frac{\text{Total Cost}}{\text{Jumlah kunjungan pasien SC}} (2)$$

g. Analysis by comparing the unit costs with INA-CBG rates and identifying efficiency efforts that can be carried out by the hospital in each caesarean section service activity.

Activity Based Costing System (ABC) is the result of an expansion of the two-stage charging procedure in the traditional cost system (Cooper & Kaplan, 1998). The ABC method can determine accurate costs because activity costs are assigned to cost objects based on activities carried out for cost objects (Blocher et.al, 2008). ABC charges costs to activities, which will then be charged to products so as to provide accurate and timely information (Syahzuni, 2020). ABC contributes to cost reduction through providing accurate and detailed information on product costs, performance evaluation, elimination of

non-value adding activities, continuous improvement strategies, on the other hand helps company managers in strategic decision making and other issues, planning and control activities (Gokmen, 2020).

ABC design varies between companies, generally consisting of 5 steps listed below (Gokmen, 2020).

a. Determination of activities
b. Activity grouping
c. Redistribution of overhead costs according to activity
d. Selection of appropriate cost drivers
e. Allocation of activity costs to products.

Advantages of using activity based costing to calculate (Zsolt & Peter 2005)

a. Can calculate the cause and effect relationship between activity relationships and service costs.
b. Can provide actual information on unit cost calculations .
c. Focus on data activities according to the process sequence of a product or service.
d. Potentially increases management resources.
e. Increase the efficiency of healthcare organizations by prioritizing customer value.

The limitations of Activity Based Costing (ABC) in implementing cost calculations are as follows (Blocher et.al, 2008):

a. Allocation and property taxes for factories.
b. Elimination of fees.
c. Cost and time.

**Cost**

Cost is a sacrifice of resources to achieve a goal. Sacrifice is measured by the money paid to obtain goods or services (Horngren & Datar, 2012). Costs or costs are cash or cash equivalent values that are sacrificed in order to obtain goods or services that are expected to be useful now and in the future for the organization (Hansen dan Mowen, 2009).

According to the traditional view costs are products or services that consume resources. Meanwhile, according to the ABC system, costs are products or services that consume activities, then consume resources (Baker, 1998). Cost is an integral unit determined by calculating the sacrifices of a series of service delivery (Gokmen, 2020;Klos et al, 2020).

**Unit Cost**

Unit cost (or average cost) is the total manufacturing cost (materials, labor, and overhead) divided by the number of units of output (Blocher et.al, 2008). Unit cost is the result of total costs divided by the number of service units (Zsolt & Peter 2005); Horngren & Datar, 2012).

The stages of calculating costs are as follows (Blocher et.al, 2008):

a. Assign inputs to cost centers.
b. Allocation of all costs to final cost centers.
c. Calculate unit costs.

**INA-CBGs**

BPJS uses the INA-CBGs system, which is a payment system using a package system, so it is hoped that payments will be more objective because they are based on actual costs. The implementation of the INA-CBGs tariff itself is expected to improve the quality of service and obtain cost efficiency for health services provided.

INA-CBGs rates have 5 hospital rate groups :

a. Special hospital
b. Class A government and private hospitals
c. Class B government and private hospitals
d. Class C government and private hospitals
e. Class D government and private hospitals.

**Conceptual framework**

The outcome of the approach is to know the unit cost for cesarean section delivery services without complications, and to know the efficiency efforts made by the hospital based on the estimated unit cost of cesarean section delivery without complications in order to get a unit cost that is below the INA-CBGs rate.

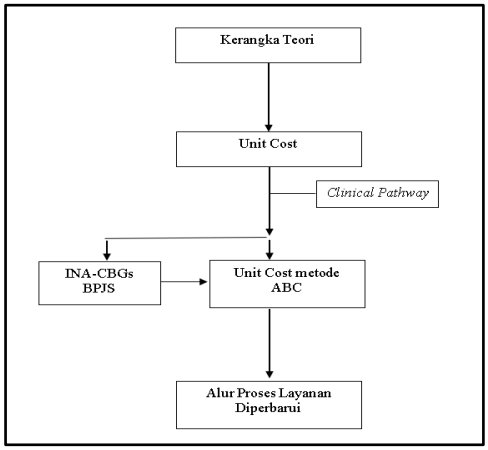


**Figure 1.** Theoretical Framework

H1 = The unit cost of Rumah Sakit Graha Sehat's ABC method is the same as the INA-CBGs rate

H2 = The unit cost of Rumah Sakit Graha Sehat's ABC method is smaller than the INA-CBGs rate

H3 = The unit cost of Rumah Sakit Graha Sehat's ABC method is greater than the INA-CBGs rate.

