

**The role of cost accounting system based on activity (ABC) in rationalizing the
expenditures of public health institutions**

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Received: 23/02/2026

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Accepted: 24/03/2026

Published: 31/05/2026

Abstract:

The aim of the study is to know the role of cost accountability system based on activity (ABC) in rationalizing health expenditures. The study concluded that in order to achieve a balance, between the increased expenditures and financing possibilities available, requires procedures and measures that allow to reduce health expenditure. In addition, working on rationalizing them, among these measures is to activate the role of the cost accounting in public health institutions and use the cost calculation systems on an accurate basis to control health resources. The activity-based cost system (ABC) was one of the most modern accountability systems that were adopted in determining the cost of the health service, for the purpose of reducing costs and achieving moderation in the distribution of indirect costs.

Keywords: health service, health expenditure, health financing, rationalization of public expenditure, cost accountability, ABC system.

Jel Classification Codes : I 10, I 13, H 61, D 24.

Introduction :

The increasing demand for the necessities of life, especially health services, increased the government's responsibility to meet them and increased the need for public spending. Under the scarcity of funding sources, Algeria is challenging the problem of increasing health expenditures, without improving the health status of society, which calls for the need to control the cost of health service instead of thinking about financing. Moreover, with this came the need to rationalize public spending in order to increase the effectiveness and efficiency of employing public expenditures for health and achieving goals that were set for it. Because in fact, the problem of health in Algeria is not a lack of financial resources and capabilities, but rather the problem of organizing, managing, controlling, and rationalizing the use of these resources.

The activity-based cost accounting system (ABC) came as one of the important developments in cost accounting, as it appeared in the eighties of the last century in American companies, and it is considered one of the modern management control tools that were applied in the industrial sector and then expanded to include the service sector, including health institutions.

Through this study, we will try to present this system as one of the modern tools for monitoring and rationalizing health costs in public health institutions, and this is by answering the following main problem:

To what extent does the activity-based cost accounting system contribute to rationalizing the expenditures of public health institutions?

From this main question, the following sub-questions fall:

- What is the health service and is it different from other services?
- Is financing public health expenditures limited on government funding?
- Did the ABC system solve health costs problems that traditional methods failed to do?

To answer the main problem, the following hypotheses can be put forward:

- The health service is the utilities provided to individuals with the aim of eliminating diseases, and it does not differ from other service goods.
- The financing of public health expenditures is not limited to government funding, but varies between government funding and private financing.
- The activity-based cost accounting system was able to solve the problems that traditional methods could not.

Research aims:

The health sector in Algeria is challenging several problems, foremost among which is the lack of funding, the increase of health expenditures, as a result of the continuous increase of demand for health services and the inability of the managers of public health institutions to control these expenditures. This study aims to:

- Clarify the concept of health service and show the difference between it and other service goods.
- Identify the sources of financing health services.
- Analysis the evolution of health expenditures.
- Knowing the ways of determining the cost of health expenditure and the ways to rationalize this expense.

Research Methodology:

To answer the main problematic and the sub-questions, the descriptive and analytical method was followed. The descriptive method represented a set of theoretical concepts related to the health service, its sources of financing, and ways to measure and rationalize health expenditures. The analytical method was adopted by analyzing a set of tables mentioned in the study. For that, the research was divided into the following axes:

First: the concept of health service.

Second: health expenditure and its sources of financing.

Third: Rationalizing health expenditures.

Fourth: Accountability of hospital costs.

1. The concept of health service

Before dealing with the concept of health service, we will first come across the concept of service in general and the most important characteristics that distinguish it.

2.1. service concept:

A service is every intangible utility that is provided by one party to another through the exchange process in order to satisfy specific want, so that it is consumed at the time of its production and it is ephemeral without any transfer of its ownership from its consumption.

2.2. Service Features:

In order to distinguish services from the tangible goods, we must know, the most prominent features of a service, and some of them are:(Valarie A, A Persu, & Leonard L, 1985, pp. 33-34)

- **Intangibility:** because services are performances, rather than objects, they cannot be seen, felt, tasted or touched in the same manner in which goods can be sensed;
- **Inseparability of production and consumption:** involves the simultaneous production and consumption, which characterizes most services. Whereas goods are first produced, then sold and then consumed, services are first sold, then produced and consumed simultaneously;
- **Heterogeneity:** concerns the potential for high variability in the performance of services. The quality and essence of a service can vary from producer to producer, from customer to customer, and from day to day;
- **Perishability:** means that services cannot be saved and stored.

2.3. Health Service Concept:

Health service has been defined in different ways, one of the most common one is considered health service as "all personal and public services performed by individuals or institutions for the purpose of maintaining or restoring health" (William A & Eric N, 1979, p. 503)

2.4. Characteristics of health services:

The health service has its own characteristics that differ from other services. Here are some of them: (حاروش، 2017، صفحة 34)

- It is not possible to set a single standard or a typical standard for the health service that includes all sick individuals, since each patient requires a service that differs from another patient and this depends on the type and nature of the disease;
- Due to the unpredictability of the incidence of the disease, it is not possible to predict the demand for the health service.
- Considering the health service as an intangible product, and inseparability that requires direct contact between the patient and the service provider in order to benefit from it.
- The health service is subject to external influences, such as competition, exclusion, or exclusion as a public good.
- The health service cannot be postponed or stored, because the disease does not necessitate waiting.
- The health service is a collective good that is provided to all members of society, and it is considered a derivative demand. The health service may not be intended for final consumption only, but may be an input to produce other health services.
- Health services are considered consumption spending, as per capita spending is not limited to consuming food, clothing and other items only, but also includes health services.

