




INFORMATION AND ITS USE IN HEALTH COST MANAGEMENT

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ABSTRACT

The objective of this article was to discuss the use of cost information as a tool for managing resources in public health. To this end, a literature review was carried out regarding information and costs for decision making, especially for public managers. It was found that the most important thing is to understand the concept of information, so that it is useful and timely to users. In addition, it was observed that users do not have a correct understanding of cost information, which makes decision making difficult. The subject deserves to be widely debated and empirical studies should be carried out in order to understand the current scenario of the usability of cost information by public health managers.

Keywords: Use of Cost Information. Value of Cost Information. Costs as a Management Tool.

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INTRODUCTION

In recent years, the practices of making cost information available to improve decisions in the scope of public management have been expanded as a support in the search for optimization of public resources and improvement of the quality of spending, subsidizing the search for efficiency, planning and monitoring. Although the availability and use of cost information as a management tool is based on legal regulations, its use is still incipient (German, 2018; Da Silva, 2024)

What can be seen is that the legal requirement is not enough for there to be a usability scenario of cost information. As presented by van Helden (2016), the use of information is related to the usefulness perceived by managers, which is related to its relevance and applicability in decision-making processes. Thus, according to the author, the usability of information depends on the possibility of meeting the user's needs and its comprehensibility. In this way, it suggests that it is necessary to understand what information is necessary so that managers can make decisions based on cost information.

The reduced familiarity, knowledge and understanding of cost information makes the process of use much more challenging and compromises its use (. To do this, users must be trained in the use of cost information. In order for instructions on the use of cost information to be passed on to professionals with multiple backgrounds, with different levels of prior knowledge, without previous training in cost accounting or with the subject, it requires different guidance and approaches, with easier language and the use of alternative learning approaches and active learning techniques that allow for the expansion of critical thinking, motivation and easy understanding (Budding; Heroes, 2022; Da Silva, 2024; Van Helden; Reichard, 2019) (Cohen; Karatzimas, 2022; Da Silva, 2024).

The implementation of cost management in health generates information that is not always used in the management of resources. For Gonçalves, Alemão and Cunha, the understanding of cost information must go beyond "how much it costs", aiming at the destigmatization of costs as a "trivial tool for cutting costs". Cost information should be understood as metadata. Cost metadata has become an essential tool, which guides quality proposals, as it provides a basis for knowledge, monitoring and systematic evaluation of the expenses of the various care and administrative activities in the health sector. The use of cost metadata can be evidenced in the organizational strategy, by enabling the alignment of tactical/managerial actions, by linking strategic objectives to daily operations, allowing the guarantee of the quality of public spending from the top to the bottom of the administrative pyramid. In view of this, the present theoretical study aims to discuss the use of cost information as a tool for managing resources in public health. (2016)

The information allows to be aware or identify problems, allowing to evaluate and select alternative solutions, in addition to reviewing results or consequent performance of the decisions implemented based on information. (Repo 1989)

It is from the knowledge of the service provision process, including the consumption of inputs and the remuneration values of these factors, that it becomes possible to expand the capacity to manage the provision of health services and, consequently, the efficiency of spending.

THEORETICAL FRAMEWORK

INFORMATION, ITS VALUE AND THE DECISION-MAKING PROCESS

Initially, it is necessary to understand the different concepts of data, information and knowledge. Data are the elements closest to empirical reality, they are the "raw material" for information (Gonçalves *et al.*, 1998). For Davenport, data are meaningless observations, unlike information that has meaning, purpose and relevance that is organized with a specific purpose in mind. Broadening the concepts of information, knowledge includes reflection, synthesis and context. Knowledge can be combined with other forms of knowledge, generating even more knowledge that can be passed on to other individuals or environments. Thus, data are inputs for the construction of knowledge. What for one person may be considered data, for another may be information and, for a third, be knowledge, depending on the understanding of the latter (Gonçalves (1998) *et al.*, 1998).