## 3. RESEARCH RESULTS AND DISCUSSION

### ABC method calculation

The unit cost calculation begins by calculating direct labor (DL) and direct materials (DM), such as salaries, medicines and medical equipment in the following table.

**Table 1.** Direct Labour Anda Direct Materials

| Material Name | Cost |
|---|---|
| Pre S C | 84,562 |
| S C | 894.273 |
| Post S C | 422,250 |
| Oral Medication (To Go Home) | 24,495 |
| Neonates | 16,158 |
| Test Lab | 82,904 |
| Medical Services | 2,155,000 |
| Nutrition | 220,000 |
| Total *Variable Cost* | 3,899,641 |

Direct Overhead Costs with weighting based on the number of activities

**Table 2.** Operation Weighting

| Operation type | Amount | Unit | Weighting | Amount x weighting |
|---|---|---|---|---|
| Small operation | 269 | Patient | 0,5 | 134,5 |
| Moderate operation | 251 | Patient | 1 | 251 |
| Big operation | 460 | Patient | 1,5 | 690 |
| Special operation | 94 | Patient | 2 | 188 |
| Total operation | 1.074 | Patient | | 1263,5 |

**Table 3.** Primary Activity weighting

| Facility Activity | Cost Driver | Unit | Qty CD (All) | Qty CD (SC) | Weighting |
|---|---|---|---|---|---|
| Registration Administration Services (TPP & Information) | patient qty | patient | 9.140 | 127 | 1% |
| Operation Room | operation qty | Weighting | 1.264 | 191 | 15% |
| Laundry & CSSD Room | Inpatient qty | Kg | 1.950 | 635 | 33% |
| Laboratory Installation | patient qty | Test | 10.339 | 635 | 6% |
| Pharmaceutical Installation | recipes qty | receipe | 16.132 | 381 | 2% |
| Maternal Room | patient qty | patient | 595 | 127 | 21% |
| Neonatologi Room | patient qty | patient | 595 | 127 | 21% |
| Billing Room | patient qty | patient | 9.140 | 127 | 1% |

**Table 4.** Operational Direct Costs

| Location | Total Cost (Rp) | Proportion | SC Proportion |
|---|---|---|---|
| Registration Administration Services (TPP & Information) | 87.761.000 | 1,39% | 1.219.436 |
| Operation Room | 54.300.000 | 15,08% | 8.186.901 |
| Laundry & CSSD Room | 45.927.318 | 32,56% | 14.955.819 |
| Laboratory Installation | 80.156.000 | 6,14% | 4.923.016 |

| Location | Total Cost (Rp) | Proportion | SC Proportion |
|---|---|---|---|
| Pharmaceutical Installation | 80.293.500 | 2,36% | 1.896.344 |
| Maternal Room | 69.542.000 | 21,34% | 14.843.418 |
| Neonatologi Room | 51.640.000 | 21,34% | 11.022.319 |
| Billing Room | 52.965.000 | 1,39% | 735.947 |
| Water, power, internet | 270.555.000 | 6,7% | 3.759.353 |
| Total | | | **61.542.554** |

**Table 5.** Direct Maintenance Costs

| Location | Total Cost (Rp) | Proportion | SC Proportion |
|---|---|---|---|
| Registration Administration Services | 4.757.000 | 1,39% | 66.098 |
| Operation Room | 41.000.000 | 15,08% | 6.181.638 |
| Laundry & CSSD Room | 9.000.000 | 32,56% | 2.930.769 |
| Laboratory Installation | 9.810.000 | 6,14% | 602.510 |
| Pharmaceutical Installation | 4.895.000 | 2,36% | 115.608 |
| Maternal Room | 9.507.000 | 21,34% | 2.029.225 |
| Neonatologi Room | 5.265.000 | 21,34% | 1.123.790 |
| Billing Room | 3.070.000 | 1,39% | 42.658 |
| Total | | | **13.092.297** |