3. Health expenditure and its sources of financing:

Before presenting the various sources of financing health expenditures, we must first mention the concept of public expenditures.

3.1. Concept of public health expenditure:

Public health expenditures are provided by government on health services, developing them, and setting the necessary standards to provide them in public health institutions (حسن، 2008، صفحة 142) with the aim of raising the health level of individuals and treating and protecting them from various diseases and epidemics.

3.2. Sources of financing health expenditures:

Sources of financing health expenditure can be divided into two main sources, government and private sources, in addition to families, charities, and non-governmental organization. (حاروش، 2017، الصفحات 152-153).

- Government funding or state contribution: Financing covers the largest proportion of the total funding for the health sector in Algeria. Its funds come from the Ministry of Finance through the annual general budget of the state, which prepared in advance in the Finance Law to frame the country's health policy. (لوصيف و علماني، 2015، صفحة 08)

This type of financing is adopted by most of the global health systems, but it differs in the percentage of the state's contribution to the financing process. (حرفوش و بايزيد، 2015، صفحة 08)

In Algeria, after the creation of free medicine by the state in 1974 through Ordinance 74-65 of 12/28/1974, which included free treatment, and the abolition of the arbitrary pricing system, the state and the Social Security Fund financed the important part of health expenditures, and state funds are based on appropriations. That covers the largest part of the health expenditures, which is the operating expenses that are generally, represented the expenditures of employers and the medicine expenses, and the equipment expenses, which are fully borne by the state. (خلاصي، 2017، صفحة 204)

-Private financing: includes what families spend to obtain health services in completely or in part, in addition to what they pay to social security funds and health insurance institutions. Families are considered one of the most important sources of private financing for health in Algeria, which means that families bear the greatest burden in financing health, and they resort to private health services due to favoritism, bureaucracy and long waiting for appointments in the public health sector.

Although health treatment is free in Algeria, families are not completely excluded from participating in health expenditures (خلاصي، 2017، صفحة 206), as the share of families in financing health expenditures remains, and despite everything, it constitutes significant percentages compared to other sources and compared to the individual income which is low.

- Insurances: Including social health insurance or what is known as social security, which is a non-profit insurance system aimed at achieving economic safety for members of society against social risks, as well as private insurance companies and employers' contributions to insure their employees.

Individual insurance through these institutions is either compulsory as soon as the person engages in some activity, or voluntarily through subscribing to insurance companies of the individual will, or people may combine the two forms together, because compulsory insurance is generally less than 100%, so they underwrite in private insurance companies to obtain supplementary insurance. (حرفوش و بايزيد، 2015، صفحة 08)

In Algeria, after the state's contribution occupied the largest part in financing health expenditures, financing comes in the second stage through social security funds, as health services, whether in the public sector or the private sector, are funded through random compensation for medical and medical expenses of the insured. (خلاصي، 2017، صفحة 205)

The health insurance market in Algeria is divided into compulsory government health insurance, managed by the Social Insurance Funds (CASNOS, CNAS), which controls 97.30% of total insurances, and optional commercial health insurance run by insurance companies specializing in people's insurance. (دبوزين، 2013، صفحة 19)

- Sources of external funding: It includes financial aid to donor agencies represented by non-governmental organizations (civil society organizations) intended to finance some health programs, as well as funds for international organizations represented in international aid (حاروش، 2017، صفحة 153), and other external grants provided by institutions and individuals. From outside the country that is targeting global health projects. (حسن، 2008، صفحة 153)

Generally, there are three main sources of financing public health services in Algeria, which are divided into the following:

-Government Budget.

-Social security.

- Families.

3.3. Evolution of health expenditures and their sources of financing in Algeria:

3.3.1. Evolution of management expenses:

The following table represents the management budget for the health sector compared to the state's general running budget during the period 2010-2019.

Table 01: Evolution of management expenditures for the health sector compared with the government's general management expenses

Unit:10³ kd

Percentage %	General management expenditure	Management expenditure of health sector	years
08.43	2 313 350 013	195 011 838	2010
08.15	2 796 717 597	227 859 541	2011
10.36	3 910 595 317	404 945 348	2012
07.76	3 952 575 911	306 925 642	2013
08.62	4 243 755 743	365 946 753	2014
08.61	4 436 059 221	381 972 062	2015
08.70	4 359 144 400	379 407 269	2016
09.43	4 126 290 127	389 073 747	2017
09.54	4 109 479 306	392 163 373	2018
09.33	4 276 292 448	398 970 409	2019

Source: Prepared by the researchers based on finance laws for the period: 2010-2019.

