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A Proposed Model for the Application of the Resource Consumption Accounting (RCA) Model in Health Sector

An Applied Study to Calculate the Cost of the Overnight Bed for (24 Hours) In the Emirates Alhelal -Hospital (Maternity)

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Abstract

This study aims to present a proposal for the application of the Resource Consumption Accounting (RCA) system in measuring the cost of a bed for overnight stays (24 hours) as an attempt to develop the accounting system used in the Emirates Crescent Hospital - Rafah - Ministry of Health, which is used as the latest method, as the study aimed To indicate the role of resource consumption accounting in determining idle energy and knowing the impact of its application in reducing costs and avoiding deficiencies in previous systems based on its concepts, principles and new pillars and obtaining reliable data to make long-term decisions. To achieve the objectives of the study, obtaining the actual cost information within six months to take its monthly average as an indicator for calculating the cost of the bed, the researcher followed the applied study method in order to design a bed cost measurement system for the two overnight stays (24 hours). The study reached the most important results, the use of the resource consumption accounting (RCA) system leads to the correct determination of the cost of health services, including the cost of the bed for overnight cases, the resource consumption accounting (RCA) system focuses on idle energy and excludes or reduces it by separating fixed costs and variables in resource pools, which gives clearer and more objective data on costs in terms of allocation compared to traditional systems. The percentage of energy utilization in relation to fixed costs is 56% of the total costs, and there are unutilized fixed costs by 44%, which indicates that there is idle capacity in the hospital as a result of lack of Proper use of resources. The most important recommendations of the study were the necessity of implementing the Resource Consumption Accounting (RCA) system of the Ministry of Health, as it addresses the problems of random allocation of the current traditional systems, as well as solving the problem of indirect costs in a better way and distributing them more equitably.

Keywords: Resource Consumption Accounting, Variable Costs, Proportional Costs, Hospital

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Introduction

Cost accounting plays an important and vital role in serving the administration at its levels and the ability to effectively measure and control cost, as traditional cost methods have become inappropriate for that revolution, which led to the emergence of modern and advanced systems that match this technological development, and among these modern systems is the method of accounting for resource consumption that It is a broader approach and approach that combines the advantages of the activity-based costing method with the German costing method. It provides management with accurate and fair information about the allocation of available resources, improving the management of operations and activities, and improving the efficient utilization of resources. It provides accurate measurement of the costs of services and the provision of information necessary to meet the needs of the company's management to take decisions and provide control methods used in maintaining and controlling the resources of the institution.

Several studies showed a set of criticisms about the ability of the different cost approaches (the traditional approach), the activities entrance, and the time-oriented activities entrance) in achieving their goals, which are measuring the cost in an appropriate, fair and accurate manner, achieving control over the elements of costs, and providing appropriate cost information for decision makers. Many studies also showed the entrance to accounting for resource consumption in this scope.

Research Terminology

- **Resource consumption accounting**: is a modern cost management tool that is characterized by providing comprehensive and sufficient information that helps in proper planning, reducing costs, controlling and discovering idle

energy. It helps to take strict strategic and operational decisions that will increase the competitiveness of the economic unit.

- **Emirates Crescent Hospital for Women and Childbirth**: It is a specialized government hospital that provides health care services for women and newborns

Problem Statement

There have been many criticisms of the traditional cost systems used about measuring cost in an appropriate and accurate manner, achieving the element of cost control and helping to provide appropriate information to decision makers. Given the need for decision makers, especially in the Palestinian Ministry of Health, for accurate and appropriate information to take appropriate decisions, this study presents a proposal to implement a cost system which is (Resource consumption accounting (RCA) to address this problem.

Research Questions

The problem of the study was to answer the following questions:

Q1-: What are the principles and components that distinguish the resource consumption accounting approach from the previous approaches, which provide the opportunity to measure cost in an appropriate, fair and accurate manner, achieve control over cost elements, and provide appropriate cost information to decision makers?

Q2-: Can the proposed model for the resource consumption accounting (RCA) approach be applied in the health sector? And how can it be applied?

Research Objectives

This study aims to achieve the following objectives:

1. This study aims to present a proposal for the application of the Resource Consumption Accounting (RCA) system in measuring the cost of a bed for

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overnight stays (24 hours) as an attempt to develop the accounting system used in the Emirates Crescent Hospital - Rafah - Ministry of Health, which is used as the latest method.

2. Demonstrating the role of resource consumption accounting in determining idle energy and knowing the impact of its application in reducing costs and obtaining reliable data to make long-term decisions. Short-term cost data that can be used to improve the competitive advantage was also obtained, and to achieve the desired goal of the study, the researcher followed the applied study method in order to design a bed cost measurement system for two overnight stays (24 hours).
3. Clarifying the role of the resource consumption accounting entrance in avoiding the shortcomings of the previous systems based on its new concepts, principles and pillars that it offers and providing more accurate information as inputs to the decision-making model with high efficiency.

Research Importance

The importance of the study is shown by the benefit that will be given to:

1. Scientific importance: The importance of this study appears in the fact that it dealt with the approach to accounting for resource consumption in the health sector, and due to the scarcity of research, the importance of this research is shown by showing how this approach is applied in that sector.
2. Practical importance: The importance of this study stems from the need to implement a cost accounting system that effectively achieves its main objectives, which are appropriate, fair and accurate cost measurement, achieving control over cost elements, and providing appropriate cost information to decision makers.

