



Calculate the cost of remedial service according to the system costs based on activities (ABC) in the General Hospital Khourma government of KSA (An Empirical Study on the Department of Microbiology)

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Abstract: The study aims to calculate the cost of therapeutic Service Department of Microbiology Department of medical tests (lab) at Khourma General Hospital, according to the government system (ABC) and by applying the model(Cooper Two-Stages Activity Based Costing System). The researcher on exporters presidents to collect data in order to achieve the objectives of the study, secondary sources and represented in books, magazines, brochures, theses, as accreditation, mainly on flyers and records of hospital Khourma public government whether they are available at the hospital or the Ministry of Health Saudi Arabia, either primary sources represented in the action Interviews with many of the staff) managers and heads of departments (at the hospital and those who associated their subject of study. consists community study of hospital Khourma public government, while the sample of the study, which was applied the proposed model it is in the Department of Medical Laboratory (Department of Microbiology) in a hospital Khourma public government. researcher reached after applying the tools of the study to answer the main problem for the search, which is in a range of questions: Does the drafting system (ABC) in a hospital Khourma public government to allocate indirect costs and calculate the cost of the service treatment more accurately? and to provide information on financial and non-financial private services therapeutic? Will help in making administrative decisions sound? Are there obstacles substantial without the application system (ABC) in a hospital Khourma public government? addition to reach a set of results descriptive relevant searches with recommendations that could contribute to the cognitive domain your subject matter.

[Almoutaz M, Bushara N, Zidan A Z. **Calculate the cost of remedial service according to the system costs based on activities (ABC) in the General Hospital Khourma government of KSA (An Empirical Study on the Department of Microbiology)**. *Life Sci J* 2021;18(10):59-76]. ISSN 1097-8135 (print); ISSN 2372-613X (online). <http://www.lifesciencesite.com>. 9.doi:[10.7537/marslsj181021.09](https://doi.org/10.7537/marslsj181021.09).

Keywords: System (ABC), engine cost, total cost, target cost, General Hospital Kherma government, the cost of remedial service

1. Introduction

The problem of allocating indirect costs to products or services of the most important problems that were and are still the subject of many studies and research accounting, and due to the failure of the system of traditional cost allocation in providing useful information accurate in measuring the cost of the product or service, for the purposes of planning and control (Christensen and Sharp 0.1993). In the circumstances of the great changes that have occurred in the modern business environment, and the increasing use of technology in the production process, and increase the proportion of indirect costs from the total costs of products or services, and increased competition among firms, the error in arriving at the cost of, or the use of inaccurate information in making pricing decisions, or add a new product, Aostavad product or another production

line, and determine the amount of production or purchase may affect the activity of established (cooper and kaplan, 1988, a) and (Mohammed 1991). It was the indirect costs before the enormous technical development in all walks of life does not pose only a small percentage (5%) of the total cost of any product or service (Abdul Karim and Alkhan 1997). But that may change after the entry of technical business environment in all its forms, and became ranging indirect costs of (25%) of the total cost of the product (Needles, 1999), which support the trend towards the development of systems, the cost of dealing with the changes that have occurred as a result of the use of technology, and the consequent the increase of indirect costs dramatically, because of that most administrators felt that cost management must be through monitoring activities and not products (Fakhoury and al-Dulaimi, 2002). That the

process of allocating indirect costs to products or services are to serve a variety of purposes, including determining the cost of generating unit or service, assist management through the provision of appropriate information and useful for the purpose of management tasks efficiently, the comparison of the alternatives in order to take the necessary administrative decisions. To achieve these goals must be characterized by the methods and bases used in the allocation process in a scientific way so that the results relevant and useful, and therefore there have been many studies and research aimed at better allocation of indirect costs by selecting the costs of the activities at the hands of engineers, system (ABC), and many researchers such as (cooper and Kaplan, 1988, b) and (Gabram& Estrin, et al., 1997). Hence the need to demonstrate how to calculate the cost of remedial service according to the system (ABC) in a hospital Khourma general government in the Department of Almikrubiolgi, in order to know the true cost of service and compare it with the level of performance provided to the patient, in return for a government commitment to complete at a cost of receiving a treatment service.

1.1 Problem of the study:

The problem can be formulated in a range of the following questions:

1. Does the formulation of system (ABC) in General Hospital Kherma government to allocate indirect costs and calculate the cost of remedial service is more accurate?
2. Does the application (ABC) in the General Hospital Kherma government to provide information financial and non-financial private therapeutic services?
3. Does calculate the cost of the service of the Department of Microbiology therapeutic according to the system (ABC) in General Hospital Kherma government, helps in making proper management decisions?
4. Is there a substantial impediments to prevent the application of the system (ABC) Kherma General Hospital in government?

1.2 Objectives of the study:

This study seeks to achieve the following objectives:

1. identify the most important studies that have applied the accounting system (ABC) in all sectors in general and hospitals in particular.
2. Application model (Cooper Two-Stages Activity Based Costing System) to show how to calculate the cost of remedial service in the Department of Microbiology, General Hospital Kherma government.

3. Provide the necessary information to enable the management of hospitals, the Ministry of Health Saudi Arabia, to make rational decisions.
4. Compared to the cost of the service therapeutic calculated for Department of Microbiology at the General Hospital Kherma government in order to know the true cost of service and compare it with the level of performance provided for the patient compared to the Saudi Ministry of Health (the government) to comply fully with the cost of getting a therapeutic service
5. Identify obstacles that may prevent the application of the system (ABC) in General Hospital Kherma government.

1.3 Scientific hypotheses of the study:

To achieve the objectives of the study, and to answer the previous questions to resolve the issue raised in the study, it has been formulated the following hypotheses:

The first hypothesis:

Application system (ABC) in the General Hospital Kherma government, leading to the allocation of indirect costs and calculate the cost of remedial service more accurately.

The second hypothesis:

Application system (ABC) in the General Hospital Kherma government, leading to the provision of financial information and non-financial private therapeutic services.