From the above table, we notice that despite the decrease in the percentage of financial allocations allocated to the health sector as a whole, it is very small, with an average of 08.89% of the general management budget. However, we notice that these expenditures increased at an accelerated pace from year to year during the period 2010-2012. In addition, this is due to the financial savings that were during that period, because of the rise in oil prices, as 2012 recorded the largest value during the period 2010-2019, after which the health management budget was reduced in 2013 compared to 2012 due to the collapse of oil prices. However, despite this, health expenditures return to rise from year to year, but in small proportions. During the period 2014-2019. Despite these increases in health sector expenditures, health-spending remains ineffective and without improving health service over the years due to poor management and lack of rationalization of health spending.

3.3.2 Development of equipment expenditures:

Equipment expenditures for the health sector in Algeria includes: (بوقناديل و دحمان، 2016، صفحة 88)

Health expenditures: represent the sums directed to the basic health structures, which include hospital institutions, including university and specialized, health centers, and the completion of multi-service medical clinics, in addition to the implementation of various interests at the level of hospital institutions.

- **Administrative installations expenditures:** represent the sums of funds allocated for establishing health structures and administrative infrastructure to ensure the proper functioning of the various health services.

- **Training expenses:** represent the amounts going to medical and paramedical training.

The government has allocated huge sums to equip the health sector within the framework of the successive reforms that this sector has known and to finance various programs, whose priorities include achieving infrastructure projects and raising the level of health training, which can be explained through the following table.

Table N°2: equipment expenditure of the health sector in Algeria

2014	2013	2012	2011	2010	years Sub-sectors
111 320	105 070	33 040	136 000	167 860	Health
1 075	2 000	1 500	240	1 200	Infrastructure
1 125	3 900	1 500	1 700	940	Training
500	-	-	-	-	computing
-	-	-	-	-	High education and scientific research
-	-	-	-	-	Housing
114 020	110 970	36 040	137 940	170 000	Sum
2019	2018	2017	2016	2015	years Sub-sectors
43 480	23 131.20	23 342	37 266	63 658	Health
300	1039.20	1 000	913	1 988	Infrastructure
1 100	3 252.70	3 130	1 897	3 911	Training
-	-	-	-	435	computing
-	-	-	-	74	High education and scientific research
50	103.90	1 000	80	-	Housing
27 527	27 527	27 572	40 156	70 066	Sum

Source: Prepared by the researchers based on finance laws for the period: 2010-2019.

Through the previous table, we note that there is a significant decline in the allocations directed to finance the equipping of the health sector. Especially after the year, 2015 until the year 2019, and this is due to the witnessed decrease in the price of oil and the decline in oil revenues in recent years and the procedures that followed to reduce expenditures to rationalize public expenditures.

In spite of this, the allocations directed to health equipment remain significant, with the aim of strengthening the capabilities of the health system, bringing health tools closer to employees, expanding preventive health and paying attention to coaching and training health's employees, especially new employees, in addition to their

promotion, which raises the cost of wages. In addition to the expenses of maintenance, buildings and green spaces prepared for the practice of health and hospitalization and all related to administrative activities, as well as the expenses related to the acquisition of health tools and equipment necessary for the running of health sector institutions.

3.3.3 Health financing sources in Algeria:

The next table represents the various parties involved in financing health expenditures in Algeria, and this is during the period 2010-2019.

Table N°3: sources of financing health expenditure in Algeria

2012		2011		2010		years source
percentage	amount	Percentage	amount	percentage	amount	
88%	391 340 296	83%	218 562 093	83%	197 683 412	Government contribution
11%	48 129 410	14%	38 000 000	16%	38 000 000	Social security
1%	6 100 000	2%	6 100 000	1%	1 243 520	Other revenue including families contribution
100%	445 569 706	100%	262 662 093	100%	236 926 932	sum
2015		2014		2013		years source
percentage	amount	Percentage	amount	percentage	amount	
82%	365 898 086	84%	356 025 878	81%	258 178 634	Government contribution
15%	65 219 092	14%	57 818 524	16%	49 629 410	Social security
3%	15 100 000	2%	9 100 000	3%	9 100 000	Other revenue including families contribution