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Research hypothesis

After presenting the problem and objectives of the study, the hypotheses can be formulated as follows:

Ho1: The application of the resource consumption accounting (RCA) system in measuring the cost of a bed for overnight stays (24 hours) contributes to the development of the accounting system used in the Emirates Crescent Hospital, the Ministry of Health

Ho2: The application of a resource consumption accounting system that contributes to identifying idle energy, reducing costs, and obtaining reliable data to make long-term decisions.

Ho3: Applying a resource consumption accounting system that contributes to avoiding the shortcomings of traditional costing systems.

Research Limits and Scope

The scope of the study shall be as follows:

1. **Time limits:** the study is limited to the period between (1/1/2021) until 30/6/2021.
2. **Spatial limits:** The study is limited to the Ministry of Health - Emirates Crescent Hospital.
3. **Objective limits**: The study is limited to presenting a proposed framework for applying the resource consumption accounting (RCA) approach to calculating the cost of a bed for one night (24 hours) in the Emirates Crescent Hospital.

Previous Studies

- Study of (Korkmaz and Copuroglua 2019) aimed is to clarify the basic principles of the resource consumption accounting system, to examine its components, to show how it works and to provide a basis for future studies. In this context, resource consumption accounting has been implemented in

Nefis Bulgur and resource pools are created before resource costs are transferred to activity pools according to the resource consumption accounting method. Then, the costs collected in the resource pools are distributed to the activity pools and from there to the products. In this study, the reason for the emergence of resource consumption accounting, its evolution, components and operation, and its comparison with the German accounting system and the activity-based accounting system, was explained. Among the most important findings of the study, reliable information was obtained that reveals the efficiency of resource consumption accounting and allows managers to make short and long-term decisions. The differences between other accounting methods for accounting for resource consumption have also been identified. Reliable information has been obtained that reveals the efficiency of resource consumption accounting and allows managers to make short and long-term decisions. Differences between other accounting methods for accounting for resource consumption have also been identified, Reliable information has been obtained that reveals the efficiency of resource consumption accounting and allows managers to make short and long-term decisions. The differences between other accounting methods for accounting for resource consumption were also identified, and one of the most important recommendations is that specific measures need to be taken in a timely manner for the real cost (resources consumed) of the achieved results and the speed in implementing the resource consumption accounting (RCA) system.

- Study of (Al-Hibari & Al-Matari, 2019) aimed to develop Resource Consumption Accounting (RCA) by transforming the activities included in this approach from a multiple inflexible cost engine to a unique time-driven flexible cost engine through Supply Chain Management (SCM) support. And activating its role in reducing the real cost according to the production capacity mechanism, and in supporting supply chain management. The study

adopts a descriptive theoretical approach, and depicts the advantages. (RCA) and Time-Based Activity-Based Costing (TDABC) in an attempt to create a new approach that integrates the advantages of both approaches in order to reduce cost. Real and at the same time supply chain support. One of the most important recommendations is the need to implement the time-based material consumption accounting (TDRCA) system.

- Study of (Ozhurk et al. 2019) aimed to introduce a resource consumption accounting system and apply it to a hotel facility to provide accommodation service to customers, in the belief that this system is described as creating an integration between management and costs. Where such a system provides information to improve the decision-making process and focus on the theoretical energy of resources. Where resources are divided into productive and non-productive resources. A set of results were also reached, including the division of resources into three types, productive, non-productive, and a third unemployed. One of the most important recommendations is the need to use and apply RCA in order to achieve effective planning and use resources more efficiently.
- Study of (Babaker and Abu Bakr 2019) aimed to indicate the possibility of benefiting from the resource consumption accounting system, and to indicate the impact of its application on each of the customers, competitors and costs. As for the research problem, it was to search for the effect of applying resource consumption accounting. Thus, the sub-questions were extended to include the statistical impact of applying the system on each of the customers, competitors, and costs separately. The approach followed included the historical, deductive, and inductive method, in addition to the descriptive analytical method. One of the most important results is the existence of a positive relationship between the accounting of resource consumption and each of the customers, competitors and costs separately,

and that the application of this system supports the administrative decision-making process.

- Study of (Al-Saq'an, 2019) aimed To develop a proposed framework to benefit from the adoption of the Resource Consumption Accounting (RCA) approach on the causes of resources and energy accounting in developing a target cost measurement method (TC) by applying it to one of the industrial companies in the Egyptian business market, by identifying the nature of the process Measuring the target cost (TC), studying its various methods of application, analyzing the nature of the resource consumption accounting (RCA) approach and the mechanisms of its application in various industrial establishments and its role in analyzing the relationship between resources and product cost through the use of resource cost drivers and energy accounting, studying and analyzing the relationship between The target cost method (TC) and the resource consumption accounting approach (RCA), and the application of the proposed framework for the study on an industrial company in the Egyptian environment. One of the most important results is that the proposed framework for the study was able to shed light on the cost of unused energy in the company under study, which enables it to exploit or exclude it. Taking advantage of these interrelationships in providing resources, the proposed framework for the study also identified the activities that do not add value to the product and excluded them in a way that was able to save costs in all resource pools, which led to the different results of the proposed framework from the results of the traditional methods of measuring target cost (TC). One of the most important recommendations is the necessity of implementing a resource consumption accounting system.
- Study of (Al-Esawy, 2018) aimed to manage and rationalize the energy of idle resources, and since the pace of production is determined by restricted resources, the theory of constraints can be used to manage the restricted

resources in the system that cause idle energies in other unconstrained resources, with the aim of rationalizing idle energy This attracted the attention of the researcher to propose a practical framework based on both resource consumption accounting and the theory of constraints to determine the optimal level of idle energy in each resource, which will help in the effective management of constraints, and this is achieved through information related to resources with bottlenecks. And the effectiveness of the resource consumption accounting approach may be due to its dependence on the collection of all homogeneous resources within one resource pool, in addition to allocating the cost of the used resources only to products, and therefore the costs of unused resources will not be included in the costs of products. The applied study proved that the accounting of resource consumption and the theory of constraints have achieved better results when applied together, and therefore they can be considered as complementary methods aimed at improving the performance of the business organization. Energy in other productive areas or in the production of more products that enable it to benefit from this idle energy. One of the most important recommendations is the need to apply the resource consumption accounting approach, as it helps in the process of identifying and analyzing the interrelationships between resources, as well as in calculating the costs of products accurately. In addition, it provides accurate information about the energy and costs of activities and resources. From the amount of idle power.