The third assumption:

Calculate the cost of remedial service to the Department of Microbiology and according to the system (ABC) in the General Hospital Kherma government, lead to sound management decisions.

Fourth hypothesis:

There are substantial obstacles to prevent the application of the system (ABC) in the Department of Microbiology, General Hospital Kherma government.

1.4 The limits of the study:

The study was limited to calculate the cost of remedial service according to the system costs based on activities (ABC) in the General Hospital Kherma government in Saudi Arabia.

1.5 Definition of terms:

System (ABC):

Sophisticated style that seeks to achieve accuracy in the allocation of indirect costs by selecting and assembling activities in the complexes of the cost with the use of many of the causes of cost appropriate to track those costs to activities, including target cost (products or services), which

leads to more understanding of the costs, and get Information on the cost-more accurately, help management in the decision-making process of administrative governance.

Drive Cost:

Any event that causes the change in the total cost of the activity, or any causal factor increases in the total cost of the activity.

Activity:

Is a process or procedure that causes achievement or implementation of work within the organization.

Complexes Cost:

Are receptacles are grouped cost of activities by, so devoted to each of the cost of heterogeneous pot of its own, and each pot on a group of the elements of the costs required to perform a range of acts or activities of the Sub-homogeneous, and the condition of assembly activities heterogeneous and is essential for the success of the process of applying the system (ABC).

The goal of cost:

Is all we need to calculate the cost of about it, such as: the production line, section, management, geographic region.

1.6 View the methodology used in the study:

The researcher used in the study, a comprehensive scientific method in order to which he can collect the facts and scientific axiom that relate to the objectives and hypotheses of the study through the different research approaches, and can view this methodology as follows:

1.6.1 The study community:

The study population consists of General Hospital Khourma government, and that for many reasons, including:

1. Considered an appropriate environment, to use computerized models in all departments within the hospital, which provides data and information necessary for the application of the system (ABC).
2. Possession of many sections of developed specialized therapeutic, and it prepares for the possibility of the application of the system (ABC) inside one of its sections.
3. Willing cooperation of the medical staff, financial and administrative during the preparation of the study, and this of course is reflected in the study and its results in the affirmative.

4. Provides statistical data and the necessary financial, from different disciplines and fields.
5. The patient in the government hospitals do not pay a contribution in return receiving a therapeutic service, as well as demonstrate the true cost of service treatment to help Saudi Ministry of Health to improve the quality of service and the development of therapeutic, based on a sound scientific basis. This is unlike what is happening in the private hospitals that receive the therapeutic value of the service entirely from the patient.

1.6.2 The study sample:

Is applied to model (Cooper) proposed a circle of medical tests (Department of Microbiology) in a hospital Khourma general government, and that the cooperation of the medical staff, financial and administrative, and the availability of the financial statements and the necessary statistical study, as well as the magnitude of the activities that are practiced in this section and the degree of complexity of the high for these activities and high the proportion of indirect costs in it.

1.6.3 Study tool:

Approach has been the case study for the application of model (Cooper Two-Stages Activity Based Costing System) Hospital Khourma Department of Microbiology, and in this study was used only sloth Microsoft Excel in order to carry out the calculation and allocation of costs for medical services provided in the Department of Microbiology. The main reason for the application model (Cooper) on this study is to do many of the scholars and researchers to adopt applied in studies testing the application system (ABC), and the mention of them, for example, but not limited to (Aaburh.2005) in his study (application system, (ABC) in Jordan Islamic hospital section and blood clotting, and the Department of Radiology, (Roztockit, et al. 2004) In their study. A Procedure for Smooth Implementation of Activity-Based Costing in Small Companies. Supports the application form (Cooper) is proposed in two phases within eight steps are:

First stage:

Phase analysis of the costs and activities: This stage includes the first two steps of the model (Cooper) as follows:

First step:

Analysis of the costs incurred by the hospital to provide treatment services, the department of medical tests (lab), and then assemble these costs within the cost of complexes, so that the elements of

a single homogeneous group with each other in terms of the characteristics and qualities.

Second step:

Identify and analyze the main activities practiced for the provision of services in various therapeutic department of medical tests (lab), and then assembled within the complexes activities or individually so that the activities of one group special status and one of the cost centers in the hospital.

Second stage:

The stage of a chargeback on activities and services, and includes this stage steps of the third until the eighth, and within this phase are loaded costs contained within complexes cost activities or complexes activities, using the causes of cost identified in the first step for each set of complexes cost, Then download the costs of each activity of the same group for the department of medical tests (laboratory), the therapeutic services that offer of

these sections, using cost causes that have been identified in the second step. the causal relationship.

1.6.4 Sources of data collection:

Been relying on the main exporters to collect data for the purpose of achieving the objectives of the study are:

First, secondary sources, and these sources consisted of books, magazines and pamphlets on the subject of the study, in addition to university theses, and has also been relying mainly on flyers and records of the General Hospital Kherma government, whether they are available at the hospital or the Ministry of Health Saudi Arabia.

Second, primary sources, and represented in the interviews with many of the staff (managers and heads of departments) who is linked to their subject of study, and are shown in Table (1) Total field visits and personal interviews to analyze the activities and costs in hospital Kherma general government.

Table (1) Total field visits and personal interviews

S	statement	days	hours
1	Interview with financial and administrative manager.	12	15
2	Interview with the director of the laboratory.	15	30
3	An interview with the head of the accounting department at the hospital.	10	10
4	An interview with the head of the Department of Microbiology.	15	10
	Total	52	65

Source: Preparation researchers

2. Previous studies:

Study (Lawson, 1994) focused on the importance of the statement system (ABC) for the management of the hospital. The results show that the number of U.S. hospitals that implements the system is increasing continuously. There are many benefits of the application of the system (ABC), as it helps to provide hospital management with useful information for planning and control costs better, help managers to manage their installations more efficiently, and help in the sustainable improvement of hospital operations, giving the hospital a competitive advantage in the market for services health. The study recommended the application system (ABC) in hospitals because it gives the hospital a competitive advantage in the market of health services, and by offering the best service and the lowest costs.