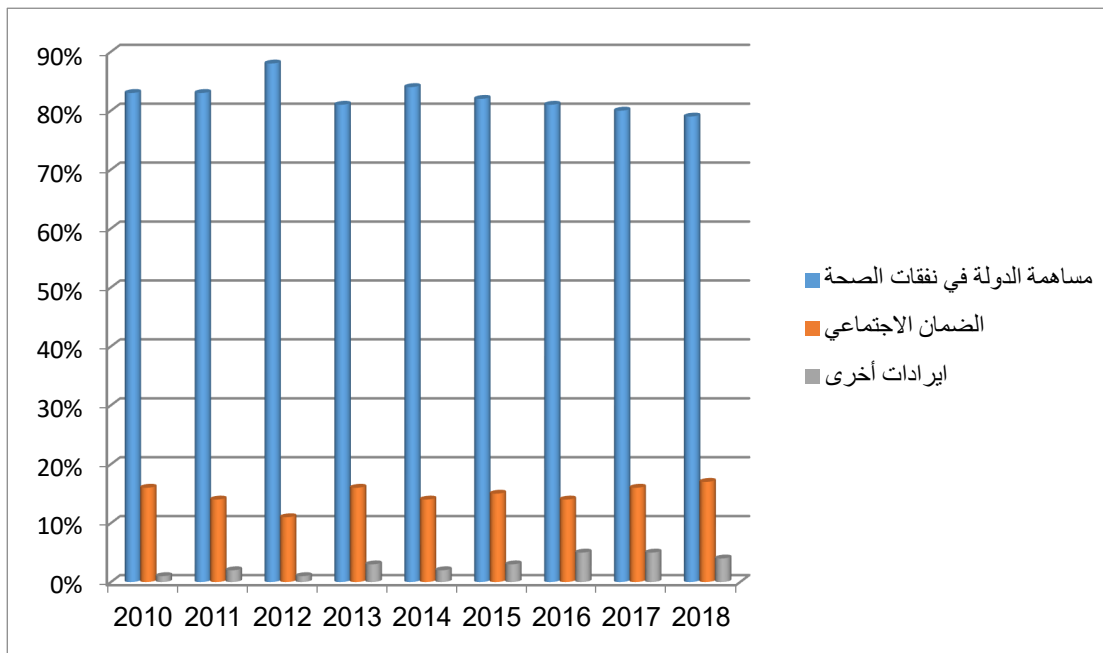
100%	446 217 178	100%	422 944 402	100%	316 908 044	sum
2018		2017		2016		years source
percentage	amount	Percentage	amount	percentage	amount	
79%	378 184 383	80%	371 098 624	81%	362 245 153	Government contribution
17%	80 000 000	16%	73 753 570	14%	64 815 511	Social security
4%	21 100 000	5%	21 100 000	5%	21 100 000	Other revenue including families
100%	479 284 383	100%	465 952 194	100%	448 160 664	sum

Source: Prepared by the researchers based on data from finance ministry for the period: 2010-2019.

From the above table, it is clear that the largest part in financing the health sector in Algeria is by the state's contribution, with an average of 82% during the period 2010-2018, and then comes after it the contribution of Social Security in second place in the percentage of 14.77%, but this source has become suffering from financial difficulties. Because of the continuous, increase in health expenditures, on the one hand, and on the other hand, the decrease in social deductions due to the low level of wages. In addition, families contribute with an average of 02.88%.

We can clarify the large discrepancy between the various sources of financing health from total funding in the following graphic.

Figure N⁰¹: sources of financing health in Algeria



Source: prepared by researchers based on data of table 03.

4. Rationalizing health expenditures

With the development of the functional role of the state and the association of increasing public spending with some factors that are difficult to avoid, the concept of rationalizing public spending is no longer limited to the meaning of "reducing public expenditures." (أبو دوح، 2006، صفحة 20)

4.1. The concept of rationalizing public spending:

The rationalization of public spending is the sum of procedures and that commit to "efficiency" in using public funds, allocating resources, and "efficient" using this funds to achieve public utility at the lowest cost and maximize the welfare of society. (القاضي، 2013، صفحة 20)

Efficiency in the use of public funds means the extent to which the objectives for which the public expense was exited, is achieved. As for the efficiency in using public funds, it means spending the least amount of public funds to achieve the greatest utility.

4.2. Motives of rationalizing public funds:

The state's resort to rationalizing public spending has several reasons and motives, the most important of which are: (القاضي، 2013، صفحة 31)

- Reducing the risk of decreasing the estimated revenues in the general budget: Considering that, the general budget represents future estimates of the state's revenues and expenditures for the next fiscal year. These estimates may contradict reality either by increasing or decreasing, and for this the estimation of next year's revenues in relation to the current year's revenues, depending on the circumstances, these estimates may deviate from reality by either increasing or decreasing, which poses the risk of preparing the budget and pushes the state or government to rationalize public spending.

- Achieving fair distribution of expenditures: Being a distribution of expenditures based on spending on important public activities that provide the necessary and basic services to all members of society to achieve their well-being by rearranging priorities in public policy.
- Control over control: The collection of state revenues and the payment of public expenditures are two processes that require close control. The latter, despite its different types, remains the most important tool of the fiscal policy adopted by the state to implement the policy of rationalizing public spending.

4.3. The Effects of Rationalizing Public Expenditure: (عصفور، 2015، الصفحات 372-374)

Although the rationalization of public spending works to achieve efficiency and effectiveness in the use of resources. it is assumed that it does not affect the basic services of society such as education, treatment and housing, as the rationalization of public spending is supposed to fall first on sectors with luxury expenditures, while the basic sectors are to rationalize their expenditures It may lead to negative results.

The policy of rationalizing public spending may affect the country's economic and social situations, considering public expenditures to be one of the most important fiscal policy tools used to influence the country's economic and social sphere.

In addition, the effect of rationalizing public spending on these two areas varies according to the country's economic situations. In the case of an economic boom when public revenues increase, rationalizing public spending by reducing public expenditures reduces the intensity of prosperity and high prices, and thus the symptoms of inflation disappear, which records a financial surplus, which is the general reserve of the state. It is used later in crises and years of economic depression. Therefore, in this case, the rationalization of public spending in general constitutes positive effects on the economic and social conditions of the country.

And when state revenues decrease, i.e. in a state of economic recession, the policy of rationalizing public spending has a negative effects, as some strict policies known as austerity are resorted to, which may represent layoffs to reduce employment in the country, and the subsidies provided by the state on basic materials are also reduced. This negatively affects the standard of living of the poor classes in society, as well as the decline of development projects, which affects the increase in national income and the economic growth of the country in general.