- Study of (Al-Mirghani, Abdul Karim, Makkawi, Jadallah, and Al-Hassan 2018) aimed to develop an integrated framework for the use of the resource consumption accounting model by Sudanese industrial establishments, with the aim of improving their production efficiency by adopting all the postulates of improvement based on resource consumption accounting. The study derived its importance from the entrance's ability to manage cost components. The researchers followed the historical approach to presenting

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previous studies and research literature, the descriptive analytical approach to describe the phenomenon or problem, data analysis and testing the validity of hypotheses, the deductive approach to identify the dimensions of the problem associated with the subject of the study, formulation and testing of hypotheses and research structure, and the inductive approach in forming the theoretical framework for research.

- Study of (Liu & Wang, 2017) aimed to explain the concept of resource consumption accounting, its components and features, and the application of this method in organizations. It dealt with an introduction related to the resource consumption accounting system, the background, the reasons for its emergence, and the problems faced by the previous costing systems, and then presented the principles and assumptions of the resource consumption accounting system, and finally described how to implement this method in organizations and its advantages over Other cost techniques One of the most important findings of the study is that the resource consumption accounting system combines the activity-based costing system and the German cost accounting system The resource consumption accounting system also takes the advantages of these two systems, as with the help of the concept of resources in German cost accounting and integrating it with the concept of activity in activity-based cost accounting, it has been recognized as an upgraded version of the activity-based costing system. Later, the principles and assumptions of this technology described certain steps to apply this technology in organizations, where it was compared with other technologies and discussed its advantages over the rest of the systems. Because societies have entered a new stage of growth, modern technology, and work on resource planning and optimal utilization of the idle energy of economic units.

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Theoretical Framework

The concept of an accounting system for resource consumption (RCA):

The resource consumption accounting system is based on the philosophy that the resources owned by the facility are the ones that cause costs and therefore focus should be placed on calculating those resources and what is consumed from them. Resource consumption (RCA) It is a system for analyzing the nature and behavior of resources, it tracks resources rather than activities to measure and manage energy thus achieving better resource management (Chakraborty, 2008), The resource consumption accounting system is known as a comprehensive and integrated cost management system that focuses mainly on creating information to make optimal decisions for the economic unit. This strategy leads to the division of this energy resource into exploited energy resources, untapped energy resources and idle energy resources (Dey et al., 2014). (Al-Rawi & al-Hafiz, 2018) provides a comprehensive definition of resource consumption accounting as a modern cost management tool that is characterized by providing comprehensive and sufficient information that helps in proper planning, reducing costs, controlling and discovering idle energy, and it helps to take strict strategic and operational decisions that will increase capacity competitiveness of the economic unit.

The philosophy of the Resource Consumption Accounting (RCA) system relies on theoretical energy more than practical energy to determine the rates for the fixed part of resource costs. The RCA technique separates theoretical energy costs and actual energy to be taken into account in the decision-making process (Al-Qahtan, 2018 AD). Theoretical energy is the basis for allocating fixed costs on products, and this means that fixed indirect costs are determined for resources on the basis of theoretical energy and not the actual production achieved during a certain period. The fixed costs are the design energy costs,

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they are fixed in nature and should be treated in response to the theoretical energy and not the practical energy, while the planned energy is used as a basis for allocating the proportional costs known in the traditional system of variable costs, i.e. the proportional cost rate per unit applied on the basis of the planned production capacity to calculate the total proportional costs (Bhatt, 2014).

Objectives of the resource consumption accounting system:

Resource consumption accounting (RCA) aims to address the shortcomings in the previous cost systems, as it aims to identify idle energy, which helps to achieve that idle energy is not charged to the cost of the service and thus reduces the cost of services, in addition to the possibility of reusing idle resources:

1. The ability to distinguish between fixed and variable costs and assign them independently to direct cost targets or to activity cost pools (Tse & Gong, 2009) by including the cost of the product for the used amount of resources only, which leads to the disclosure of the cost of idle energy to management.
2. Assisting the administration in predicting resource consumption factors and expected input prices by identifying idle resources and exploited resources (Sorour & Ali, 2017).
3. Monitoring the use of resources by tracking the quantities of resources and identifying idle energies and restrictions on an ongoing basis in order to achieve optimal utilization of available resources. (Gonzalez et al., 2017).
4. Accuracy in determining the cost behavior (proportional - fixed) as is the case in determining resource pools. (Perkins & Scott Stovall, 2011a).

Assumptions of Resource Consumption Accounting (RCA) System:

Resource consumption accounting (RCA) is based on a set of assumptions, (El-Shahawi, 2014) (White, 2009b) (Al-Hussein, 2016):

1. The recruitment and allocation of resources requires the employment of some services to complete the implementation.

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2. There are interrelationships between different resource groups.
3. Resource pools whose outputs are not distributed to cost targets only, but also other resources such as supplies and maintenance.
4. The interrelationships between resources depend on quantitative output more than on values. Therefore, the relationship between the original resource pool and the sub-complex is a quantitative relationship.
5. Do not allocate all the costs of resource pools to products.
6. The resource consumption accounting system focuses on the analysis of costs based on their relationship to an aggregate for the purpose of providing information in responsibility reports regarding the use of available energy.