Study (Abu Hija, 2001), entitled "System costs based on the basis of the activities of industrial companies in Jordan." This study aimed to identify the validity of the outputs of the cost of traditional systems used in these companies. And the validity and accuracy of the decisions made based on these outputs, and whether there is a waste of resources

available for adoption on the cost of traditional systems. The study found that there is a weakness in systems cost traditional method, through the conclusion the approval of most of the departments of the companies, the inaccuracy of the results of the cost of generating units, which are accounted for under these systems, and agreeing that it produces so it is taking administrative decisions wrong depending on this costs, and that there is a waste of economic resources available to the company in accordance with the regulations of traditional costs. The study recommended the application of a system based on the costs of activities, of what is involved to apply to get a more accurate cost of production units and take appropriate decisions based on the outputs are correct. And maintain the company's resources wastage delete activities that do not add value from its overall activities practiced within the company.

Study (Udpa, 2001) entitled "Analysis of the costs of activities a tool to determine the cost of health services and improve their quality." The researcher has been using the cost accounting system based on the activities, as a result of the inability the cost of traditional systems to determine the cost of

health care activities accurately and adequately. It was found that the system of cost accounting activities focus on the activities that have been cost exercise for the purpose of providing such care, depending on what you use the resources of these activities, rather than the size of redundancy in the exercise of the activity itself. When applying accounting system the costs of activities, it has to be done by identifying the key activities are to do in cost complexes. And then download overheads complexes own cost through the use of prompt an initial cost. And the use of a secondary prompt the cost to distribute these costs to health care systems. Based on the researcher was able to put the model to determine the cost of providing health services.

Study (Saleh, 2002) entitled "The entrance of accounting for the cost on the basis of activity as a basis for measuring the cost of health services in hospitals." And researcher in the study aims mainly to illustrate the use of cost accounting system based on activities to measure and optimize the cost of health services, and providing information to assist the administration in order to take the decision, and determine the prices of health services provided by private hospitals on the basis of accurate scientific. Have led the study to several results when applying the accounting system the costs of activities, most notably the possibility of overcoming the problem of allocating indirect costs, using a cost accounting system is based on activities in the extraction cost rates for each activity as the causes of the cost. Possibility of overcoming the problem of loading the capitalist through measurement and download the cost of fixed assets within the hospital costs of health services, And choose the method of consumption that are commensurate with the obsolescence factor some devices in hospitals, as well as the rates of utilization of available capacity out. The pricing on the basis of cost data benefit both the hospital administration and its clientele and increase awareness of the costs.

Study (livens, et., 2003) aimed at the development of traditional cost system used in the radiology department at a Belgian university hospitals through the application system (ABC). To achieve the objectives of the study, the researchers follow the case study method for the application of the field of system (ABC) in the radiology department, where the model was used cooper's two-stages Activity Based Costing system)) The study concluded that the use of the system (ABC) leads to calculate the cost of service in the Department of Radiology more accurately, through his control of the indirect costs, in addition to this system leads to show any changes in the costs within this section.

Study (forrester, 2003) aims to apply the system (ABC) in emergency departments in

hospitals, and use it as a tool to improve the efficiency, performance through the system information that the system works to be provided, which will reflect positively on the competitiveness of the hospital in the labor market, in addition to its use as a tool for the development of strategic plans for these sections in the future. To achieve the objectives of the study were to follow the case study method for the application of the system (ABC) in the emergency department in a hospital in the U.S., where the RPR this hospital sizeable number of patients who enter this section. The study found several results of the most important, that the system (ABC) work to reduce the time required in the emergency department by three hours a day, also resulted in the application of the system (ABC) to redistribute activities among workers in the emergency department more accurately.

Study (Grandlich, 2004) entitled "The use of cost accounting activities in surgical operations," where the researcher that as a result of the intense competition in the health services sector in our time and the limited resources available, and the general trend among enterprises to reduce budget spending, it has to be making decisions right time for the purposes of maximizing profitability. The researcher concluded that the application of the system (ABC) in health facilities (hospitals) to enable them to contribute to the costs of determining accurately. And enable them to develop appropriate pricing system for services provided to patients. Identifying deviations price to suppliers. As well as giving detailed information on the costs of activities within the hospital, enabling it to compare the results with its competitors.

Study (Arnaboldi and lapsley, 2004) aimed to shed light on the nature of IT costs SOA-based mainly on the system (ABC) in the departments of Healthcare Organizations permanent change management. The study focused on the use of the work system (ABC) is the foundation of being the first to the administrative health care organizations to participate in benefit amounts of blood donated, Which in turn out to be more of a health service. The study concluded that the selection system (ABC) has led to access to the important result is that the proposed system was able to form a managerial capacity helped administrators avoid common administrative errors, and enabled them to provide sophisticated methods in the management and measurement of the costs of health care

Study (Martin, 2005) that the researcher sees the health services industry in the United States no less important than the rest of the industry. And that the cost accounting play a major role in the integration process between the accounting system

and make informed decisions and give the image a more complete and transparent about the performance. The study is mainly to explore the relationship between each of the cost-accounting system activities on the one hand and the four indicators to measure the performance of profitability, enhance revenues, and the determinants of cost, and social responsibility. It has also examined if the use of cost-accounting system activities by hospitals to achieve strategic objectives more than the traditional system. Where the study was based on the fundamental question, is to rely on the strategy of cost-accounting system activities will enhance the flow of revenue and cost reduction and correction of the profits with imparted greater commitment to the community?, And questionable sub is in the application of cost accounting activities affect the performance of the hospital, regardless of whether they are facilities-profit or non-profit?. The study found that the rate of application of cost accounting activities vary from one hospital to another, in hospitals, for-profit contributed to the application of the system to increase the amount of profit, which helped to increase the occupancy rate, and thus was Nusia fixed costs on the basis of the largest of the reviewers, in addition to its contribution to in censor the costs of operations in the hospital, especially during periods of high occupancy. As for hospitals, non-profit had no effect on the system to increase profitability, but it has strengthened the ability of these hospitals to manage the revenue optimally, helping in the process of deficit reduction in this type of facilities and reliance on their own resources.