4.4. Success factors for rationalizing public spending:

Rationalization of public spending depends on a set of factors, the most important of which are: (صادق و دربال، 2019، صفحة 60)

- Defining precise and clear goals for government programs that the community strives to achieve;
- Defining the priority projects and programs to preserve public funds from being lost and maximize the utility of its use;

- Evaluating public spending programs and measuring them periodically and distinctly to ensure compatibility between implementation and what was planned.
- Achieving fair public spending in the distribution of utilities and services among the various groups of society, especially the vulnerable groups.
- Activating the supervisory role over public expenditures.

5. Hospital costs Accountability

Public hospitals and health institutions use the public accountability system as a financial accounting system to record their financial transactions. (جبار و بومعراف، 2011، صفحة 35)

The interest on cost is the basis for the success of any business, which leads to focus on the objectivity of accounting measurement of costs, and every hospital has a conscious management that necessitates focusing on finding cost and analyzing it as a basis for making various administrative decisions. (عطية و عبد ربه، 2000، صفحة 22)

5.1. Concept of cost accountancy:

Cost accountancy is a branch of accountancy, and it seeks to enumerate and record the various cost elements related to production processes with the aim of analyzing them and extracting the necessary data that are used in planning, control and making various administrative decisions. (عطية و عبد ربه، 2000، صفحة 178)

5.2. Objectives of Cost Accountancy in Health Institutions:

Cost accountancy in hospital activity aims at many goals and functions that can be summarized as follows: (عطية و عبد ربه، 2000، صفحة 242)

- Control and regulate cost elements: by comparing the actual results of the cost of the hospital's activities with what was planned.
- Rationalization of administrative decisions: by providing the necessary data and information for hospital's management and carrying out its various functions, planning, performance evaluation, and decision-making.

5.3. Characteristics of the activities of hospitals or health institutions:

The activities of hospitals and health institutions are characterized by a set of characteristics and features that distinguish them from other service institutions, and among these characteristics, we mention the following: (عطية و عبد ربه، 2000، صفحة 242)

- Most of the hospital's activities costs are fixed costs: most hospital costs are based on the fixed costs, which represent the largest proportion of the total costs.
- Changing the volume of hospital activity: The activity of health institutions is characterized by a seasonal nature. As the volume of activity and operations carried out by hospitals change over the course of days and throughout the accounting period. as they are usually linked to certain seasons and specific reasons, which

makes hospital costs related to the volume of operations and activities.

- Predictability: Due to the seasonal nature of hospital activity, hospital costs can be predicted easily.
- Traceability of costs: Hospital costs can be relatively traced by linking them to various treatment activities and converting indirect costs into direct costs.

5.4. Methods for determining the cost of health services:

There are many methods of determining the cost of health services, traditional and modern. Among the traditional methods that have been adopted to determine the cost of health services is the method of rational loading which is based on the total loading of all cost elements.

5.4.1. The Concept of the Homogeneous Sections Method:(عدون، 1999، صفحة 36)

It is also known as analysis centers. Organization is divided into a certain number of functions. Some of which are common to the activities of the organisation. Moreover, some of them share some activities, including those related to only one activity. Meaning that this method allows the organization to be divided into several homogeneous sections or what is known Analysis centers that are used in the analysis of indirect burdens, which are burdens that are not directly calculated in costs.

5.4.2. Application of the homogeneous sections method in health institutions:

The application of the homogeneous sections method in hospital requires dividing the health institution into homogeneous departments. Alternatively, what is known as analysis centers, which are the departments that produce the same units of measurement and have homogeneous activities, in addition to an official for each department. The homogeneous departments can be divided into main sections whose activities result in outputs known as units of measurement, such as: hospital day, blood filtering quota, prescription, ... etc., and into subdivisions whose activities do not result in direct measurement units, as they provide services to the main departments; Such as management, detective, radiology, restaurant, ... etc.(عيساوي، 2005، الصفحات 251-250).

The steps for applying the homogeneous sections method in health institutions include the following: (عرايبي و بعللة، 2015، الصفحات 10-07)

A. Dividing the health institution into homogeneous departments: The health institution is divided into centers and departments, and this is according to its organizational structure, management and nature of employment in it, so that a distinction can be made between two types of departments:

- **Main sections:** These are the departments that contribute effectively to the production process of the health service, so that its activities are directed directly to the production of a work unit such as a hospital day, such as surgery department, blood-filtering department, and medical analysis department.

The cost of the health service is calculated according to the following relationship:

$$\text{Health service cost} = \frac{\text{total department costs}}{\text{number of unit produced for the department}}$$

- **Secondary sections:** They are departments that help the main departments to perform the health service, as they do not directly produce work units, and we distinguish two types of these departments:

* **Secondary departments of a medical nature:** they are departments that provide services to the main departments only, such as operating rooms, radiology department, laboratories, ... etc.

* **Secondary sections are of a general nature:** they provide services to all major and minor departments, such as: administration, pharmacy, stores, ... etc.

B. Collecting information: This is done by preparing the accounting documents represented in the various consumption documents and the statistical documents related to the medical departments that measure the volume of the activities of these departments.

