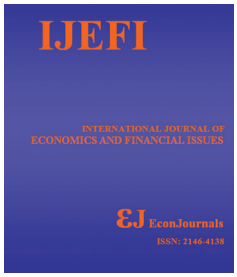

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The Realities and Expectations of Calculating Government Service Costs: An Analysis of Jordanian Hospitals

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ABSTRACT

The goal of this study is to look at how government service expenses are calculated and analysed in Jordanian hospitals to direct health spending in the hospitals of the ministry of health of Jordan for 2021. ABC systems encourage hospitals to use, improve, and evolve in order to save government spending. The theoretical analysis's most significant conclusions were that the process of computing service costs was wrong and did not rely on the cost accounting system of activities or others. Furthermore, the calculation technique has resulted in a significant disparity in the cost of calculating each service from one hospital to the next, proving the inadequacies of the calculation approach. The study indicates that the Health Activity-Based Costing System (ABC) be activated to monitor expenditures, especially medical and healthcare disposables, in order to decrease waste costs; that pay-outs on the system be linked to high involvement files; and that an inventory is conducted at the close of every year to guarantee that the stock fits actual spending.

Keywords: Government Service Costs, Realities, Expectations, Hospitals, Jordan
JEL Classifications: H38, M41

1. INTRODUCTION

Jordan's government has moved in recent years to try to limit public spending, particularly spending on education and health services. The service sector provides a considerable portion of Jordan's public sector spending (Al Omari and Khersiat, 2020). There is little research and statistics available on these services, their costs, and how to try to decrease them (Hammad et al., 2022; Alqudah et al., 2021; Alsharari, 2018). To assist Jordan's government in its attempts to reduce government spending on services (Al-Fawwaz, 2016). The King Abdullah II bin al Hussein Center for Excellence has introduced a number of institutional excellence categories focused on service efficiency and financial efficiency. One of these categories is the outstanding government service award, which has been created independently in 2019 and includes service efficiency and financial efficiency standards. The standards emphasize the leadership team's involvement in service development planning, including service delivery channels, digital transformation, defining services, establishing service delivery procedures, and enhancing them to lower the expenses of higher-cost operations (KC, 2022).

The Jordanian Ministry of Health has striven to improve the efficiency of government services in accordance with Jordanian government instructions. The King Abdullah II Center for Excellence examined all Jordanian government institutions' services and gave reports on the degree of progress in services for each government institution in light of the continual competitive criteria imposed on all government institutions. In addition to satisfying the Jordanian government's present and vital requirements relating to the large growth in public debt caused by excessive public spending and low income, a huge increase in the

number of patients attending government hospitals, which totals around 28 (KC, 2022). In 2021, the cost of these hospitals was over 400 million Jordanian dinars (575 million USD), putting a great strain on the resources available for health services in these facilities (MOJ, 2022).

However, the Jordanian Ministry of Health and a research team carried it out. Analytical research was created to illustrate the overall expenditures on hospitals, comprehensive components of these expenses, the cost of admission service for each hospital, as well as the cost of patient review for emergencies and clinics for all MOH hospitals. An annual report on the study's findings was released, with the goal of shedding light on direct expenditure in hospitals associated with the Ministry of Health for the year 2021 in order to provide certain indicators and suggestions. This will be the foundation for deciding the level of future government expenditure on these hospitals, as well as analyzing disparities in prices for the same health services from one hospital to another in order to rectify these inequalities.

Consequently, the hospital provides a comprehensive range of services to meet the requirements of its patients. This increases demand for its resources, resulting in an increase in price. The issue with the research is that it does not focus on estimating the cost of delivering these treatments, i.e., it does not determine the cost of health care (Al-Halabi, and Shaqqour, 2018; Bataineh, 2018; Huang, 2018; Mahal, and Hossain, 2015). The issue also resides in the accurate computation of healthcare expenses and their involvement in resolving the substantial disparities in the cost of the same service from one hospital to the next. Failure to assess the cost of health services in Jordanian hospitals in an acceptable manner, allowing decision makers to use cost data to improve health care efficiency while lowering prices. Therefore, the purpose of this study is to shed light on the significance of health services and to identify the method of realistically calculating the costs of health services in Jordanian hospitals, as well as the significance of calculating the cost of health services by using the activity cost accounting system. The technique of this study is a critical and analytical analysis of a Jordanian Ministry of Health economic report for the year 2021, which reveals the overall expenses and costs of health services delivered in 28 government hospitals.