Elements of a Resource Consumption Accounting (RCA) System:

The elements that make up the resource consumption accounting (RCA) system The elements of the resource consumption accounting system have been identified as follows: (Shuaisha, 2016 AD), (MALIK et al., 2019):

1. **Resource Pool**: Resources are defined as the final component that is acquired to generate future benefits. It is also defined as an economic component that is required or consumed in the performance of activities. Resources include the number of hours of operation of machines, the number of working hours, raw materials and the depreciation of fixed assets by cost targets. This does not include the resources consumed by activities only, but includes the resources consumed by the resources themselves. (Blocher et al., 2010) The approach to accounting for resource consumption focuses mainly on resources. Resource pools are a grouping of homogeneous resources within a single complex, which is represented by a group of resource elements such as (people, machines, equipment, various services ... etc.).
2. **Activities Cost Pools**: It is the set of activities or operations carried out by the unit to reach the final product and each of those activities consists of a

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set of pools of resources that are consumed by the products. Where resource consumption depends on two factors: - The role of activities in resource consumption emphasizing the interconnected and overlapping relationships between resources and each other or between resources and activities (cost drivers).

3. **Causer (Driver) of Resource Cost**: The occurrence of costs according to the resource consumption accounting approach is related to the amount of resources consumed by the outputs, as these outputs are considered the basis for the allocation of resource costs according to resource pools with the possibility of achieving control over resource consumption by comparing the planned outputs of the resource pool and the actual cost of the resources of those outputs as well. It expresses the volume of resources that must be spent within the resource pool to reach a certain volume of output (such as direct labor hours, machine operating hours, etc.). Hence, the resource consumption accounting system aims to achieve causal relationships in order to accurately reflect the operational costs in the allocation of costs.
4. **Activity Cost Reasoner**: The occurrence of costs is related to the activities as the main reason for the consumption of resources and those activities are consumed by the cost objectives (the company's products, the company's services, the company's customers) and the statistical method is adopted to determine the cause of each activity.
5. **Unit of Cost Measurement**: The unit of cost measurement is represented in the form of the product or service unit in order to accurately calculate the cost of the product and not charge it with idle energy costs.

Steps for Implementing a Resource Consumption Accounting (RCA) System:

The application of the (RCA) system is based on a set of steps, the most important of which are the following: Inventory and determination of the

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available and different resources, a quantitative inventory of all types of resources owned by the facility (individuals - machines - buildings - funds) on the grounds that they are resources available to the facility and accordingly these resources are classified according to the theory traditional resources.

1. **Create Resource Pools**: Organizations have many resources and it is required to create resource pools to reduce this complexity while emphasizing that each pool of resources must be homogeneous. This is what the German cost management system defines as a cost centre, which can include one or more resource pools.

The creation of resource pools is the main focus of the RCA system. Each resource pool contains only one component costs. When creating resource pools, several of the following -factors must be taken into account: The size of the institution: the size of the institution is large, which leads to the repetition of the decision to allocate resources and thus increase the dissimilar resources, which requires a larger number of resource pools, and vice versa for a small-sized institution.

Resource Complexity: Frequency of resource allocation a resource may consist of several different classes that require grouping of similar types into a single resource pool.

The degree of complexity of resource-consuming activities: Other activities require more processes than other activities, and each process requires a different type of resource.

2. Determining the resources that activities consume from the resource pools: Once the resources and activities are identified, the resources that the activities consume must be determined
3. Allocate resource costs to activities: Calculation of theoretical and practical energy and fixed and proportional chargeback rates by which the costs of resource pools are allocated to activities once resource drivers have been

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identified, resources such as labor, electricity and equipment should be allocated to activities on the basis of the amount of resources consumed by the activities.

4. Allocate the cost of activities to the cost target: Calculate the cost of a cost target (product or service) by identifying activity drivers, the cost of activities must be assigned to the cost component based on the activities that the cost component consumes. Fixed costs can also be allocated based on the activity for making long-term decisions. Likewise, by distributing the cost of activities to the cost target, the idle capacity of the resources is determined, which represents the difference between the realized costs and the costs distributed according to the resource consumption accounting system.
5. Cost control and management: Through the analysis of the results of the (RCA) system, detailed reports are prepared on the types of resources in detail, whether these resources are specific or not for energy, and the difference between the actual and standard quantities is obtained. Performance can be checked individually or at the company level. Thus, it can be said that the RCA system helps managers to control and manage costs to achieve organizational goals.

Methodology and Procedures:

The descriptive analytical method was used to achieve the objectives of the study, the actual commissioning information was obtained within six months to take its monthly average as an indicator for calculating the cost of the bed, and then apply the Resource Consumption Accounting (RCA) model to the Emirates Crescent Governmental Hospital, a specialized hospital related to obstetrics and newborns.

Data Analysis and Discussion of Results:

Information about the Emirates Hospital:

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1. The Emirates Maternity Hospital has 39 beds distributed among the hospital's maternity departments.
2. The indirect costs during the month amount to 459,577 shekels.
3. The theoretical capacity for six months per month is 6636 women in the case of overnight entry, with an average of 1106 entries per month, while the actually utilized energy is 3716 cases of overnight entry, at a rate of 620 per month (with a family occupancy rate of 56%).