C. Defining the keys of distribution: identification the work units that represent the activity of each department. Moreover, that have a close relationship with the various levels of variable costs.

D. Distribution of indirect burdens on the analysis centers: through two types of distribution:

* **Primary distribution:** Among the indirect expenses, there are expenses directly involved in some departments, the cost of which is allocated directly to the sections related to them, as there is no difficulty in charging them, and expenses are distributed between the departments in percentages called distribution keys, (حمدية، 2011، صفحة 40) which Allows for determining the burden value of each of the major sections.

* **Secondary distribution:** It is by distributing the burdens of the secondary departments to the main departments that are imposed upon them to bear the burdens of the first sections and to help them for their contribution to the realization of their activities.

Y- Extraction of unit labor cost: After determining the total of the secondary distribution for each major department by dividing it on the number of its own work units, the indirect burdens are borne on the products through the stages of calculating the various costs by multiplying the labor unit on the number of work units for each department.

5.5. Activity Based Costing (ABC):

The traditional methods, including the previous one follow in determine the cost of the health service to extract a uniform rate applied to all activities of the institution. Which leads to inaccuracy in determining the cost of the health service and causing a deviation in it. Which affects administrative decisions in addition to technological development and the development of an environment Production and services, which led to the need to review the systems for determining health service cost in order to obtain accurate service costs to control and rationalize them.

Among these systems is the activity-based costing system, which is characterized by the ability to access accurate

services costs and improve control over them with appropriate management decisions.

5.5.1. ABC System Concept:

Before dealing with the concept of determining costs based on activities, we refer first to the concept of activities.

A-The concept of activities: The term activity is given to the events, tasks, or work units that are performed to achieve a specific goal,(الطاهر ، 2002 ، صفحة 190) which requires the allocation of a group of resources.

B - Types of activities in health institutions: We can distinguish between several types of health institutions' activities, according to two levels:(عراي و بعللة، 2015 ، صفحة 12)

- According to the sequence of activities: We find:

*** Activities linked to direct units (patients):** The activities that are at the level of the service unit, are directly related to their provision to the patient, and directly proportional to the number of patients or the volume of services provided, that is, they increase with the number of patients and decrease when their number decreases. Therefore, that it is linked with the number of patients in an easy and direct way by relying on the patient's consumption of these activities.

*** Activities pertaining to a group of units (service batch):** the activities related to providing health service to a group of patients. So that they are common to a group of units (patients) that generally share the nature of the diseases they suffer from. Without taking into account the number of patients who form each group. Thus, these units share in one group of patients the cost of one activity representing the group, and the greater number of groups to be provided with health services, the higher cost of practicing these activities.

*** Activities related to the service in general. (Departments of therapeutic specialties):** activities provided by the health institution to support and equip a specific service related to a specific specialized section. Without taking into account the number of units or patients to be served or the number of groups of these units. In addition, without the benefit of other departments and the costs of increasing these activities increase and diversify the number of services provided in the health institution. and the costs of the concerned department are charged using its own cost drivers.

*** Activities related to a specific patient:** The activities for serving the needs of a patient without the benefit of other patients.

*** Activities related to the institution as a whole (the hospital):** the activities that cannot be charged to a specific patient. and it include all operations supporting the hospital's activity without exception, including the activities to provide infrastructure and the administrative and technical activities to provide the health service, as all the final outputs of the institution benefit from them. Health.

*** By value added through activities:** We distinguish two types of activities according to the value they add:

*** Value-adding activities:** It concerns activities that contribute to achieving the organization's goals and add

value to the product from the customer (patient) point of view, and canceling it reduces the service.

* **Non-value-adding activities:** They are activities that can be excluded from the health service without affecting the objectives of the institution, which allows for the cancellation of high-cost activities that do not achieve any added value.

5.5.2. Definition of ABC System:

Although activities are considered as the basis of the ABC system. This system needs other elements in addition to activities, which are: (حمديّة، 2011، الصفحات 57-60)

The activity cost complex (activity center): these complexes allow shortening the number of activities in the organization, to avoid the complexity in determining the relation between activity and the product unit or a service.

A- Unit cost: represents the thing whose cost is to be known, which is represented by the consumed outputs of activities' services.

C- The cause of the cost: the fundamental reason of the cost and its component. In addition, it is the cost determinant or the cost vector. It links the cost' activity with outputs of the products or services, it is considered as a quantitative measure that reflects the outputs of the activity and the accuracy of its determination. On which the success of the ABC system depends.

Two levels of cost drivers can be distinguished:

- **Resource drivers:** represent the first stage drivers and are used to link resource's costs to activities.

- **The causes of activities:** the causes of the second stage that consume activities through the output services.

D - Resources: They represent the necessary inputs to carry out the activity of the institution, whose cost is necessary to determine the cost of the activity.

5.5.3. Steps to implement the ABC system in hospitals and determine the cost of health service:

The cost accounting system based on activities in health institutions based on two basic steps. In the first step, the cost of the resources used is collected into activity cost pools, after which these costs are allocated through the cost drivers to the activities used for those resources to determine their cost. In the second step, the activity costs are charged to the final health service through the activity cost calculator.