This study examines the significance of quantifying the costs of government services. This study aims to shed light on Jordanian government hospitals' health services and the volume of money spent on them, as well as to identify the cost accounting system of activities, its requirements, and the difference between them and the calculation mechanism used in the Ministry of Health of Jordan's report. It is necessary to draw stakeholders' attention to the necessity of correctly assessing the price of health services and their involvement in resolving the substantial disparities in the cost of the same service from one hospital to another. Furthermore, the significance of this study stems from the significance of the problem addressed, as it emphasizes the importance of accurately determining and calculating the cost of health services in Jordanian hospitals and enabling decision-makers to use cost data to improve the efficiency of health services while lowering their costs.

The remainder of this paper is organized as follows: Section 2 examines the literature; Section 3 presents research data, population, model, and methodologies; Section 4 discusses the findings, and Section 5 concludes the study.

2. LITERATURE REVIEW

The section discusses the numerous empirical and theoretical research that has been conducted on the reality and expectations of determining government service costs. Furthermore, it gives a detailed empirical analysis, which is an important stage in any type of study, both in scientific and social research.

Hospital activity is distinguished by certain characteristics that have a major influence on estimating the cost of health services. Furthermore, assessing the cost of the impending health service using suitable cost data serves both the hospital administration and its clients by precisely determining the cost of the upcoming health service. The usage of cost systems also results in more precise information about the various units of exchange being provided (Vassall et al., 2017). Accounting for resource consumption helps to reduce health-care costs by regulating cost aspects and making managerial choices. The findings of a study conducted on ten Iraqi hospitals emphasized the importance of accounting for resource consumption in determining and reducing the cost of health services as well as determining the actual full capacity available, which is reflected in cost reduction and enables managers to make sound decisions (Shaswar and Mustafa, 2022).

The purpose of cost calculation in non-commercial public organizations is to offer information to diverse consumers so that they may make decisions to increase the efficiency of government. Specifically, public companies that carry out manufacturing operations. Second, to the bodies in charge of organizing and supervising budgetary and management procedures. Finally, the highest government officials, On the other hand, the end beneficiary population of public production was able to learn about the costs of the specified items as well as the actions taken to lower them without compromising the quality of goods and services produced (Hasyim and Jabid, 2019). Tran and Tran (2022) used a quantitative method and a logistic regression model to investigate several aspects affecting the adoption of an activity-based cost accounting system for the efficiency of government in a transitional state. It comprised a sample of 71 Vietnam-listed generic pharmaceutical businesses in 2017. Besides, the use of an activity-based cost accounting system is critical in assessing elements such as indirect costs incurred, setting pricing, and diversifying various areas of the organization. It helps to analyze how it influences the decision-making process in a certain firm. Among other things, it includes some useful data that may be utilized for public decision-making. Therefore, it has a substantial influence on administrative practice and public policy management.

Time-driven activity-based costing (TDABC) is one of the new techniques. Appropriate information on the activities required to give a good service and accurate information that may properly estimate the cost of services supplied to patients and their

usage in hospitals can result in a more accurate cost estimate Furthermore, it assists hospital administrators in making suitable decisions on capacity use, capital budgeting, cost control, and so on (Ostadi et al., 2019). Consequently, the ABC system has grown into a key tool for enhancing competitiveness in corporate organizations as attempts are made to adopt new techniques of distributing overhead charges when calculating the costs of goods or other cost items. The ABC system is not a novel accounting idea. Accountants are well versed in the ABC method (Bozorgmehriana et al, 2012).

