



COST ANALYSIS AND UTILIZATION STUDY OF THE OPERATIVE SERVICES PROVIDED AT THE OPERATION THEATER IN A TERTIARY CARE HOSPITAL

Medical Science

Purushotham.K.R.* Student, MBA in Hospital Management, Annamalai University, Chidambaram, Tamilnadu, India *Corresponding Author

Junior Sundresh Associate Professor of Surgery, Raja Muthiah Medical College, Annamalai University, Chidambaram, Tamilnadu, India

ABSTRACT

Introduction: The cost of medical care has risen dramatically in the last decade, due to various factors. It is important for us to know regarding the actual cost of providing medical care especially the core services in hospitals.

Aim: To study a cost analysis of operative services at a tertiary care hospital including valuations of the operation theater as a cost center, specialty services in the operation theater, utilization of services and compute unit cost for service rendered and analysis.

Methods: All the activities in the operation theatre were critically analyzed for 3 months. All input resources in to the OT such as capital cost, expenditure, maintenance cost, etc. was collected from accounts, stores and maintenance departments respectively to value OT as a cost center and unit cost per hour of operating of room was calculated.

Results: In this study the unit cost of Operating room per hour was found to be around Rs.2,511.50 per hour and the operating room utilization was found to be 18.28% (Resource hour utilized 807 hours in 3 months: Resource hour available 4416 hours in 3 months).

Conclusion: This study highlights that there is a need to integrate cost accounting with hospital management information system, so that decision making can be based on credible data, thereby leading to better utilization of resources.

KEYWORDS

Operation theater, hospital expense, cost saving

INTRODUCTION

There is a great improvement in health care with the introduction of newer Gadgets and technologies and thereby increase in the cost of the health care. In developing countries in order to be able to reach to all the sectors of the population, there is a need to reduce the cost of Health services

Cost analysis is an important tool to reduce the cost of the health services. In developing countries where there is limited availability of resources cost analysis help to provide quality health care services to all the sectors of the society at affordable price. Cost analysis is the procedure of classification, recording and allocation of expenditure to determine the cost of the services or product.

Cost information is a part of basic information required for cost analysis. This helps the manager's for making decisions, to improve performance of hospital by effective utilization of available resources'. Also it allows for performance comparison between different hospitals. (1)

The cost analysis will help the hospital administrators to know the detailed costing and how to reduce the cost by reducing the overheads in order to provide quality care at an affordable price. Hospital administrator and Financial Managers have been often criticized for considering cost alone and neglecting quality of patient care. (4)

In most of the developing countries, due to poor statistics, cost analysis has become a difficult task. Due to poor information systems and lack of resources devoted to hospital management, cost data are not always available from routine data systems. In the absence of the above, there has been an over reliance on expenditure review data. Unfortunately this kind of data is only good for accounting purposes and also it is not adequate to assess the efficiency levels or accurate estimation of costs / patient for services provided.

Cost reduction is needed to be effected without affecting the quality and effectiveness of the service. (3)

The operation theatre represents an area of considerable expenditure in a hospital budget. Cost analysis enable the Hospital administration to determine the actual cost of operating each section, thereby allowing effective utilization of the available resources.

AIM

To study a cost analysis of operative services at a tertiary care hospital including valuations of the operation theater as a cost center, specialty services in the operation theater, utilization of services and compute unit cost for service rendered and analysis.

MATERIALS AND METHODS

The study is descriptive cross sectional; the required data is obtained from the utilization records maintained in the OT, general store, and account department and also by informal interviews with the in-charges of various departments. All the activities in the operation theatre were critically analyzed for 3 months. All input resources in to the OT such as capital cost, expenditure, maintenance cost, etc. was collected from accounts, stores and maintenance departments respectively to value OT as a cost center and unit cost per hour of operating of room was calculated. The cost of OT per hour was calculated by dividing all the costs which are incurred on running maintaining OT by used resource hours.

RESULTS

During this phase all the input resources into the OT were collected, to value the OT as a cost center. The results of the cost data generated were revealing but not surprising and as expected the cost of the surgery varies from one specialty to the other. The cost of the surgery was directly linked to the utilization of the operation theater by the specialty, and the cost varied inversely with the utilization of the block times utilized by the specialty.

Table 1 Running expenses in the operation theater

Expenses in the operation theater	Units in Rupees	Units in Percentage
Capital cost of building per year	178000	8.14%
Cost of fixed assets in OT per annum	1468638	67.15%
Cost of Electricity per annum (excluding A/C)	86231	3.94%
Total cost on A/C per annum	125176	5.72%
Cost of manpower per. annum	307758	14.08%
Cost of medical gases per annum	21240	0.97%
Total cost incurred on OT per annum	2187044	100%

The unit cost of Operating room per hour was found to be around Rs.2,511.50/- per hour and the operating room utilization was found to be 18.28% (Resource hour utilized 807 hours in 3 months: Resource hour available-4416 hours in 3 months).

Table 2 Surgeries performed during the study period

Department	Month 1	Month 2	Month 3
Dental	4	2	6
ENT	6	4	15
General surgery	76	51	100
Neurosurgery	3	6	12

OBG	33	35	48
Orthopedics	192	123	171
Urology	51	30	54
Pediatric surgery	2	3	5
Total	367	254	411

Table 3 Resource Hours Utilized during the study period

Month	Total Resource Hours Available	Total Resource Hours Used
Month 1	1488	282
Month 2	1440	191
Month 3	1488	334
Total	4416	807

The actual cost involved per hour of OT services in OT is Rs. 2,511.50 This when compared to existing charges per hour of OT services (average Rs.4, 500), it was noticed that there was difference of Rs.1, 988.5.

The difference observed in the study cannot be commented as whether it was due to actual significance or by chance as the use of statistical tools for analysis was limited.

However going by observations, a real difference of Rs.1,988.5/- can be appreciated between the OT charges and Actual costs involved which shows that the hospital is realizing profits (less of taxes) of Rs.1,988,5./- for every hour utilized in OT.

The percentage difference between the costs and current charges of OT per hour when compared to actual costs incurred is 79.18%.The difference is 79.18% (Rs.1,988.5) more over and above the actual costs per hour. The hospital is charging 79.18% more than the actual costs incurred in OT.

CONCLUSION

The study shows that certain cost centers are at present contributing quite substantially to the total costs of providing services in hospitals. There is need for generating cost awareness and initiate measures to reduce costs wherever feasible by adopting modern management technique. This will help in optimizing use of budgetary allocation. In the present set up, the component of overheads is quite high. By increase increasing utilization of OT timings, cost of these overheads can be reduced leading to overall decrease in cost of surgeries. At present there is lack of awareness amongst the hospital staff regarding cost involved in providing patient care. The cost awareness programme should be started in the hospital to make hospital staff aware of the cost involved for providing patient care so that they take proper care to reduce the wastage and make optimum use of the resources available.