In order to reach the final cost of the service through the ABC system, we go through the following stages: (عريوة، 2015، الصفحات 9-10)

A- Defining the activities: It is the first stage in which the ABC system begins of great importance, as it determines the activities of each department and this is through studying the hospital or health institution, identifying its departments, analyzing the processes that take place in it, and distinguishing between the activities, including the main activities and the sub-activities, The greater the number of activities, the more

difficult it is to determine the relationship between the activity and the service provided to the hospital, which increases the cost of the system. Therefore, the ABC system requires the grouping of homogeneous activities with similar work within one activity, which is known as the activity cost complex to facilitate tracking the cost of the assumed activity on the service provided. In grouping activities into one activity, it may lead to weakening the ability to explain the causal relationship between the costs of the activity and the costs of the services provided through it.

B - Determining the cost of the activity: After identifying and analyzing the hospital's activities, the stage of calculating the cost of each of these activities comes through the distribution of the costs of materials and resources required for them over a certain period of time in order to determine the costs that the hospital will bear when carrying out these activities, especially since these costs include two types Of the costs:

Direct costs, which can be tracked and charged to the activities that you have consumed directly, such as medicines, medical tests, the number of x-rays performed for a certain number of patients, ... and others.

- Indirect costs that cannot be directly tracked and charged to a specific activity itself, such as costs of food, gas, electricity, ... and others.

Therefore, the ABC system must take into account the causal relationship between the use of resources and the outputs or outcome of each activity to distribute these indirect costs to the various activities of the hospital, as there are some resources that are consumed by several activities whose cost is charged through the causes of the activity cost that the success of the ABC system depends on The extent of its validity because it is considered as a quantitative measure of the quantities of production factors used (resources) to obtain one unit of activity outputs, which includes health services provided to one patient.

C - Determining the cost reason for each activity: The cost drivers are determined to distribute the costs to the various activities of the hospital, so that each department contains several activities and each activity has its own cost reason, which may depend on the number of times the activity is practiced, such as the number of checks in a particular interest, the number of meals Provided to patients, number of prescriptions provided to the pharmacy, number of reception cases in the emergency department, ... and others. Or it may be a cause of a time cost that depends on the time required to prepare and re-equip the operating rooms after performing certain surgeries.

D - Allocation of costs of activities: Each activity has a cost and a reason, and the cost of the activity varies according to its cause. At this stage, the link is made between the cost cause and the cost of each activity, by determining the percentage of loading of the cost drivers of the final outputs. This percentage allows the allocation of activity costs to the health service provided to one patient in a final way.

This health service or the final product is the product of mixing many elements consumed through activities, so

that its cost includes the cost of direct materials represented in all treatments and medicines provided to a single patient, in addition to indirect costs which include the cost of consumed activities resulting from nursing services, hotel services and food. Administrative services, ... and others.

The cost of one unit for each activity is determined by grouping its various costs separately and then dividing them by the number of units, and this is according to the following relationship:

$$\text{Cost per unit} = \text{total activity costs} / \text{number of cost drivers}$$

6. Results and discussion :

- The health service is the sum of the benefits provided to individuals, society and the environment to eliminate diseases and epidemics, and it is unique from other commodity services as it has characteristics that distinguish it, which negates the validity of the first hypothesis.

The financing of public health expenditures is not limited to government funding for the state, but varies between public funding, social security financing and family financing, in addition to other sources that include financial aid from civil society organizations, international bodies and non-governmental organizations, which proves the second hypothesis.

The activity-based cost accounting (ABC) system was able to solve the problems that traditional methods were unable to determine and calculate the cost of the health service. By focusing on and tracking indirect costs, which validates the third hypothesis.

Source: author's name (name), full title of the document, publishing, page.

7. Conclusion:

Despite all the many possibilities and reforms that the state has made to improve the health sector, it has not been able to achieve a balance between the increasing expenditures that have reached the limit and the available financing possibilities, which requires procedures and measures that allow reducing health expenditures and working to rationalize them.

Among these measures are activating the role of cost accounting in public health institutions and using cost accounting systems on an accurate and rational basis for monitoring and controlling limited health resources. Among these costing systems we find the activity-based cost accounting system (ABC), which is considered one of the modern systems in cost accounting and which was considered an appropriate way to overcome the shortcomings suffered by traditional costing systems, on top of which is the homogeneous division method.

- Reconsidering the organizational structures of health institutions, as they are not compatible with the ABC system, as they have an administrative organization structure to consider them as institutions of an administrative nature, which makes the organizational structure of health institutions focuses on the administrative aspect and neglects other health functions;

- The need to instill cost-conscious and economic awareness among health sector personnel, whether they are officials or workers, and build a culture of control there.
- The necessity to adopt cost accounting systems stemming from the needs and necessities of the internal management of public health institutions, relying on decentralized management systems in which all responsible parties in the administrative and operational departments participate, whether medical or technical;
- Training and qualifying the human factor to implement modern systems, especially the ABC system, and raise the efficiency and effectiveness of their performance.