Many hospitals have successfully used the ABC strategy to modify their price structure or better manage their resources. The benefits of a well-structured ABC system extend beyond increased cost control. Because the ABC strategy focuses largely on the operations required to fulfill company goals, it encourages managers to boost activity organization and eliminate or minimize activities that do not give value (Nielsen, 2022). ABC distribution/management distribution (Mahal, and Hossain, 2015). The ABC system data has been utilized for product pricing, procurement, development of new products and profitability analysis analysis (Lu et al, 2017). Product combination selection (Baki and Cheng, 2021; Homburg et al, 2018). Analysis of customer profitability (Bataineh, 2018). The cost of high-quality analysis (Tran and Tran, 2022). Judgment on shared goods (Mowen et al, 2022). Environmental administration (Viranda et al., 2020). Management of projects (Kusuma and Bima, 2022), software development (Lee et al., 2022), and so on.

Demdoum et al. (2021) investigated the usage of the ABC accounting system and its applicability in the environmental accounting approach, which is geared toward the green economy, namely in the areas of digital Strategy, governance, and organizational restructuring. Similarly, Danish and Antonides (2013) found a strong direct link between the ABC accounting system and the green economy and accountability, which is cause for worry. The researchers did remark, however, that certain critical criteria are difficult and impossible to achieve, limiting their usefulness and maybe restricting some degree of efficiency in hospital management of public services and patients (Loayza and Pennings, 2020; Igalla et al., 2020). Tran and Tran (2022) to examine the influences on government efficiency of an activity-based costing accounting information system in a transition phase used a comparative study and a sample of 71 publicly traded pharmaceutical companies in Vietnam in 2017. According to Tran and Tran (2022), the application of an ABC is significant in determining factors such as indirect costs incurred, price fixation, and diversification of various aspects in the firm, as well as whether they have a positive impact on the decision-making of the given firm since they do provide some relevant information that can be used for overall decision-making, among other necessary factors.

Made et al. (2020) investigated the variables that influence the adoption of an ABC in government training and educational institutions in South Africa by comparing methods and data from diverse institutions. Vetchagool et al. (2021) evaluated the impact of the ABC accounting system on the overall performance of the business in providing services based on the degree of quality management and excellence in firms that employed BAC and non-ABC accounting systems. According to Sedevich-Fonts (2018), ISO 9000 and the Activity-based Costing accounting technique have certain advantages. They said that the same has some impact on the overall performance of government and commercial companies in terms of service delivery, which is an important factor, as well as having some favorable design for overall performance improvement.

3. STUDY METHODOLOGY

The section focuses on the different methodological techniques used by the research in examining the general calculation of government service costs and the analysis applied to direct health spending in the hospitals of the ministry of health of Jordan for 2021. Furthermore, the methodology of theoretical analysis serves as an overview of what the research aim is to conduct in the whole study, which is also an important component (Sybing, 2022). Among the important aspects considered by the study were research design, sample and sampling procedure, data methodologies, and ethical considerations, among others. The study employed quantitative data acquired by a report analysis; hence, it used a theoretical analysis research design. The primary goal of doing a quantitative study was to assess the significance of the link that exists between calculating government service expenses and performing an analysis of direct health spending in the hospitals of the Ministry of health of Jordan for 2021. Furthermore, the study employed the general positivist research philosophy in establishing the cause-and-effect link and improving the establishment of the supplied objectivity, dependability, and general results used for decision-making and general forecasting, among other critical elements (Lehtonen, 2021).

The sampling strategy is an important aspect of the whole investigation. The study used the purposive sampling technique, which is a non-probabilistic sampling technique that allows the researcher to rely on objective factors and general conclusions when deciding which members of the population to consider for participation in the survey to avoid some biased and spurious results that are insignificant (Kulkarni, 2020). The hospitals selected for the survey were chosen to have some specific results that are significant towards the general enhancement of the key factors and the general ability to decide on the key factors to be undertaken for the general achievement of the objective results and to be able to have some significant results in general. This study's population was drawn from Jordan's government hospitals. As a result, 28 Jordanian hospital surveys were distributed because of this. In this study, a convenient sample strategy was adopted, which refers to the gathering of information from the annual report 2021 that is readily available for submission (MOJ, 2022). The poll used data from the annual report of Jordan's government hospitals for 2021 to assess the cost of government services as a general component. The primary data used allowed for some of the important outcomes as well as definitive and substantial conclusions that are useful in policy and decision-making in general.