The inflation rate used is 2.72%, referring to year of year (y-on-y) inflation data for 2019 (BPS 2022 and BI 2022), while the investment period is based on Minister of Finance Decree Number 295 / KM.6 / 2019

**Table 6.** Depreciation of Investments direct Costs

| Location | Building | Medic | Non Medic | Total |
|---|---|---|---|---|
| Registration Administration Services (TPP & Information) | 33.792 | | 50.267 | 84.060 |
| Operation Room | 3.142.929 | 2.167.067 | 744.836 | 6.054.832 |
| Laundry & CSSD Room | 1.392.449 | 1.171.935 | 1.288.323 | 3.852.707 |
| Laboratory Installation | 118.181 | 348.895 | 29.793 | 496.870 |

| Location | Building | Medic | Non Medic | Total |
|---|---|---|---|---|
| Pharmaceutical Installation | 159.059 | | 116.402 | 275.461 |
| Maternal Room | 1.557.291 | 105.561 | 1.183.939 | 2.846.790 |
| Neonatologi Room | 1.232.142 | 4.920 | 353.657 | 1.590.719 |
| Billing Room | 182.999 | | 22.394 | 205.393 |
| Total | 7.818.842 | 3.798.379 | 3.789.610 | **15.406.831** |

Indirect overhead costs are costs that are not directly related to one activity, but are related to many activities. For

**Table 7.** Indirect Overhead Costs Secondary Activity WeightinG

| Facility Activity | Cost Driver | Unit | CD Qty (All) | CD Qty (SC) | Weighting |
|---|---|---|---|---|---|
| Medical Record Unit | patient qty | patient | 9.140 | 127 | 1% |
| Information and Technology | patient qty | patient | 9.140 | 127 | 1% |
| IPRS | Income | Rupiah | 9.951.816.660 | 665.327.600 | 6,7% |
| Public Relation | Income | Rupiah | 9.951.816.660 | 665.327.600 | 6,7% |
| K3 | Income | Rupiah | 9.951.816.660 | 665.327.600 | 6,7% |
| PPI | Income | patient | 9.951.816.660 | 665.327.600 | 6,7% |
| Management | Income | Rupiah | 9.951.816.660 | 665.327.600 | 6,7% |
| Nonfungtional room | Income | Rupiah | 9.951.816.660 | 665.327.600 | 6,7% |

**Table 8.** Indirect OPERATIONAL COST

| Location | Total Cost (Rp) | Proportion | SC Proportion |
|---|---|---|---|
| Medical Record Unit | 41.100.000 | 1% | 571.083 |
| Information and Technologi | 23.917.000 | 1% | 332.326 |
| IPRS | 21.017.000 | 6,7% | 1.405.089 |
| Public Relation | 40.206.000 | 6,7% | 2.687.968 |
| K3 | 129.938.000 | 6,7% | 8.686.991 |
| PPI | 17.974.000 | 6,7% | 1.201.650 |
| Management | 744.594.010 | 6,7% | 49.779.750 |
| Total | | | **64.664.856** |

**Table 9.** Indirect Maintenance Costs

| Location | Total Cost (Rp) | Proportion | SC Proportion |
|---|---|---|---|
| Medical Record Unit | 4.500.000 | 1% | 62.527 |
| Information and Technologi | 11.750.000 | 1% | 163.266 |
| IPRS | 12.150.000 | 6,7% | 812.287 |
| Public Relation | 11.700.000 | 6,7% | 782.202 |
| K3 | 9.300.000 | 6,7% | 621.750 |
| PPI | 8.400.000 | 6,7% | 561.581 |
| Management | 49.550.000 | 6,7% | 3.312.660 |
| Nonfungtional room | 49.450.000 | 6,7% | 3.305.974 |
| Total | | | **9.622.248** |