(1-1-2024-30-6-2024)- Period 6 months)

Items	Total		
Total number of subscribers	9116		
number of births	2672	617Caesarean births	2055normal delivery
Number of entries per month	3716		average monthly620
Theoretical energy of entry states	6636		average monthly1107
Average days of stay	1.4	-	-
family occupancy rate	%56	-	-
The number of treatment days	3921	654	Monthly
cure for one day	2401		
less than three days	1000		
less than 15 days	601		
Number of days to accommodate	7059		
The number of sleeping beds	39		
bed turnover rate	94.8		
total operations	1195		

Cost Calculation Steps:

1. Measuring the total cost of the traditional approach in the case of delivery, whether through natural delivery or cesarean section and surgery in a large way.

Average indirect cost per day = Estimated indirect costs ÷ Estimated number of patient days

= 459577 ÷ 654 days/medicine

= 702 shekels/day of medication

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Table 1

Statement	Total Cost for a Bed Per Day
Indirect cost: Number of days x average cost of the day 1Day702 × 3Day702 ×	702 2106

2. Measuring the total cost using resource consumption accounting, in the light of a set of additional information (from A to E):

A. A detailed statement of the indirect costs items (459577) shekels (41% of the total)

Table 2

#	Items	NIS Value	#	Items	NIS Value	Total
1.	computerized information systems	1024	10	Phone	1487	
2.	Salary cost	308919	11	water consumption cost	205	
3.	Prints and stationery	2357	12	Cleaning costs + contracts	11316	
4.	Maintenance and repair	7271	13	Food	3129	
5.	Destruction of medical devices, equipment and tools	49771	14	Medicines	22167	
6.	Clothes and fabrics	5396	15	laboratory materials	5700	
7.	Electricity cost	8641	16	Hospitality	145	
8.	Fuels (generators + cooking gas + medical gases	14976	17	medical missions	11906	
9.	Ministry materials and supplies	2174	18	Transportation expenses	2993	
Total		400529			59048	459577

B. The previous items were divided into 4 pools of resources, and the costs were divided into fixed and proportional, with a statement of the agreed stimulus, as follows:

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Table 3: Management Cost Complex

#	Statement	Fixed Cost	Proportional Cost	Cost Catalyst	Total
1.	board of directors	8000	1553	Number of entries	9,553
2.	Gynecologist	80000	7191	Number of entries	87,191
3.	Anesthesiologists	12000	2514	Number of entries	14,514
4.	Nursing	88560	20987	Number of entries	109,547
5.	computerized information systems	1024	0	Number of entries	1024
6.	Administration (staff, workers, security)	76000	10674	Number of entries	86,674
7.	Hospitality	145	0	Number of entries	145
Total		265729	42919	Number of entries	308,648

Table 4: Support Medical Services Complex

#	Statement	Fixed Cost	Proportional Cost	Cost Catalyst	Total
1.	To Disinfect	1500	0	Number of entries	1500
2.	Labs	5000	700	Number of entries	5700
3.	Medical Missions	10000	1906	Number of entries	11906
4.	Medicines	20000	2167	Number of entries	22167
Total		36500	4773	Number of entries	41273

Table 5: Building Cost Complex

#	Statement	Fixed Cost	Proportional Cost	Cost Catalyst	Total
1.	Fuel + Cooking Gas + Medical Gas)	13000	1976	Operating hours	14976
2.	Destruction	49771	0	Operating hours	49771
3.	Maintenance And Repair	7271	0	Operating hours	7271
4.	Cleanliness	11316	0	space	11316
5.	Electricity	6000	2641		8641
Total		87358	4617		91975

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Table 6: Combined Daily Costs

#	Statement	Fixed Cost	Proportional Cost	Cost Catalyst	Total
1.	Water Consumption	205	0	number of sick days	205
2.	Telecom	1487	0	number of sick days	1487
3.	Stationery And Prints	2000	357	number of sick days	2357
4.	Clothes And Fabrics	4000	1396	number of sick days	5396
5.	Food	2500	629	number of sick days	3129
6.	Ministry Materials And Supplies	1600	574	number of sick days	2174
7.	Transportation Expenses	2000	933	number of sick days	2933
Total		13792	3889	number of sick days	17681

C. After conducting extensive and extensive observations and interviews, it became clear the possibility of dividing the activities that are implemented in the hospital into 8 activities as follows:

Table 7

#		Activity			Activity
1.	A1	Entry And Exit Activity For The Lady	6	A6	Examination of the patient and review of the analysis by the anesthesiologist
2.	A2	Outpatient Medical Examination	7	A7	(Surgery) Department of Operations
3.	A3	Medical Examination Of The Patient In The Reception And Emergency	8	A8	Departmental Nursing Services
4.	A4	Laboratory (Laboratory) Tests Of The Patient			
5.	A5	X-Ray Work (U.S And Planning)			

D. A matrix showing the benefits of activities from the four resource pools, where the numbers indicate the catalyst for the allocation of proportional costs, and the presence of an X sign means the distribution of fixed costs and we assumed to facilitate equal:

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Table 8

Resource Pool	A1	A2	A3	A4	A5	A6	A7	A8	Total
1-1	X	X	X	X	X	X	X	X	X
2-1	20	20	20	0	0	0	20	20	100
3-1	0	0	0	0	0	70	30	0	100
4-1	10	15	15	0	15	15	20	30	120
5-1	X	X	X	X	X	X	X	X	X
6-1	X	X	X	X	X	X	X	X	X
7-1	X	X	X	X	X	X	X	X	X
1-2	0	0	0	0	0	0	100	0	100
2-2	0	20	20	40	0	20	20	20	140
3-2	0	X	X	X	0	X	X	X	100
4-2	0	10	10	0	0	20	30	50	120
1-3	10	10	10	20	10	10	30	40	120
2-3	X	X	X	X	X	X	X	X	X
3-3	X	X	X	X	X	X	X	X	X
4-3	X	X	X	X	X	X	X	X	X
5-3	0	0	0	20	10	0	60	10	100
1-4	X	X	X	X	X	X	X	X	X
2-4	X	X	X	X	X	X	X	X	X
3-4	20	20	20	30	10	10	10	20	140
4-4	0	0	0	0	0	0	50	50	100
5-4	0	0	0	10	10	0	40	40	100
6-4	X	X	X	X	X	X	X	X	X
7-4	X	X	X	X	X	X	X	X	X

E. It was possible to measure the time required for the eight activities per hour over a 24-hour period (overnight) as follows:

Table 9

	Activity	Estimated Time Required For Activity (Hours)
A1	Entry and exit activity for the lady	Hour
A2	Outpatient medical examination	Hour
A3	Medical examination of the patient in the reception and emergency	Hour
A4	Laboratory (laboratory) tests of the patient	Hour
A5	X-ray work (U.S and planning)	half an hour
A6	Examination of the patient and review of the analysis by an anesthesiologist	half an hour
A7	(Surgery) Department of Operations	Hour
A8	Departmental Nursing Services	18 hours
Total		24 hours

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The previous matrix in Table No. (8) Shows the activities benefiting from the four resource pools, where the numbers refer to the distribution of fixed costs and we assumed to facilitate as equally as possible.

1. A statement of the fixed costs distributed over the eight activities and for all four items

Table 10

Items	Fixed Costs	A1	A2	A3	A4	A5	A6	A7	A8	Total
1-1	8000	1000	1000	1000	1000	1000	1000	1000	1000	8000
2-1	80000	10000	10000	10000	10000	10000	10000	10000	10000	80000
3-1	12000	0	0	0	0	0	9000	3000	0	12000
4-1	88560	11070	11070	11070	11070	11070	11070	11070	11070	88560
5-1	1024	128	128	128	128	128	128	128	128	1024
6-1	76000	9500	9500	9500	9500	9500	9500	9500	9500	76000
1-7	145	18	18	18	18	18	18	18	19	145
Total	**265729**	**31716**	**31716**	**31716**	**31716**	**31716**	**40716**	**34716**	**31717**	**265729**
1-2	1500	0	0	0	0	0	0	1500	0	1500
2-2	5000	625	625	625	625	625	625	625	625	5000
3-2	10000	1250	1250	1250	1250	1250	1250	1250	1250	10000
4-2	20000	0	3000	5000	0	0	2000	2000	8000	20000
Total	**36500**	**1875**	**4875**	**6875**	**1875**	**1875**	**3875**	**5375**	**9875**	**36500**
1-3	13000	1625	1625	1625	1625	1625	1625	1625	1625	13000
2-3	49771	6221	6221	6221	6221	6221	6221	6221	6224	49771
3-3	7271	908	908	908	908	908	908	908	915	7271
4-3	11316	1414.5	1414.5	1414.5	1414.5	1414.5	1414.5	1414.5	1414.5	11316
5-4	6000	750	750	750	750	750	750	750	750	6000
Total	**87358**	**10918.5**	**10918.5**	**10918.5**	**10918.5**	**10918.5**	**10918.5**	**10918.5**	**10928.5**	**87358**
1-4	205	25	25	25	25	25	25	25	30	205
2-4	1487	185	185	185	185	185	185	185	192	1487
3-4	2000	250	250	250	250	250	250	250	250	2000

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4-4	4000	200	250	1000	250	250	250	800	1000	4000
5-4	2500	0	0	150	150	200	200	600	1200	2500
6-4	1600	200	200	200	100	100	100	300	400	1600
7-4	2000	250	250	250	250	250	250	250	250	2000
Total	**13792**	**1110**	**1160**	**2060**	**1210**	**1260**	**1260**	**2410**	**3322**	**13792**
Total	403379	45619.5	48669.5	51569.5	45719.5	45769.5	56769.5	53419.5	55842.5	403379

Using the data given in the previous tables, the proportional costs can be reallocated using the given cost motivators. For example, it was possible to allocate 2514 item cost (1-3) in proportion to the number of patients in the three activities in the ratio (70:30).

2. A table showing the proportional distribution of costs from items to activities (depending on the distribution of the cost incentive):

Table 11

Items	Proportional Costs	A1	A2	A3	A4	A5	A6	A7	A8	Total
1-1	1553	194	194	194	194	194	194	194	195	1553
2-1	7191	1438	1438	1438	0	0	0	1438	1439	7191
3-1	2514	0	0	0	0	0	1760	754	0	2514
4-1	20987	1749	2623	2623	0	2623	2623	3498	5248	20987
5-1	0	0	0	0	0	0	0	0	0	0
6-1	10674	1334	1334	1334	1334	1334	1334	1334	1336	10674
1-7	0	0	0	0	0	0	0	0	0	0
Total	**42919**	**4715**	**5589**	**5589**	**1528**	**4151**	**5911**	**7218**	**8218**	**42919**
1-2	0	0	0	0	0	0	0	0	0	0
2-2	700	0	100	100	200	0	100	100	100	700
3-2	1906	0	317	317	317	0	317	317	321	1906
4-2	2167	0	180	180	0	0	361	541	905	2167
Total	**4773**	**0**	**597**	**597**	**517**	**0**	**778**	**958**	**1326**	**4773**
1-3	1976	247	247	247	247	247	247	247	247	1976
2-3	0	0	0	0	0	0	0	0	0	0
3-3	0	0	0	0	0	0	0	0	0	0
4-3	0	0	0	0	0	0	0	0	0	0
5-4	2641	0	0	0	528	264	0	1585	264	2641
Total	**4617**	**247**	**247**	**247**	**775**	**511**	**247**	**1832**	**511**	**4617**
1-4	0	0	0	0	0	0	0	0	0	0