Study (Krishnan, 2006) entitled "Application of cost accounting activities in higher education facilities." Researcher explained that the economy of most countries in the world at the present time has become dependent on the service installations such as insurance services, financial services, and services for the health sector, and the educational sector.. And that some of the facilities in these sectors suffered from bankruptcy due to lack of ability to control costs. Has been explained to the researcher that the use of cost accounting system based on activities leads to find the elements of better decision-making in service installations, especially in the stages of planning, control and decision-making, in addition to being an effective tool for tracking the cost of the product and the application of the concepts of total quality to measure the value added to the consumer. Researcher explained that the cost accounting system provides opportunities to reduce costs and to exclude any activities that do not lead to increase the added value of the product, leading to the provision of the resources available. The importance of the study of

the higher education sector suffering from the intensity of the competition, which requires a study of the costs of their activities to exclude activities that do not lead to add value without affecting the learning outcomes in terms of quality. The researcher found the application of cost accounting system based on activities is provided mainly to identify and accurately calculating the true cost of the product - the cost per student - and that it is necessary to apply this system to effectively find a competent officials be held accountable, Costs and to determine the activities that do not lead to added value and thus excluded without affecting the final output.

3. The theoretical framework for the study:

The system (ABC) concept relatively recent for hospitals, has appeared studies the application of the basic rules of the system (ABC) used in industrial plants to health care institutions in the areas of health care, only recently, as the majority of these studies have focused on the application of the system (ABC) narrowly, addresses the a section or a certain circle within a healthcare organization, Like do (Chan, 1993) examines the application system (ABC) to calculate the cost of laboratory tests, also studied (Ramsey, 1994) application system (ABC) on sections of radiology and nursing in hospitals, and also (Upda, 1996) as well as (James and Canby1995) system (ABC) at the Department of Radiology at the outpatient clinic medium-sized enterprises. System (ABC) helps health organizations in carrying out improvements, quality and efficiency (Waters, et al., 2003) and is characterized by a system (ABC) basic feature is that the accounting system (costs) and management at the same time, as it offers two types of information financial information, especially for activities and the cost of products or services, and private information on those activities (Turney and Stratton, 1992). It has become the expense of the cost of the service is more accurate in the health care environment of the nineties of the last century, a very important issue, since the system (ABC) is now used in several health institutions, including 20% of hospitals, the United States and Canada (west and west, 1997). Also, many of the hospitals, the health of America used system (ABC) in order to improve the management of its resources (Waters, et al., 2003), and the system provides (ABC) reliable and accurate information for decision-making strategy, which is for the pricing of the product or service, and profitability analysis, and improve processes (Christensen and Sharp, 1993).

And see (Garso, 2005) that the cooper and Kaplan forward system project (ABC) as an alternative to more convenient to customize the products or services from the traditional system and

has won System (ABC) in determining the cost of considerable interest in only whipped accounting and management alike, As an important tool to determine the cost of production and report them correctly and realistic, and avoids the shortcomings and criticisms against the traditional system of costs in light of the economic and technological variables that currently prevail environment installations (Alhbita.2002).

As seen (Ross, 2004) that the system (ABC) is used to increase the value of information to assist in decision-making, and through the precision in the allocation of costs indirect. Sees (Garrison and Noreen, 2003) that the information is the fuel that carries management traffic. At the beginning of this century sophisticated systems of cost accounting, appeared technical methods and modern management, such as: the production system on time (Just In Time, JIT) and control of the overall quality (Total Quality Control, TQC) system and flexible manufacturing, (Flexible Manufacturing system, FMS), and management system on the basis of activities (Activity Based Management, ABM) (Akawi 0.2004).

The system (ABC) a new method for the analysis of health care costs, as the health care industry is no longer in the environment, "fortified (Protected)" Understanding the true costs and where to consume resources are the focus of survival. (Gabram and Mendola, 1997) and has historically been used accounting applications in health care organizations primarily for the purpose of external reporting, financial reporting has also been used for the purposes of the preparation of the budget. (Greene and Metwalli, 2001). The spread system applications (ABC) in hospitals in North America and the United Kingdom since the late eighties of the last century, almost (King et al., 1994) and confirmed the study (Lawson, 1994) the increasing need for hospitals to implement the system (ABC) of Canada and the United States of America, and that the benefits of the system outweigh the costs of its application, as the improvement in the calculation of the cost of services provided to patients, the hospital will give a competitive advantage. The application system (ABC) determines the cost of the health service more accurately (West. and West, 1997). One of the difficulties faced by hospitals that most of the costs represent fixed costs due to the huge investments in buildings, but Needles, medical equipment, and employees' salaries high, which requires that the work of these hospitals, high production capacity until it reaches the break-even point, and in the case of increasing the operational capacity of the hospital, it faces the need to keep some beds (15%) of the emergency. (Tipgos and Crum, 1982).

Among the factors to be considered in system costs applicable to installations in general, and in hospitals, in particular, that there will be a return of the application of this system, which is to increase the return on investment, and savings in running costs, or avoid certain types of unnecessary costs, that is, benefits outweigh the cost. And that the system is able to monitor the cyclical changes that occur in actual costs, the current knowledge of the mechanism of performance, and provide feedback (Feed back) useful in planning for the future efficiently (Rany, 1998). See (Gabram and Mendola, 1997) It is to ensure the success of the application system (ABC) in the health care environment must take into account the following factors:

- i. Awareness of senior management or heads of departments of the benefits of the application system (ABC).
- ii. Ensure that appropriate information systems are in place to track the details of the cost of the product or service (level)
- iii. Identify sectors of the service line, which will be applied by the study system (ABC)
- iv. The involvement of front-line staff directorial (in determining the causes of the cost.
- v. Initiatives include system (ABC) within the great efforts to change the culture (such as: the need to bring in doctors to measure the time required for patient care directly).