Information is conceptualized as an input to the decision-making process, and can be transmitted and received, in addition to being understood in an organization as the content of a message to a receiver. Any and all information has two types of qualities: intrinsic, associated with portability and applicability, and extrinsic, associated with the receivers. Among the properties, relevance, which is linked to the receiver, is the most important. (Gonçalves, Dias, et al. 1998) (Gonçalves, Dias, et al. 1998)

Information is only valuable when it makes it possible to reduce uncertainties in terms of probabilistic and when used. In addition, value depends on the (Repo 1989) individual context, where individuals with diverse perspectives assign different values to the same information. Barreto adds that each individual, by having their specific preferences, priorities and desires, attributes a relative and specific value to each piece of information. (1996)

In the perception of Moresi (2000) *apud*, (Gonçalves, Alemão, and Drumond 2013) the value of information and of an information system depends on some fundamental factors: "reliability and accuracy of information; the transfer of information between sender

and receiver through the information system; the timeliness, quantity and quality in the availability of information; support for the decision-making process, improving the quality of decisions; the use of information as a strategic resource of the organization". Thus, the author presents that the value of information lies in the ability to support the decision-making process, presenting that the value of information is a function where information, organization, purpose, actions and results are variables.

Some actions at different levels of complexity can add value to information, as presented by Barreto (1996). In the first phase or level, the intention is to add value to the whole, aiming at an adequate distribution of information. This phase allows the construction of information databases, which are collections in general, libraries or information centers, electronic or physical, promoting the development of the individual, a group or society. It represents a high-cost and quantitative phase, which aims to distribute the largest amount of information to users. It is the (Barreto 1996) *function of information production*, which allows the accumulation of information stocks, requiring the definition of practices and processes for the generation of information. The second function is the *information transfer function*, which aims to transmit messages (information) to a given reality, where the aggregation of value occurs by transferring (distributing) the information to the receivers. It represents a qualitative phase, at the level of the receiver, who will interpret the information according to his competence, previous knowledge, allowing the generation of knowledge individually, in a group or for society. In the third phase or level, what generates an increase in value at the level of the receiver is the re-elaboration of information, with the *generation of knowledge by the receiver*. When the receiver perceives and accepts the information, he establishes a relationship between information and knowledge, generating gain for the receiver.

Moresi adds that the value of information must be understood in two contexts. First, to meet the needs of a person or a group, and for this it must be made available in the correct way, individually to the person or to specific groups, at the right time, in the right place. Information in the context of the organization must also be considered, whose value of information is related to its role in the decision-making process. (2000)

One must also consider the purpose of the information. The purpose of information is to know the external and internal environment of the organization and the possibility of knowing how to act in these environments. Another purpose is to create a synergy aimed at developing strategies for structuring organizational activities to map the necessary information, standardizing collection, evaluating quality, allowing storage, distribution and monitoring of the result of its use (Gonçalves et al., 1998).

In organizations, the use of information is essential to implement changes for continuous improvement of their activities, in decision-making processes and in the control of operations, in the greatest value for companies, generating excellence, especially in the management of health costs. (Rezende, Cunha, and Bevilacqua 2010)

DISTINCTION BETWEEN THE USE OF COST INFORMATION IN THE PRIVATE AND PUBLIC SECTORS

There must be an alignment of cost information with the organization's strategy. As presented by Bornia, a cost system requires that you first define (2010) *what* information is important, allowing you to understand what should be measured, and then decide *how* this information will be measured. Diehl, on the other hand, presents that the choice of management instruments used to support decision making, such as cost information, can offer different results in different contexts, depending on what is intended with the measurement. It is, therefore, essential to meet the purposes of its use, which relates the purpose of use to the strategic context of the organization. For Anthony and Govindarajan, the choice of a control system, such as cost systems, must be aligned with the purposes of the organization's strategic context, and for different purposes of use, different systems and methodologies must be used. (2004) (2008)

Regardless of the purpose of its use, the construction of cost information must always meet the scientific methodological rigor so that the validation, quality and reliability of the information is maintained. (BRAZIL, 2013)

The main purpose of cost information is to support decision-making by ensuring that the information helps in the decision on investments, structuring processes, pricing services and products, and creating new services. Considering the different purposes of the use of cost information, it is important to understand that the use of cost information in the private sector differs from the use in the public health sector. In the private sector, cost management and the use of cost information have been consolidated for years, while in the public sector, the notion of what "costs" is is still something new for managers (Brasil, 2013). The use of cost information in the private sector aims at accounting standardization, "reduction of expenses", "maximization of profits", "increase of profitability", among others (Kaplan; Norton, 2001) (Camargos; Gonçalves, 2004) .