4. ANALYSIS, FINDINGS, AND DISCUSSION

The purpose of this study is to provide light on direct health spending at hospitals linked with the Ministry of Health in 2021. Data on hospital expenditures and the number of employees per job were gathered individually for each hospital, and these expenses were detailed according to the accounts map categorization established by the general budget department. Analyze the data in tables prepared to meet the research's objectives and develop some indicators and suggestions that will serve as the foundation for assessing the magnitude of hospital costs on an annual basis and using the approach used in this study.

During the year 2021, the volume of spending on secondary healthcare services at hospitals linked with the Ministry of Health accounted for approximately 71% of the ministry's total operating general expenditure, both current and capital. It is obvious that the expenses having the biggest influence are personnel salaries, pharmaceuticals, and medical consumables, which accounted for 53.2% and 24.5% of total hospital expenditures, respectively. This necessitates analytical research to determine ways to regulate and eliminate these expenditures, as well as waste. Furthermore, the number of employees in hospitals affiliated with the Ministry of Health accounted for approximately 56% of the total employees in the ministry, with the majority concentrated in the positions of (Nursing and Midwifery) and (administrative and support functions), accounting for 45% and 27%, respectively.

According to Table 1, the volume of very direct spending at hospitals affiliated with the Ministry of Health's budget for 2021 was about 212.6 million dinars, or 71% of the ministry's total operating general expenditure, both current and capital. It should be mentioned that Prince Hamza Hospital was left out because its budget is self-sufficient.

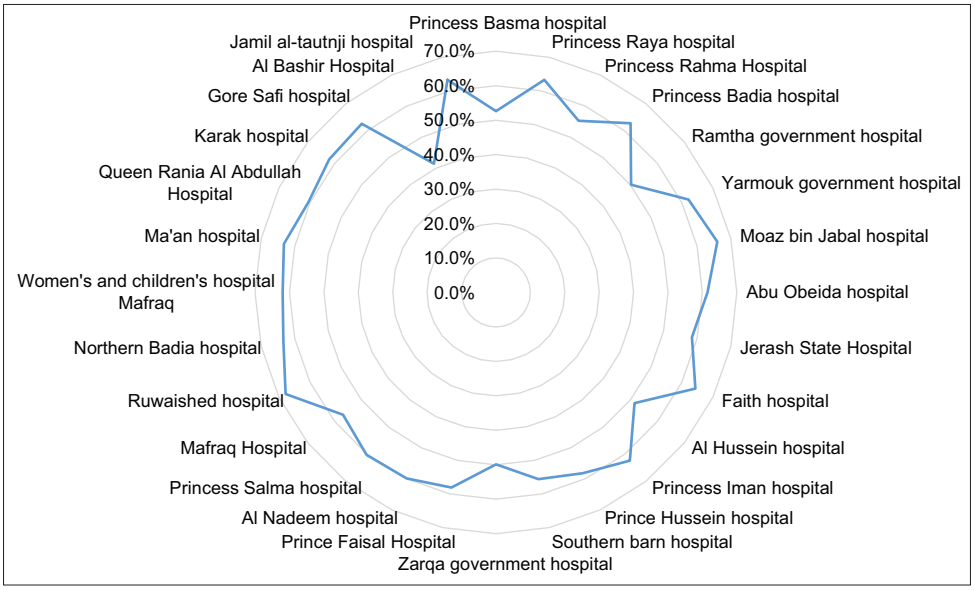
For 2021, the yearly cost of the remuneration package for staff in hospitals associated with the Ministry of Health was about 21.2 million dinars, or 53% of the overall cost of direct hospital spending. It should be mentioned that the overall number of employees at these institutions was around 17 thousand, accounting for 52% of the total number of employees in the Ministry of Health. According to Table 1 and Figure 1, Ruwaish hospital in Mafraq governorate spent the most on this category, accounting for almost 68% of total hospital costs in 2021. While al-Bashir Hospital had the lowest percentage of cost, accounting for 42% of overall hospital expenses, it should be mentioned that the overall expenditure on workers' compensation at the level of all hospitals associated with the Ministry of Health budget amounted to 53% of total expenditure.