**Table 10.** Depreciation of Investments which are Indirect Costs for Sectio Caesarea in 2022

| Location | Building | Non Medic | Total |
|---|---|---|---|
| Medical Record Unit | 47.532 | 33.111 | 80.643 |
| Information and Technologi | 23.023 | 33.681 | 56.705 |
| IPRS | 175.097 | 3.194.193 | 3.369.290 |
| Public Relation | 71.468 | 50.748 | 122.217 |
| K3 | 71.468 | 50.748 | 122.217 |
| PPI | 71.468 | 50.748 | 122.217 |
| Management | 357.341 | 27.765.325 | 28.122.667 |

| Location | Building | Non Medic | Total |
|---|---|---|---|
| Nonfungtional room | 3.573.415 | 1.342.678 | 4.916.093 |
| Total | 4.390.814 | 32.521.234 | 36.912.048 |

**Unit Cost ABC method**

The unit cost calculation using the ABC method is the result of adding up the costs of consumable materials and medical services with overhead costs which have been divided by the number of services.

ABC Unit Cost Results Table

**Table 11.** ABC Unit Cost Results Table

| UNIT COST | Cost | Total |
|---|---|---|
| Direct material and labor | | 3.899.641 |
| Overhead | | |
| Direct Overhead | | |
| Operational Cost | 61.542.554 | |
| Maintenance Cost | 13.092.297 | |
| Depreciation Cost | 15.406.831 | |
| Indirect Overhead | | |
| Operational Cost | 64.664.856 | |
| Maintenance Cost | 9.622.248 | |
| Depreciation Cost | 36.912.048 | |
| Total Overhead | 201.240.834 | |
| Number of services | 127 | |
| Overhead cost for each patient | | 1.584.573 |
| **Unit Cost ABC Methode** | | **5.484.214** |

The unit cost of caesarean section without complications is IDR 5,484,214, which is higher than the INA-CBGs rate of IDR 5,238,800, so there is a rate gap of IDR 245,414 per patient or 4.5%. Even though unit cost is a basic rate calculation without profits. If during the research period the number of caesarean section patients without class 3 complications at Rumah Sakit Graha Sehat was 127 patients, then during those 3 months Rumah Sakit Graha Sehat had a potential loss of 127 x IDR 245,414 = IDR 31,167,578, which means that if accumulated over 1 year it would to IDR 124,670,311.

If ranked first, the largest costs are management and administration services amounting to IDR 86,577,863, second place is the Laundry Room and CSSD units

amounting to IDR 21,739,295. Then the third rank is the Operating Room amounting to IDR 20,423,372. Then the fourth rank is the maternal unit amounting to IDR 19,719,434.

Printing costs for procuring RME files are also large. namely IDR 4,500/patient, if you have RME then the medical record fee is around IDR 2,500/patient. So there is a cost savings of IDR 2,000/patient. As long as RME has not been realized, efficiency can be achieved by using forms that suit patient needs.

The patient's hospitalization period is 3 days, whereas in journals and articles published by (Ministry of Health, 2022) it is stated that healing from surgery using the Eracs method only takes 24 hours. So, if possible, the efficiency that can be achieved is by reducing the hospitalization period, which is currently 3 days to 2 days. So it is estimated that the efficiency can be 1/3 day x IDR 128,036,592 / 127 patients = IDR 336,054 per patient. However, implementing this reduction in hospitalization must consider the addition of anesthetic drugs.

Cutting the length of stay allows a reduction in the quantity of linen used, so it is hoped that there will be a reduction in operational costs for the laundry room and CSSD as well. Efficiency can also be done with a detailed evaluation of the Laundry Room and CSSD to find possible process efficiencies that do not have added value.

Apart from that, medical services in research conducted (Maulana, 2019) show that the cost of medical services incurred by the hospital for caesarean section at Yogyakarta Hospital is IDR 1,040,000 when compared with the INA-CBGs operation rate which is IDR 3051,000, so the percentage is 34%, and the results The unit cost of this research is lower than the INA CBGs rate. Meanwhile, medical services at Rumah Sakit Graha Sehat which include medical services from obstetricians, anesthesiologists, pediatricians and midwives are IDR 2,155,000, meaning 41% of the INA CBGs rate. If you compare it with research conducted by (Maulana, 2019), it is recommended that the medical services received by doctors be 34% of the INA CBGs rate, meaning 34% x IDR 5,238,800 = IDR 1,785,759. So Rumah Sakit Graha Sehat costs Rp. 329,241 more than it should. This means that if the tariff is adjusted, the hospital can achieve an efficiency of IDR 329,241 per patient.