3.1 Definition System (ABC):

Knew (cooper and Kaplan, 1988) and (Argyris and Kaplan, 1994) system (ABC) that is a strategic tool for the facility help in getting the cost of more accurate information about the profitability of operations, products and services and established customers, which contributes in making many of the decisions of the task, including pricing decisions, marketing and design of the product or service, and employment decisions resources. "either (Gering, 1999, b) knew system (ABC) that serves as a tool to understand and allocate costs and help Almnc ah In order to become more efficient and more effective.. It is also an important tool focuses on aspects of the inefficiencies that appear in the operational processes (Gering, 1999, a) while (Grandich, 2004) known (ABC) as an art or tactic accounting works to help enterprises determine the actual cost associated with the products and services that Based on the resources consumed by the activities that have been carried out for the completion of these products and services.

In light of the above can be defined as a system (ABC) as a sophisticated style that seeks to achieve accuracy in the allocation of indirect costs by selecting and assembling activities in the complexes

of the cost with the use of many of the causes of cost appropriate to track those costs to activities, and then to the target cost) products - or services (which leads to more understanding of the costs and obtain information more accurate cost-assist management in the decision-making process of administrative governance.

3.2 System (ABC) in hospitals:

Hospitals are one of the health facilities and services, which occupied at the present time, An important part of the main industries in many countries of the world, accounting for a prominent role in the economic life (Mater Zuelv 0.2003) arose the need to apply the system (ABC) service in hospitals as a result of two main factors. (Cooper and Kaplan, 1999):

1. Very significant changes during the last two decades of the twentieth century in the competitive environment faced by most service installations, and the freedom of the price situation, and identify a variety of products or services performed.
2. Director of the service installations need the information to improve the quality, timeliness and efficiency of the activities performed by, and for the understanding of the exact cost and profitability of their products and services, and individual clients.

3.3 Activities Determination in Hospitals:

Can be divided into activities performed within the hospital to provide medical services to the five main groups are:

1. Activities at the unit level of service (the patient): Unit-Level Activities:

Activities associated with providing a therapeutic service to the patient directly, and is proportional to occur directly proportional to the number of patients, and the costs of these activities include the direct costs (materials and labor) and any cost can be tracked easily, such as: wages of doctors, nurses and medicines,.... Etc.

2. Activities at the level of the payment service group of patients: Activities Batch-Level:

It is the most active its associated group of patients (patients eyes, heart patients, etc.) regardless of the number of patients each group (5-20 patient, for example), such as: creating room diagnosis, and the creation of the operating room, and examination of patients, etc., all of this represents the cost of complexes activity. The cost of these activities are common to all the patients within the same group, and therefore the causes of the costs of these activities are respectively: the number of times to

create room diagnosis, the number of times to create the operating room, the patient examination time.

3. Activities on the level of service in general (Sections therapeutic disciplines): Sustaining-Level Activities Service:

It is activities related to the Department of specialty specific, and do not benefit the rest of the other sections, for example, the Department of the heart, with diversified activities, such as catheters, and installation of the arteries, and open-heart surgery, and is loaded these costs on the section on the use of the causes reasonable cost, such as: time catheter, the time of installation of the arteries, and time to work. As well as the Department of Ophthalmology vary the curative activities offered, such as: vision correction laser, and installation of contact lenses and reticulocytes, and remove the blue water, the installation of the corneas, and are loaded these costs on the section on the use of the causes reasonable cost, such as: time correction, the number of contact lenses, and the number of corneas.

4. Activities at the level of the client (patient specific): Customer-Level Activities

It is activities related to the needs of a particular patient does not benefit patients Others, such as cosmetic surgery (eg, rhinoplasty, and beautify the chest when the ladies), as each surgery involving patients determinant different from another patient - and hair transplants, liposuction, etc.. And these costs are loaded on the causes the patient's designated using appropriate cost, such as: the size of the nose in centimeters, and the number of hairs in a single centimeter, and the size of fat as a basis for linking these costs to the patient.

5. Activities at enterprise level as a whole (the hospital) Activities Facility-Sustaining-Level:

It is the activities required to support the operations of the hospital as a whole, and the provision of infrastructure management and technical that make the process of service delivery therapeutic potential, such as the salaries of management, and consumption of equipment, maintenance of equipment and machinery, and heating and lighting, and public relations, hygiene and security, and the buffet, and processing reports. And the difficulty of allocating the costs of these activities are for all therapeutic services, (Common Cost) treated as costs in general and thus are resolved lump sum from the income statement for all service lines as costs period (Period Costs) or are allocated randomly.

3.4 feasibility of measuring the cost system (ABC) in hospitals:

Just as motive a lot of researchers from the system (ABC) in industrial plants, was also in the hospital, because this system has helped to develop the system costs, so as to reflect all the activities required to provide the service therapeutic for the patient, concluded that the information cost generated from the application of this system helped the hospital management in the following areas:

1. To measure and improve the efficiency of the performance of sections of the hospital.
2. Identify and clarify rings activities, and relied upon in support of the administration's policy in the field of total quality management.
3. Cost management and strategic planning.
4. Rational decision-making.
5. Linkage between the cost and the reason which helps to ease the analysis of the costs of

outputs, and understand how the consumption of resources.

4. Applied study:

The following is a detailed explanation of the mechanism of the application system (ABC) model using (Cooper Two-stages activity based costing system) in the Department of Microbiology:

The first phase (phase analysis of the costs and activities):

The first step (to identify and analyze costs):

The table shows the number (3) Average monthly costs for each of these groups, and a reasoned cost for each group, and the user to download these costs on activities. Been calculated average monthly cost per set as follows:

Average monthly cost per set = Total annual costs of the elements of the group / number of months of the year (12).