The value of hospitals' demands for medications and medical consumables in 2021 was around 97.9 million dinars, or 24.5% of total hospital direct spending. Medicines (67.6 million dinars) and medical consumables (30.3) million dinars According to Table 1, al Bashir Hospital had the greatest amount of spending in this

Table 1: Spending in Government Hospitals and Allocated Allocations within the Ministry of Health Budget for 2021

Spending in Government Hospitals Allocated within the Ministry of Health Budget for 2021						
#	The hospital Name	Total expenses	Employee compensation ratio	Pharmaceuticals and medical supplies ratio	Average emergencies cost	Average entry cost
1	Princess Basma hospital	29,269,713	52.6%	30.8%	42	1439
2	Princess Raya hospital	6,784,798	63.3%	15.3%	36	1016
3	Princess Rahma Hospital	9,751,573	55.3%	28.2%	60	643
4	Princess Badia hospital	5,932,380	62.8%	10.6%	89	476
5	Ramtha government hospital	9,441,626	50.2%	23.9%	35	1225
6	Yarmouk government hospital	7,112,239	62.1%	15.3%	42	1392
7	Moaz bin Jabal hospital	5,021,957	66.0%	13.0%	36	1288
8	Abu Obeida hospital	5,054,328	61.5%	14.4%	28	1350
9	Jerash State Hospital	11,195,857	58.4%	15.3%	42	961
10	Faith hospital	8,501,790	64.3%	15.3%	44	1375
11	Al Hussein hospital	26,858,262	51.5%	19.5%	74	1364
12	Princess Iman hospital	5,525,318	62.4%	18.6%	46	1700
13	Prince Hussein hospital	10,141,301	58.2%	14.8%	48	1262
14	Southern barn hospital	6,172,105	55.6%	19.0%	59	1449
15	Zarqa government hospital	30,120,495	49.9%	23.6%	51	765
16	Prince Faisal Hospital	12,741,212	58.1%	20.2%	36	838
17	Al Nadeem hospital	9,510,539	59.9%	17.0%	45	830
18	Princess Salma hospital	5,031,801	60.3%	12.6%	71	1434
19	Mafraq Hospital	8,248,987	56.9%	21.1%	65	1788
20	Ruwaished hospital	2,270,088	67.9%	9.1%	46	3343
21	Northern Badia hospital	7,735,049	63.4%	10.4%	76	1892
22	Women's and children's hospital Mafraq	5,462,878	62.0%	9.9%	110	748
23	Ma'an hospital	8,930,265	63.2%	14.9%	33	801
24	Queen Rania Al Abdullah Hospital	6,834,991	60.5%	18.1%	80	1420
25	Karak hospital	20,195,440	62.0%	17.5%	130	1126
26	Gore Safi hospital	6,319,120	62.6%	13.3%	60	1292
27	Al Bashir Hospital	107,215,758	41.5%	39.3%	90	1172
28	Jamil al-tautnji hospital	12,176,480	63.3%	17.8%	56	709
	Total	389556350	59.1%	17.8%	58.8	1253.5

Figure 1: Employee compensation ratio for all Jordan's government hospitals



category, accounting for almost 39% of overall hospital expenses in 2021. The women's and children's hospitals and Mafraq had the lowest percentage of spending, accounting for 10% of overall hospital expenses. It should be mentioned that at the level of all hospitals associated with the Ministry of Health budget, total expenditure on medications and medical consumables stood at 25% of total expenditure.

It should also be highlighted that the costs of patient admission and evaluation at Al Bashir Hospital are much greater. This is because of the conditions surrounding the COVID-19 epidemic and the protocols for using the hospital to accept COVID-19 injuries. As a result, the number of emergency visitors and clinics decreased, as did the admission of regular patients who were not infected with COVID-19. The ratio of the remuneration package for personnel in the governorate's hospitals to the overall cost of direct expenditure in hospitals has risen to 59.2% on average. There has been an imbalance in employees' beds. Princess Basma Hospital had 4.2 employees per bed, whereas Princess Rahma Hospital had 2.8 employees per bed. Other expenditures are deducted from the number of employees. The cost of admission per patient at Princess Badia hospital was around 476 JD, making it the lowest cost of admission per patient at the ministry's facilities. While the average cost of admission per patient in Irbid governorate hospitals was (1443) dinars. The cost of evaluating patients in emergency departments has decreased, with JD (28) at Abu Obeida hospital having the lowest cost of reviewing emergency departments and clinics/patients. While the average cost of examining these departments in the Irbid hospitals was around 46 dinars.