The difference between the unit cost of the ABC method and the INA CBGs rate is a loss of IDR 245,414. However, if Rumah Sakit Graha Sehat can implement the results of this research, there will be an efficiency in inpatient costs of IDR 336,054 per patient and medical services of IDR 329,241 per patient. So Rumah Sakit Graha Sehat can cover losses and even get unit cost results below the INA CBGs rate of IDR 419,881 or 8.01% of the INA-CBGs rate.

**Unit cost results with INA-CBGs rates**

**Table 12.** Unit cost comparison table

| *Unit cost before efficiency* | | Efficiency | Unit cost before efficiency | |
|---|---|---|---|---|
| INA-CBGs | 5.238.800 | | INA-CBGs | 5.238.800 |
| Unit cost | 5.484.214 | 665.295 | Unit cost | 4.818.919 |
| Difference | -245.414 | | Difference | 419.881 |
| Persentage | -4,68% | | Persentage | 8,01% |

From the table above, the ABC *unit cost data is presented* at IDR 5,484,214, when compared with the claim received from INA-CBGs which is IDR 5,238,800, then the hospital suffers a potential loss of IDR 245,414 per patient, or *the unit cost* of the ABC method is greater 4.68% of the INA CBGs tariff.

One of the reasons for the high unit costs of this hospital is the BPJS Regulation Number 03 of 2018 which explains that BPJS Health guarantees delivery services and newborns in healthy condition who receive essential neonatal services and do not require treatment with special resources paid for in one delivery package.

So the accepted hypothesis is

H3 = The *unit* cost of Rumah Sakit Graha Sehat's ABC method is greater than the INA-CBGs rate

## 4. CONCLUSIONS

a. There are 4 biggest cost points, namely Administration and General IDR 86,577,863, Laundry Room Unit and CSSD IDR 21,739,295. Operating Room Rp. 20,423,372, Maternal Unit Rp. 19,719,434.
b. The unit cost of the ABC method is IDR 5,484,214, higher than the INA CBGs rate of IDR. 5,238,800 then there is a loss of IDR -245,414 per patient (4.68% loss).
c. Efficiency by cutting inpatient care + cutting medical services gets IDR 665,295, so the difference between ABC unit costs and INA CBGs rates becomes a surplus of IDR 419,881 (profit 8.01%)
d. Unit cost research results proven to be a negative difference (loss) can be used as a negotiation tool/material with BPJS or private companies regarding the applicable tariff. Therefore, Hospitals should regularly evaluate implementation in the field

regarding the suitability of the clinical pathway for caesarean section procedures at Rumah Sakit Graha Sehat.

## REFERENCES

Baker J. (1998) Activity-based Costing and Activity-Based Management for Health Care. United States: Aspen Publisher,

Barlia Annis Syahzuni. (2020) Application of activity based-costing system in determining cost of production. Superior One, unpublished

Edward J. Blocher, Kung H. Chen, Gary Cokins and Thomas W. Lin. (2008) Cost management (Fourth Edition ed.). New York: Mc Graw Hill,

Hansen dan Mowen. (2009) Akuntansi Manajemen.. Jakarta: Rajawali Pers,

Horngren, Srikat M Datar. (2012) Cost accounting a managerial emphasis. England: Pearson,

Karahan Gokmen. (2020) Activity Based Costing in Health Institutions: An Application in Gynecology Clinic of a Public Hospital. [Turkiye Klinikleri Journal of Health Sciences , 5(1) 112-121,].

Klos et al. (2020) Cost analysis of cytoreductive surgery and hyperthermic intraperitoneal chemotherapy and the risk factors for their increased cost in a public insurance health care system e Single centre study. [European Journal of Surgical Oncology, 46 (2020) 607-612,]

Maulana Haqim R, P. F. (2019). Unit Cost Analysis of Sectio Caesarea with Activity-Based Costing in Yogyakarta City Hospital. Jurnal Medicoeticolegal dan Manajemen Rumah Sakit , DOI: 10.18196/jmmr.8183.

Mogyorosy Zsolt, Smith Peter. (2005) The main methodological issues in costing health care services. University of York. York United Kingdom: Centre For Health Economic (CHE),

Robin Cooper, Robert S Kaplan. (1998) The design of management systems . New Jersey: Prentice Hall,