In the public sector, cost information aims at the best use of resources — *best value for money* (Gonçalves; German; Drumond, 2013) . The Brazilian Accounting Standard provides guidance for cost management in the public sector, defining the conceptual framework for the preparation and disclosure of accounting information in the public sector.

In order for public managers to improve the quality of the services provided, offering quality services with efficient cost allocation, it is essential to understand the cost information (Brazil, 2021) (Nunes, 1998).

Another purpose of cost information, commonly used in the private sector, is to instrumentalize management to reduce costs. Despite being an important managerial objective, cost reduction, in isolation, is pointed out as insufficient (Kaplan; Cooper, 1998). In line with the purely financial analysis of cost information, these should be analyzed as non-financial measures to improve processes and quality of services and products, aligned with result indicators. In this understanding, service organizations, such as health organizations, currently compete in dimensions beyond costs and prices, which represents the need for a system of costs and planning that broadens the focus beyond the merely financial dimension. Thus, cost systems are understood as part of a management information system ((Brignall, 1997) MIS), aggregating information other than financial information, such as quality and innovation information, which allows the improvement of external and internal information, at all levels of the organization, whether at the strategic, tactical or operational level (Gonçalves; Teixeira; Froes, 1998)

Cost information from public organizations in several countries is widely used to comply with legislation and regulations for accountability and legitimacy of the organization, satisfying the needs of *external* stakeholders, and insufficiently used by internal managers for more managerial purposes (Silva, 2024). Thus, in order to arrive at the scenario of using cost information for managerial purposes, the legal and normative requirement alone is not enough, as the effective use will be promoted by the usefulness perceived by the managers.

In the Brazilian public sector, the fiscal crisis of the State and international competition in the 80s created a favorable scenario for the incorporation of cost information in the public sector, in line with the principles of *New Public Management* (NPM), which are administrative reforms introduced from the 70s in several countries aiming to apply tools and practices of private sector management in the public sphere. There are several legal requirements aimed at the use of cost information, such as CF/88 itself, which defines that the public administration must, among others, comply with the principle of efficiency; the Fiscal Responsibility Law, which establishes guidelines for the fiscal balance of federative entities, and the Brazilian Accounting Standard - NBC 34, which establishes that the implementation of cost systems and their use in decision-making is mandatory. Despite the legal requirement, the use of cost information is still incipient. (Da Silva, 2024; Gonçalves et al., 2010) (Brazil, 1988) (BRAZIL, 2000) (Brazil, 2021)

In the health sector, the use of cost information is based on the Organic Law of the SUS (Law No. 8080/90) which, by requiring the maintenance of the economic and financial balance of SUS service providers, requires that the costs of these services be known. The (Brazil, 1990) *Charter of Rights of Health Users* requires that cost information be known and disseminated because it is the citizen's right to have information about the care provided to him and the costs of this care (Brazil, 2007).

Despite the legal requirements, the use of cost information as a management tool in the public sector is not yet consolidated. As Nunes states, "knowledge of the costs of public services is essential to achieve an efficient allocation of resources. Lack of knowledge of costs is the greatest indicator of inefficiency in the provision of public services" (p.87). (Brasil, 2013; Gonçalves et al., 2010) (1998)

It is possible to identify that the legal requirement for cost information is not enough. It is necessary that the cost information meets the desires of citizens, the needs of public administrators, the dictates of legislation and the best value for money, aiming at what is understood as the quality of public spending, linking the knowledge of costs to public sector spending and the result of government actions. (Gonçalves; German; Drumond, 2014)