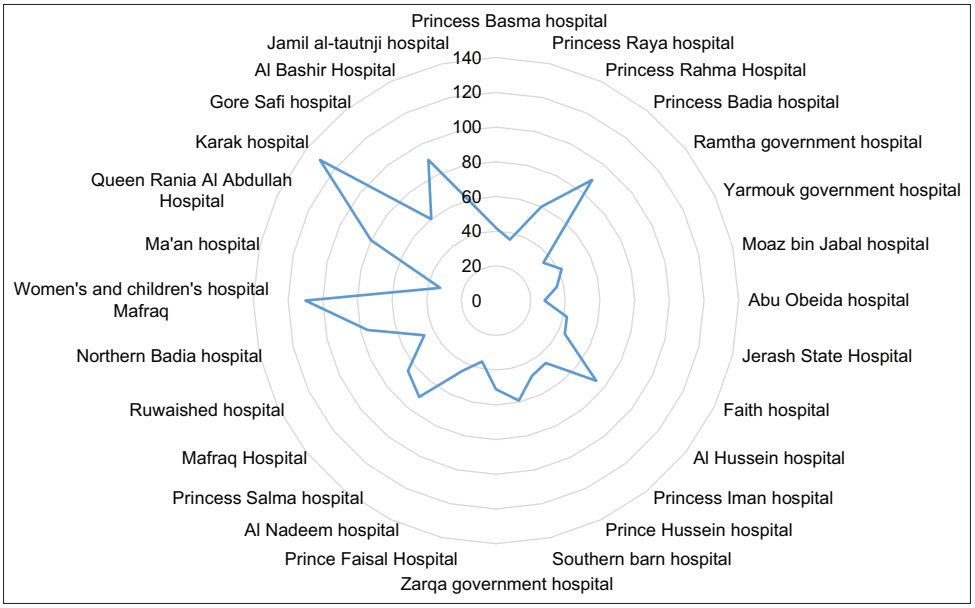
The remuneration package for personnel in the governorate's hospitals was 62.3% of the total cost of direct hospital spending on average. There has been an imbalance of employees to beds. Gour al-Safi hospital had a staff/bed ratio of 5.1, whereas Karak hospital had a staff/bed ratio of 3.0. In Karak hospitals, the average cost of patient admission is roughly 1209 dinars per admission. Admission per patient costs around (1,262) dinars at Karak hospital and (1292) dinars at Ghor al-Safi hospital. Furthermore, the cost of patients' visits to emergency departments and clinics at Karak hospital was 130 dinars per patient, compared to 60 dinars in Ghor al-Safi hospital, and the highest cost of patients' visits to emergency departments in Jordan, as shown in Figure 2.

The economic report produced by Jordan's Ministry of Health, which was compiled by a committee appointed to determine and calculate the expenses of health services supplied by Jordan's Ministry of Health, has been evaluated. The overall costs, their particular components, and the technique for determining the average cost of services in general were analyzed, and the most notable results were identified.

The report's most important findings in the process of calculating the costs of services were incorrect and did not rely on the cost accounting system of activities or others. Furthermore, the calculation system has resulted in a considerable discrepancy in the cost of calculating each service from one hospital to the next, confirming the calculation method's inadequacy. The calculation technique does not assist the ministry's services development team or the operations improvement team in identifying higher-cost centers and high-cost activities in order to enhance their delivery processes, which is the purpose of assessing service costs. Consequently, the existing calculating process does not allow decision-makers to make reasonable decisions on healthcare pricing, whether to establish the amount of the sector's expenditures or to submit them to the public or for the sake of outsourcing health-care services to the private sector.