Table (2) Average monthly cost and the cost of the complexes causes the cost of a Department of Microbiology

Complexes cost	Total cost for the laboratory	The total cost of the Department of Microbiology	Average monthly cost of Microbiology Department	Reasoned cost
Set the costs of disposables	954260	76341	6362	Size use activity
Set the costs of salaries and wages	684137	25200	2100	The number of workers on the activity
Set the costs of public services	164981	9600	80	Utilization ratio
Group maintenance costs	320670	1320	110	Utilization ratio
Group rental costs	6000	600	50	Area / sqm
Collection costs sporadic	35127	3569	297	Evenly
Set the costs of the reception and Accounting	76383	5346	446	Number of illness / month
Total	2241558	121976	10165	

The source: Preparation of researchers

The second step (analysis activities):

The Table (2) shows a summary of these activities, and a reasoned cost for each activity, and the user to download the costs of these activities on the medical examinations provided, were obtained

this information through field visit and assist the director of the laboratory, and the Head of the Department of Microbiology, in addition to the head of the accounting department (administration Finance).

Table (3) Summary of activities and reasoned cost for each activity

Serial	Activities	Reasoned cost
1	The withdrawing the sample collected	The number of samples / month
2	Receive the samples, recording and distribution and results	The number of samples / month
3	Pasting the sample on the slide and dried	The time required to complete the activity
4	Dye sample	The time required to complete the activity
5	Wash and dry the sample	The time required to complete the activity
6	Read sample	The time required to complete the activity
7	Put the sample in a special flasks	The time required to complete the activity
8	Prepare food for the growth of bacteria	The time required to complete the activity
9	Cultivation of the sample	The time required to complete the activity
10	Put the sample in the device immunity	The time required to complete the activity
11	Control sample and read	The time required to complete the activity
12	Examination sensitivity and readings	The time required to complete the activity
13	Advanced tests to determine the type of bacteria and their attributes	The time required to complete the activity
14	Enter the result	The time required to complete the activity
15	Audit result	The time required to complete the activity
16	Print result	The time required to complete the activity

The source: Preparation of researchers

Notes through the table (3) that the cause of the cost (the time required for the completion of the activity) is used in most of the activities, because these activities are provided through a cadre of human with laboratory computerized to provide a service of medical tests, and therefore it is better

reasoned the cost can be on the basis that the carrying costs activities on services.

While Table (4) shows the tests carried out by the Department of Microbiology, which is about (15) Examination as follows:

Table (4) Tests provided in the Department of Microbiology

Service Description	Service Code	Service Description	Service Code
Vaginal Swab	M 13	Gram Stain Test	M02
Ear discharge culture	M 14	Blood Culture	M04
Urethral culture	M 16	C.S.F Culture	M05
Pleural fluid culture	M 18	PUS C/S	M07
Cervical culture	M 23	Sputum C/S	M08
Swab culture	M 24	Stool Culture	M10
Ascetic culture	M 25	Throat swab	M11
		Urine culture	M12

The source: Preparation of researchers

The second phase (chargeback on the activities and services:

This phase includes the remaining six steps, summarized as follows:

The third step (the link between cost and activity):

In this step has been the link between the cost groups in the Department of Microbiology, and

activities that exercise it, and that by relying on the causal relationship of direct or indirect between cost and activity, has been building a matrix called the matrix dependency between cost and activity.

And the matrix (1) in Table (5) shows how to replace the signal (√) percentage rates of consumption for each activity in the Department of Microbiology.

Table (5) Replace the signal ($\sqrt{}$) percentage rates of consumption for each activity department of Microbiology – Activity.

Complexes cost / Activity	Complex consumables costs	Complex costs of salaries and wages	Complex costs of public services	Complex maintenance costs	Complex rental costs	Complex various costs	Complex reception costs and accounting
The withdrawal of the sample collected	0.4	0.03	0.13	0.07	0.16	0.06	
Receiving the samples, recording and distribution of results		0.06	0.09	0.07	0.11	0.06	1.00
Individual sample on a slide and dried	0.06	0.06	0.03	0.04	0.05	0.06	
Dye sample	0.06	0.06	0.03	0.04	0.05	0.06	
Wash and dry the sample	0.06	0.06	0.06	0.04	0.05	0.06	
Read sample		0.6	0.06	0.04	0.05	0.06	
Put the sample in a special flasks	0.16	0.06	0.09	0.07	0.05	0.06	
Central food preparation, for the growth of bacteria	0.10	0.06	0.13	0.04	0.05	0.06	
Cultivation of the sample	0.8	0.06	0.03	0.04	0.05	0.06	
Put the sample in the device incubation	0.20	0.06	0.13	0.18	0.05	0.6	
Control sample and read		0.6	0.03	0.04	0.05	0.06	
Examine the sensitivity and read	0.06	0.06	0.03	0.04	0.05	0.06	
Advanced tests to determine the type of bacteria and characteristics	0.18	0.06	0.06	0.11	0.05	0.06	
Enter the result	0.06	0.06	0.06	0.07	0.05		
Audit result	0.06	0.06	0.6	0.07	0.05		
Print result		0.06	0.06	0.07	0.05		
Total	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Source: Preparation researchers

The fifth step (calculating the cost of activity):

Been through this step to calculate the cost of each activity in the matrix dependency between cost and activity of the Department of Microbiology has been calculated cost by the following equation:

$$V A (t) = \sum M T (l) \times x (t, l)$$

Where:

V A (t) the total cost of the activity (t).

N = number of compounds that are cost

M T (l) complex cost (l).

X (t, l) = ratio in the cell that contains the entry (t) (l) in a matrix of dependency between cost and activity.

Based on the equation, the total monthly cost for the withdrawal of the sample and collected = $(0.04 \times 6362) + (0.3 \times 2100) + (0.13 \times 800) + (0.07 \times 110) + (0.16 \times 50) + (0.06 \times 297) = 455$ SR / month.

Matrix (2) in Table (6) shows the monthly cost for the rest of the activities where the notes from which to Starved costs in a column equal to the total monthly cost for a cost of its own.