8. List of references:

1. Valarie A, Z., A Persu, P., & Leonard L, B. (1985, spring). Problems and strategies in services marketing. 33-46.
2. William A, F., & Eric N , B. (1979, December). Marketing Research in Health services planning: a model. 94(06), pp. 503-513.
3. إبراهيم عبد الواحد حسن. (2008). انتاجية النفقات العامة الصحية -دراسة مقارنة- (دكتوراه فلسفة في الاقتصاد). القاهرة، قسم الاقتصاد والتجارة الخارجية، كلية التجارة وإدارة الأعمال: جامعة حلوان.
4. أحمد حسن الطاهر . (2002). المحاسبة الادارية. عمان: دار وائل للطباعة والنشر.
5. جميلة صادق، و عبد القادر دربال. (جوان، 2019). اجراءات ترشيد النفقات العمومية في الجزائر في ظل تقلبات أسعار النفط منذ سنة 2014. مجلة التكامل الاقتصادي، الصفحات 56-66.
6. سعاد حمدي. (2011). استخدام نظام محاسبة التكاليف على أساس الأنشطة (ABC) في تحديد تكلفة الخدمة الصحية - دراسة حالة: المؤسسة العمومية للصحة الجوارية (قسم الأشعة) بسكرة- (رسالة ماجستير في علوم التسيير). بسكرة: جامعة محمد خيضر.
7. سهام حرفوش، و علي بايزيد. (24-25 نوفمبر، 2015). أسباب تطور النفقات الصحية في الجزائر خلال الفترة 2000-2012. مداخل مقدمة ضمن الملتقى الدولي حول: سياسات التحكم في الانفاق الصحي في الجزائر -الواقع والأفاق-. المسيلة: جامعة محمد بوضياف.
8. صالح رافع القاضي. (2013). تقييم أثر الرقابة المحاسبية اللاحقة على ترشيد الانفاق في الجامعات الحكومية (رسالة ماجستير في المحاسبة). عمان، كلية الأعمال : جامعة عمان العربية.
9. عبد الإله خلاصي. (2017). اشكالية تمويل نفقات الصحة في الجزائر خلال الفترة الممتدة ما بين 2008-2017 . مجلة المشكاة في الاقتصاد والتنمية والقانون ، الصفحات 199-215.
10. لخضر لوصيف، و محمد علماني. (24-25 نوفمبر، 2015). اصلاح المنظومة الصحية كآلية لترشيد الانفاق الصحي في الجزائر. المسيلة: جامعة محمد بوضياف.
11. محاد عريوة. (24-25 نوفمبر، 2015). تحديد تكلفة الخدمة الصحية باستخدام نظام التكاليف على اساس الأنشطة (ABC) في القطاع الصحي العمومي (تصميم نظري لنموذج ABC في المستشفيات) . مداخل مقدمة ضمن الملتقى الدولي حول : سياسات التحكم في الانفاق الصحي -الواقع والأفاق-. المسيلة: جامعة محمد بوضياف.

12. محفوظ جبار، و إلياس بومعروف. (2011). دور محاسبة التكاليف الاستشفائية في الرقابة على المستشفيات العمومية الجزئية - دراسة حالة المستشفى الجامعي سعادنة عبد النور بسطيف- . *مجلة العلوم الاقتصادية والتسيير والعلوم التجارية*، الصفحات 29-57.
13. محفوظ عرابي، و الطاهر بعلة. (24-25 نوفمبر، 2015). محاسبة التكاليف كآلية للتحكم في الانفاق الصحي . *مداخلة مقدمة ضمن الملتقى الدولي حول: سياسات التحكم في الانفاق الصحي -الواقع والآفاق-*. المسيلة: جامعة محمد بوضياف.
14. محمد بوقناديل، و محمد علي دحمان. (2016). تقييم الانفاق العام على مستوى القطاع الصحي بالجزائر نسبة إلى الموازنة العامة . *مجلة الدراسات الاقتصادية الكمية* ، الصفحات 79-95.
15. محمد دبوزين. (جوان , 2013). سوق التأمين الصحي في الجزائر. *مجلة العلوم التجارية*، الصفحات 17-35.
16. محمد شاكر عصفور. (2015). *أصول الموازنة العامة*. عمان: دار المسيرة للنشر والتوزيع والطباعة.
17. محمد عمر أبو دوح. (2006). *ترشيد الانفاق العام وعلاج عجز ميزانية الدولة*. الاسكندرية: كلية التجارة.
18. ناصر دادي عدون. (1999). *المحاسبة التقليدية وتقنيات محاسبة التسيير*. الجزائر: دار المحمدية العامة.
19. نصر الدين عيساوي. (2005). مراقبة التكاليف في المؤسسة الاستشفائية -دراسة حالة مستشفى حي البير بقسنطينة- (رسالة ماجستير في الاقتصاد المالي). قسنطينة، معهد العلوم الاقتصادية وعلوم التسيير : جامعة الإخوة منتوري.
20. نور الدين حاروش . (2017). *الإدارة الصحي -دراسة مقارنة بين النظام الصحي الجزائري والأردني-*. الجزائر: دار الأمة للنشر والطباعة والتوزيع.
21. هاشم أحمد عطية، و محمد محمود عيد ربه. (2000). *دراسات في المحاسبة المتخصصة: النظام المحاسبي ونظام محاسبة التكاليف*. الاسكندرية: الدار الجامعية للنشر والطباعة والتوزيع.