The availability of a group of essential discussions that, through their work, may establish the sound fundamental rules that allow the team to compute the costs of services, particularly the cost accounting department, to do their job with great precision. As a result, a good accounting system is constructed using best practices and is founded on accepted accounting principles and international accounting standards (Ab-Bader, 2021; Aljabr, 2020; Okaily,

Figure 2: Average Emergencies Cost for all Jordan's Government Hospitals



2021). To ensure the availability of an accurate and unambiguous classification of the accounts tree (accounts directory), highlighting all cost centers (accounts directory, cost centers) (Asfahani, 2021). a clear automated process system that identifies the major and supporting processes, details them, identifies activities and tasks, and connects them all to the accounting system, specifically each process and its elements with the cost center directly related to IT (operations manual) (Attanayake and Aktan, 2015). A list of the government services supplied by the body in question (Ministry, Department, or institution). So that these services have a sound structure and are classified based on sound principles, such as the services classification guide or others, to ensure the grouping of each similar category or group of sub-services within one main service and then determine the processes for providing each service based on the approved operations guide (services guide) (Cosgrove and Loucks, 2015). Members of the cost accounting department, members of other accounting departments, members of the operations department, members of the services department, members of the information technology department, and others as needed, comprise a qualified human cadre capable of performing the calculation process (human resources) (Crouch, Jacobs, and Speight, 2021). Finally, consider the coherence and clarity of the link between the regulations and the preceding things. So that all team members are usually aware of the principles of services, calculating their charges and the calculation process needs (Haroun, 2015).

5. CONCLUSION

According to Jordan's Planning Commission projection for 2021, 2.7 million people, or 24% of the overall population, are poor, According to the report of the minister of planning last June. Making research into the complexities of the cost of public healthcare service providers vital and relevant. Currently, the majority of Jordan's public hospitals employ traditional costing methods, which frequently produce erroneous and misleading cost information. The current costing method is also incapable of establishing a strong management control model in a hospital setting since it is unable to answer a few critical management issues that necessitate cost analysis at the micro level of the organization. As a result, in this paper, we propose that the Jordanian Ministry of Health establish a computerized system that calculates the actual costs of each hospital and health center separately and provides a database through which stakeholders can study and analyze the data systematically in order to improve the level of health services provided to citizens. This will allow the Jordanian Ministry of Health to select a budget for each hospital separately from its central budget in the future. Improving Jordan's Ministry of Health is standing among donor nations in order to acquire future grants and loans. Furthermore, activate the Health Activity-Based Costing system (ABC) to control expenses, particularly medicine and medical consumables, in order to reduce waste; link disbursements on the system with commitment documents; and conduct an inventory at the end of each year to ensure that the inventory matches actual spending. The investigation of the barriers that hinder the incorporation of the expense of health-related activities into all hospitals and health centers of all types.

Conducting economic feasibility studies prior to the development of any new hospital, as well as working with the Royal Jordanian medical services, in order to provide integrated services at the lowest feasible cost and assure access to a well-distributed network of hospital locations. Furthermore, agreements established with universities are examined on a yearly basis in order to improve hospital medical services. Furthermore, determining the basis and criteria for the disbursement of financial dues to doctors in a way that leads to the best use of their expertise; reviewing the granting of overtime allowance to doctors and pharmacists who are appointed beginning in 2023. Furthermore, we should continue to make efforts to guarantee that all people have access to health insurance, taking into consideration the payment of the required contribution as a proportion of the treatment value, and enhance the quality of use of health care expenses and the method of access to them.

Adopting a defined approach within the Ministry of Health's strategic plan to distribute health and administrative cadres to hospitals based on the real needs of the institution leads to improved medical service quality, which leads to the activation and rationalization of operational expenditures. The ministry should transfer as many medical and health cadres as possible from administrative positions in the Jordanian Ministry of Health and its directorates to work in hospitals, strengthen their cadres, and benefit from their expertise, which will reduce the high cost of workers' compensation and stop appointments except for urgent and necessary needs, thus lowering total costs. Likewise, performing additional research and conducting studies on the issue of health and care economics would Conducting economic analyses on the cost of health-care services offered to Jordanians.

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