Table (6) The monthly cost for the activities of the Department of Microbiology - matrix (2)

Complexes cost	Complex consumables costs	Complex costs of salaries and wages	Complex costs of public services	Complex maintenance costs	Complex rental costs	Complex various costs	Complex reception costs and accounting	Total cost of the monthly activity...
The withdrawal of the sample collected	254.48	63	104	7.7	8	17.82		455
Receiving the samples, recording and distribution of results		126	72	7.7	5.5	17.82	446	675.02
Individual sample on a slide and dried	381.72	126	24	4.4	2.5	17.82		556.44
Dye sample	381.72	126	24	4.4	2.5	17.82		556.44
Wash and dry the sample	381.72	126	48	4.4	2.5	17.82		580.44
Read sample		126	24	4.4	2.5	17.82		174.72
Put the sample in a special flasks	1017.92	126	72	7.7	2.5	17.82		1243.94
Central food preparation, for the growth of bacteria	636.2	126	104	4.4	2.5	17.82		890.92
Cultivation of the sample	508.96	126	24	4.4	2.5	17.82		683.68
Put the sample in the device incubation	1272.4	126	104	19.8	2.5	17.82		1542.52
Control sample and read		126	24	4.4	2.5	17.82		174.72
Examine the sensitivity and read	381.72	126	24	4.4	2.5	17.82		556.44
Advanced tests to determine the type of bacteria and characteristics	1145.16	126	72	12.1	2.5	17.82		1375.58
Enter the result		126	24	7.7	2.5	17.82		178.02
Audit result		126			2.5	17.82		178.02
Print result		126			2.5	17.82		178.02
Total	6362	1953	792	113.3	48.5	285.12	446	10000

Source: Preparation researchers

The sixth step (linking activities and services):

Been through this step linkage between the activities of the Department of Maikarhbiologi and services provided by this section, and so depending on the causal relationship of direct or indirect between the activities and service, Where they were building a matrix called the matrix dependency between activity and service (Activity - Service Dependence Matrix, ASDM), identified on the basis of the relationship between the activities and services, and cross-reference for this relationship ($\sqrt{\quad}$).

Step Seven: (determine the percentages of the effort in the matrix dependency between activity and service):

Been through this step to replace all signal ($\sqrt{\quad}$) in a matrix of dependency between the activity and service, a percentage representing the amount of effort spent on the activity to accomplish a specific examination by applying the following equation:

The proportion of services take advantage of the activities or total = service benefiting from activities or collected / Total benefiting from the services provided activities

Step Eight (account service costs):

The output of this step is the final result of the application of the system (ABC) where he was from which the cost of each service in the dependency matrix between the activity and the service of the Department of Microbiology, By applying the following equation:

The cost per unit = average monthly cost / rate tests monthly service

While Table (7) shows the cost per unit for each of the screening tests provided in the Department of Microbiology, Department of medical tests (laboratory) in Kherma General Hospital and after tests monthly rate calculated using the following equation:

Average monthly tests = number of annual checkups / number of months of the year (12)

Consequently, and according to the information contained in the table (7), the cost per unit of examination (PUS C / S) are:

Average monthly tests = $156/12 = 13$ monthly check

The cost per test = $488.5 / 13 = 37.58$ riyals.

Table (7) The cost per unit of the Department of Microbiology tests

Service	Total monthly cost of service	Average service times per month	Cost of service	Patient contribution
Gram Stain Test	488.5	18	27.14	3
Blood culture	761.7	69	11.04	6
C.S.F culture	761.7	27	28.21	6
PUS C/S	488.5	13	37.58	3
Sputum C/S	488.5	9	37.58	3
Stool culture	761.7	6	54.28	6
Throat swab	488.5	6	126.95	3
Urine culture	761.7	260	81.42	6
Vaginal swab	488.5	13	2.93	6
Ear discharge culture	761.7	7	108.81	6
Urethral culture	761.7	3	253.90	6
Pleural fluid culture	761.7	3	253.90	6
Cervical culture	761.7	4	190.43	6
Swab culture	761.7	68	11.20	6
Ascetic culture	761.7	4	190.43	6
Total	10165	510	19.93	

Source: Preparation researchers

Table (7) shows that the value of the contribution paid by the patient who has health insurance, ranging from (3) - (6) Real. For example, analysis of the type (Gram Stain Test) cost 27.14 riyals) in the corresponding patient pays three SR, Also analysis of the type (Blood Culture) hospital costs 11.04 riyals in the corresponding patient pays six riyals, as well as for analysis of the type (Urethral Culture) and analysis of the type (Pleural Fluid Culture) cost 253.90 riyals, In other words, there is no relationship between the cost of analysis and the value of the contribution paid by the patient. The analysis of the type (Urine Culture) hospital costs 2.93 riyals in the corresponding patient pays six riyals, any patient pays more than the cost of the analysis. As for the patient does not have health insurance paid (15) Real analysis for each of the tests mentioned above in the table and this amount is less than the cost of most analyzes calculated according to the system (ABC).

Based on the response and in the table (10) We emphasize that it must reconsider the value of the contribution paid by the patient who has insurance and the patient who does not have insurance, and linked to cost calculated according to the system (ABC).

5. Analysis results and test hypotheses:

5.1 Analysis of the results:

The researchers believe that the application of the system (ABC) in the General Hospital Khourma government achieves many of the objectives and advantages of which the most important:

1. The precise cost of medical services provided by the hospital, and thus modify the patient contribution by the Saudi Ministry of Health on the basis of sound scientific basis.
2. Activating the supervisory role provided by the application system (Cooper) proposed for adoption at an effective mechanism to track resource consumption by activities that are used to deliver therapeutic service, thus providing a more efficient system on the costs of these resources.
3. Efficiency in the use of economic resources available, as a result of the limited resources available, in addition to improving performance by excluding non-essential activities of the system as a result of re-engineering processes, and thus achieve the availability and efficiency in the delivery of medical services.
4. The challenge faced by the Saudi Ministry

of Health in the management and control of costs, as a result of the lack of information that makes it able to provide therapeutic service without affecting their quality, with increasing spending on health services institutions and hospitals.