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2-4	0	0	0	0	0	0	0	0	0	0
3-4	357	50	50	50	82	25	25	25	50	357
4-4	1396	0	0	0	0	0	0	698	698	1396
5-4	629	0	0	0	63	63	0	251	252	629
6-4	574	71	71	71	71	71	71	71	77	574
7-4بند	933	116	116	116	116	116	116	116	121	933
Total	**3889**	**237**	**237**	**237**	**332**	**275**	**212**	**1161**	**1198**	**3889**
Total	56198	5199	6670	6670	3152	4937	7148	11169	11253	56198

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(2)

Table for the distribution of fixed and proportional costs Table No. (12)

Items	Fixed Costs	Proportional Costs	Total	A1	A2	A3	A4	A5	A6	A7	A8	Total
1-1	8000	1553	9553	1194	1194	1194	1194	1194	1194	1194	1195	9553
2-1	80000	7191	87191	11438	11438	11438	10000	10000	10000	11438	11439	87191
3-1	12000	2514	14514	0	0	0	0	0	10760	3754	0	14514
4-1	88560	20987	109547	12819	13693	13693	11070	13693	13693	14568	16318	109547
5-1	1024	0	1024	128	128	128	128	128	128	128	128	1024
6-1	76000	10674	86674	10834	10834	10834	10834	10834	10834	10834	10836	86674
1-7	145	0	145	18	18	18	18	18	18	18	19	145
Total	**265729**	**42919**	**308648**	36431	37305	37305	33244	35867	46627	41934	39935	308648
1-2	1500	0	1500	0	0	0	0	0	0	1500	0	1500
2-2	5000	700	5700	625	725	725	825	625	725	725	725	5700
3-2	10000	1906	11906	1250	1567	1567	1567	1250	1567	1567	1571	11906
4-2	20000	2167	22167	0	3180	5180	0	0	2361	2541	8905	22167
Total	**36500**	**4773**	**41273**	1875	5472	7472	2392	1875	4653	6333	11201	41273
1-3	13000	1976	14976	1872	1872	1872	1872	1872	1872	1872	1872	14976
2-3	49771	0	49771	6221	6221	6221	6221	6221	6221	6221	6224	49771
3-3	7271	0	7271	908	908	908	908	908	908	908	915	7271
4-3	11316	0	11316	1414.5	1414.5	1414.5	1414.5	1414.5	1414.5	1415	1415	11316
5-4	6000	2641	8641	750	750	750	1278	1014	750	2335	1014	8641
Total	**87358**	**4617**	**91975**	11165.5	11165.5	11165.5	11693.5	11429.5	11165.5	12751	11440	91975
1-4	205	0	205	25	25	25	25	25	25	25	30	205
2-4	1487	0	1487	185	185	185	185	185	185	185	192	1487
3-4	2000	357	2357	300	300	300	332	275	275	275	300	2357
4-4	4000	1396	5396	200	250	1000	250	250	250	1498	1698	5396
5-4	2500	629	3129	0	0	150	213	263	200	851	1452	3129

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6-4	1600	574	2174	271	271	271	171	171	171	371	477	2174
7-4	2000	933	2933	366	366	366	366	366	366	366	371	2933
Total	**13792**	**3889**	**17681**	1347	1397	2297	1542	1535	1472	3571	4520	17681
Total	403379	56198	459577	50818.5	55339.5	58239.5	48871.5	50706.5	63917.5	64589	67096	459577

(2) Measuring the cost per bed (24 hours)

Table 12

Activity	Fixed Costs	Proportional Costs	Total Costs	Estimated Stay Time (In Hours) (5)	Total Time Of Total Admissions 6,636 Women (Theoretical Capacity)	Average Cost Per Minute From Fixed Costs(9) =	Total Real Time (620 Women)	Average Cost Per Minute Of Actual Fixed Costs = 2/8	Average Cost Per Minute Of Proportional Costs 3/8=
1	2	3	4	5	6	7	8	9	10
A1	45619.5	5199	50818.5	1	1107	41.2100271	620	73.5798387	8.38548387
A2	48669.5	6670	55339.5	1	1107	43.9652213	620	78.4991935	10.7580645
A3	51569.5	6670	58239.5	1	1107	46.5849142	620	83.1766129	10.7580645
A4	45719.5	3152	48871.5	0.5	553.5	82.6007227	310	147.482258	10.1677419
A5	45769.5	4937	50706.5	0.5	553.5	82.6910569	310	147.643548	15.9258065
A6	56769.5	7148	63917.5	1	1107	51.2822945	620	91.5637097	11.5290323
A7	53419.5	11169	64588.5	1	1107	48.2560976	620	86.1604839	18.0145161
A8	55842.5	11253	67095.5	18	19926	2.80249423	11160	5.00380824	1.00833333
Total	403379	56198	459577	24	26568	15.1828892	14880	27.1088038	3.77674731

(4) Measuring the cost of one bed (24 hours):-

Fixed costs = 24 hours x 15.1828892 = 364 shekels

Proportional costs = 24 hours x 3.77674731 = 91 shekels

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Total bed costs = 364 + 91 = 455

(5) Actually measuring the cost of one bed (24 hours), regardless of idle energy: -

Fixed costs = 24 hours x 27.1088038 = NIS 650

Proportional costs = 24 hours x 3.77674731 = 91 shekels

Total bed costs for 24 hours = 650 + 91 = 741

(1) Measuring the cost of idle power:-

It represents the total fixed cost of unused energy = fixed cost of unused energy

487 entries x 24 hours x 15.1828892 = 177458

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Conclusions

Through the theoretical framework and the applied study, the researcher reached the following results:

1. The Resource Consumption Accounting (RCA) system provides useful information about service costs which can be used in making appropriate decisions.
2. Using the Resource Consumption Accounting (RCA) system leads to a correct determination of the cost of health services, including the cost of bed for overnight stays.
3. It provides appropriate information based on scientific bases, which leads to a fair distribution of costs and the abolition of non-value adding costs.
4. The Resource Consumption Accounting (RCA) system focuses on idle energy and eliminates or reduces it by separating fixed and variable costs in resource pools, which gives more clear and objective cost data in allocation compared to traditional systems.
5. The application of the resource consumption accounting system helps to provide a comprehensive view of how to optimally utilize the resources of activities, which leads to an increase in the efficiency of those activities within the Emirates Crescent Hospital.
6. Resource consumption accounting system The production departments are charged exclusively with the consumed costs of the resources, which provides an accurate basis in the allocation of costs, and that this allocation makes the cost of products more competitive, because the pricing process for those services is done in a correct manner.
7. The percentage of energy utilization in relation to fixed costs is 56% of the total costs, and there are untapped fixed costs of 44%, which indicates that there is idle energy in the hospital as a result of not using resources correctly.

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8. The percentage of idle capacity in the hospital according to the resource consumption accounting (RCA) system reached 44% of the total costs, which amounted to (177458) shekels.

Recommendations

In light of the previous study, the researcher recommends:

1. The necessity of implementing the Resource Consumption Accounting (RCA) system of the Ministry of Health, as it addresses the problems of random allocation of the current traditional systems, as well as solving the problem of indirect costs in a better manner and distributing them in a more equitable manner.
2. Senior management should realize the advantages that are achieved from the application of this system, and therefore it is necessary to provide the appropriate factors that allow its application, such as following the strategy of continuous training of employees in qualifying and training courses and others.
3. The necessity of establishing an independent department for calculating the cost according to the modern scientific foundations, which helps in providing accurate information that helps in making rational decisions and hence the good pricing of the provided health service.

References

[1]Al-Hussein, Muhammad Khaled. (2016 AD). Resource consumption accounting and its role in managing the cost of health services (unpublished master's thesis). Sudan University of Science and Technology.2. Sorour, Manal, Miad, Hamid Ali. (2017 AD). The role of accounting for resource consumption in energy optimization. Journal of Baghdad College of University Economics, 1(51), 35-61

[2]Al-Qahtan, Muhammad. (2018 AD). Measuring unused energy using the resource consumption accounting approach in order to improve the quality of cost information (applied study). Journal of Social Studies, 24(2), 61–97.

[3]Al-Rawi, A. M., & al-Hafiz, H. A. (2018). The Role of Resource Consumption Accounting (RCA) in Improving Cost Management in the Jordanian Commercial Banks. International Journal of Economics and Finance, 10(10), 28–39.

[4]Bhatt, P. J. (2014). Resource Consumption Accounting (RCA): An ABC of Overheads. Midas Touch International Journal of Commerce, Management and Technology, 2(10), 1–12.

[5]Blocher, E. J., Stout, D. E., & Cokins, G. (2010). Cost management: A strategic emphasis. Includes index.

[6]Chakraborty, P. K. (2008). Resource Consumption Accounting-Cost Management System of the Future. Management Accountant-Calcutta-, 43(6), 442- 459.

[7]Dey, S., Kumar, K. A., & Mazumder, P. (2014). COST AND MANAGEMENT Resource Consumption Accounting. 1–21.

[8]El-Shahawi, Salah Ahmed Mohamed. (2014 AD). The effectiveness of the Resource Consumption Accounting (RCA) model as one of the proposed models for developing the utility of cost information and energy management" Journal of the Faculty of Commerce for Scientific Research - Faculty of Commerce - Alexandria University, Journal of the Faculty of Commerce for Scientific Research - Faculty of Commerce - Alexandria University, 51(1), 395- 431.

[9]MALIK, Y. S., ALI, A. M. M., & OJAH, H. K. (2019). The Effect of Resource Consumption Accounting on Accounting Pricing Decisions-An Exploratory Study in the Men’s Clothing Factory in Najaf. Journal of Economic, Administrative and Legal Sciences, 3(13), 1-25

[10]Perkins, D., & Scott Stovall, O. (2011a). Resource consumption accounting-where does it fit? Journal of Applied Business Research, 27(5), 41–52

[11]Scott, P. (2019). Introduction to Management Accounting. Oxford University Press, USA

[12]Shuaisha, Mukhtar Ismail. (2016 AD). Accounting for resource consumption as an input to develop cost management systems in light of the modern manufacturing environment. Journal of Business Science, 2(1), 413 - 446

[13]Sorour, Manal, Miad, Hamid Ali. (2017 AD). The role of accounting for resource consumption in energy optimization. Journal of Baghdad College of University Economics, 1(51), 35-61.

[14]Tse, M. S. C., & Gong, M. Z. (2009). Recognition of idle resources in time-driven activity-based costing and resource consumption accounting models. Journal of Applied Management Accounting Research

[15]White, L. (2009b). Resource consumption accounting: Manager-focused management accounting. Journal of Corporate Accounting & Finance.