On the other hand the researchers many obstacles during the process of applying the system (ABC) Khourma General Hospital in government, including the lack of cost information as required for the application of this system, where the information is available is a set of expenses is allocated to the sections of the hospital,, In the sense that all of what was spent on the hospital to provide medical services was treated as an expense in respect of the hospital as a whole, except with regard to salaries, wages and medical disposables, where treated these expenses as direct costs charged to the sections on their own level circle of medical tests (laboratory) as a whole, Have not been detailed sections on laboratory forcing researchers at the outset to deal with this data from information in the form and shape that suits the application process system (ABC) The Department of Microbiology has been loaded costs of direct and indirect, in order to do its own application process on these costs.

5.2.T test hypotheses:

5.2.1 The results of the first hypothesis:

The application system (ABC) in a hospital Khourma to the allocation of indirect costs and determine the cost of remedial service more accurately.

By analyzing the results can accept this hypothesis for being after the application of the system (ABC) in the Department of Microbiology at the Hospital Kherma government, has been to provide clear information and high-resolution mechanism for the allocation of indirect costs incurred by this section and then determine the cost of remedial service more accurately. As the analysis method adopted by the model (Cooper) proposed is highly dependent on the head of a causal relationship between cost and activity and between activity and service, Which provides for decision-makers whatever their location in the hospital database makes them able to determine the therapeutic service costs more accurately through causality with which this section and then lift the administration's ability to pursue these costs effectively.

The results of the second hypothesis: The application system (ABC) in a hospital Kherma to provide financial and non-financial private therapeutic services.

5.2.2 The results of the second hypothesis:

The application system (ABC) in a hospital Khourma to provide financial and non-financial private therapeutic services.

Through analysis of the results has been accepted this hypothesis because that system (ABC) has a high capacity for the provision of financial information and that by providing accurate information for the cost of all medical tests, either with respect to the information of non-financial, we find that the system (ABC) provides a database on activities and performance measures that help to improve the performance of partitions that are applicable to it, and therefore a high capacity to understand the processes and determine what is useful to them, and what is useless and thus re-engineering processes with analytical information on the activities. This leads to provide remedial service to patients faster than it is now, through the integration of some of the activities with each other or cancel some activities useless which leads to improved quality of service treatment, which increases the ability of the hospital competitive, and this is consistent with the findings of the study (Forrester2003,)

5.2.3 The results of the third hypothesis:

Lead account service fees therapeutic Department of Microbiology and according to the system (ABC) in a hospital Khourma to managerial decision-making rational?

The results showed that it can accept this hypothesis, where it is through the application of the system (ABC) in the Department of Microbiology at the Hospital privacy has been calculating the cost of remedial service more accurately, and then provide clear information and high-resolution for indirect costs incurred by this section and the mechanism of allocation, and to clarify the line workflow in these sections. And then take the appropriate decision to adjust the value of the contribution (increase or decrease) which is paid by the patient based on the cost calculated in accordance with the system. (ABC).

5.2.4 The results of the fourth hypothesis: there are substantial obstacles to prevent the application of the system (ABC) in a hospital Khourma government.

The results showed that it can not accept this hypothesis, as it is through the process of applying the system (ABC), there was no substantial difficulties preclude its application in a hospital Kherma government, and the evidence for that is the success of the application of this system in the

Department of Microbiology, and this does not mean that the application process was easy and free of any obstacles, during the application process and the researchers encountered practical difficulties in obtaining cost information as you can from which the application system (ABC) easily. Forcing it to deal with a huge amount of information and the alteration of the form that has been utilized in the application process, which took a long time to accomplish this study. And therefore must make changes once the level of hospital systems, accounting and information technology, the transmission of information to a random accurate classification of information, particularly those pertaining to costs.

6. Results and recommendations:**6.1 results**

The study found the following results:

1. Application system (ABC) in the Department of Microbiology, led to the allocation of indirect costs and calculate the cost of remedial service more accurately.
2. Value of the contribution paid by the patient (insured and uninsured) versus receiving a therapeutic service differs from the value calculated according to the system (ABC)
3. The success of the application system (ABC) in a hospital Khourmh government needs to have a dedicated team with experience and extensive knowledge of the activities that are practiced in therapeutic sections of the hospital.
4. The ability of the system (ABC) to provide more accurate information about the cost-medical services, which contributes to the help decision makers to take administrative decisions properly and in a timely manner.
5. The ability of the system (ABC) to reduce costs without compromising quality, and by re-engineering processes as a result of analysis of the activities as a key step in the system.
6. No substantial difficulties prevent the application of the system (ABC) in a hospital Khourmh government.
7. Can be applied to the system (ABC) on the remaining sections of therapeutic hospital and in the same way that has been applied to the Department of Almikrubiolgi provided that the items are available that will ensure the success of this process, it may be practical application system (ABC) in the hospital as a whole is expensive and needs time and effort great, but benefits that will accrue to the hospital after the application process more than that.

6.2 Recommendations

1. You must apply the system (ABC) on all sections of the hospital for its ability to calculate the cost of remedial service more accurately, and to provide financial information and non-financial services therapeutic.
2. Must reconsider the value of the contribution paid by (the patient insured and non- insured) versus receiving a therapeutic service based on sound scientific basis in the light of the cost calculated according to the system. (ABC)
3. Exploit existing database in the hospital and take advantage of the program is designed for cost accounting computerized transmission of case information to random accurate classification of information.
4. The need to use computer software and information technology support in the rehabilitation and training of accounting staff well in hospital Kherrmh government.
5. The need to monitor the budget enough to hold specialized training courses for officials and decision-makers in hospital management about the role and importance of systems costs in general and the system. (ABC) in particular.
6. The need to bring about the necessary changes in the accounting systems and informatics private hospital Kherrmh government so that these systems are able to provide the information needed to apply the system (ABC) properly and in a timely manner.
7. Study and analysis of the line of work in the Department of Microbiology, Department of medical tests (lab) and work to make the changes necessary to ensure and improve the quality of service at the lowest cost.

7. Acknowledgements:

The Authors would like to thank Taif University KSA for financial support. And grateful to the Department of Accounting and Auditing, Faculty of Science and Arts University branch of Ranyah, And also Department of Business Administration, for support to carry out this work.

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1/2/2021