In Alemão (2017) the use of cost information is presented as a subsidy in the understanding of some constructs widely defended and used in the management of the private sector, and which should also be used in the public sector. The concept of *Accountability*, which has as a reference the transparency in the use of resources, has with the information of costs the possibility of knowing the "how", "where" and "why" the resources are used, thus expanding the management of these resources to the institution, to the control bodies and funders. The concept of *best practices and benchmarking* are linked as cause and consequence. For an organization to be *benchmarking*, it presupposes that it reproduces the best practices, based on the mapping of processes and the generation of indicators. The availability of cost information, with the sharing of the definition of activities and adequacy of processes, allows the exchange of experiences for the development of organizations. The constructs of *scientific-technological development and innovation* are aligned with cost information by using their knowledge to support the development and advice of new managerial technologies or assistance and also to define regulatory policies in the health sector. The best *value for money construct* means the search for the best use of resources, at all levels of management. It is not enough to cut costs and avoid waste. It is necessary that the resources be better used. Cost information allows subsidizing management strategies that seek the appropriate use, with quality, of scarce health resources.

THE INTERACTION BETWEEN THE NEEDS OF USERS, USABILITY AND THE REAL USE OF INFORMATION BY PUBLIC MANAGERS

First, van Helden and Reichard (2019) present that there is an interaction between the needs of users, the usability, and the actual use of accounting information in the public sector by managers. In this work, the authors distinguish the main concepts: A *need* can be expressed as a desirable characteristic of information included in a document; *Usability*, understood by the use of information to support its decisions or accountability, can be divided into relevance and comprehensibility; *Comprehensibility* It is a multidimensional phenomenon, which goes through the format of information (headings, explanation of accounting terms), channels of availability (paper, digital); *Relevance* represents that the information provided is aligned with what users need for their decision-making or accountability, i.e., it contains information on various accounting issues relevant to decision-making or accountability of divergent groups of users; *Use* is the query itself, which includes reading and analyzing the information by users in decision-making.

Van Helden and Reichard's research presents the interaction between the needs of users, usability and the actual use of information by public managers, with different understandings for " (2019) *usability*", "*users*", "*recipients*" and "*preparers*" of cost information. The authors point out mainly that the "*usability*" of the information and the service to the various "*users*" should be considered. For the authors, accounting information must first be useful. The challenge is to meet the different needs of different user groups. They present that the main purposes of accounting information can be presented in two major perspectives: in the *ex-post perspective*, to be accountable to the various stakeholders; and another, in the *examination perspective*, to support decision-making. From the perspective of accountability, the objective is to comply with existing rules and regulations and ensure legitimacy before external stakeholders and those responsible. From the perspective of using information to support decision-making, information gains importance for external *stakeholders* (e.g. creditors), managers and other internal stakeholders. The use is presented as "purposeful", when its purpose is to estimate cash flow, calculate the cost of services, or evaluate performance. They also present that the use can be "ceremonial", when used as ammunition to support political interests or manipulate strategic decisions. (Van Helden; Reichard, 2019)

The authors distinguish between those who are the "recipients" of the information, the group to which the information is intended, usually to meet a legal demand, who, however, may not be interested in the information. The "users" of the information, on the other hand, are people or institutions interested in certain financial issues that, for the most

part, are external to the organization, such as creditors, voters, consumers, supervisory bodies, regulators. The needs of users are not always met. The greater emphasis is on legal accounting standards and not on the value and understanding of the information by those who will use it. (Van Helden; Reichard, 2019)

They also present the terms "*preparers*", for the accountants who produce the information and the "*intermediaries*" are the ones who help the "*users*" in understanding the information, which can generate the risk of manipulation of this information. In this way, each group perceives the information according to its interests and need for information.

The authors also distinguish that the concepts of "*Usability*" and "*actual use*" must be separated. Usability depends on several supply factors such as the quality of the information, which includes its timeliness, comprehensibility and the possibility of meeting the user's real need for information. As for the actual use, it has as a relevant factor the overload of information, the size and financial position of a public sector organization or the role of intermediaries (accountants). (Van Helden; Reichard, 2019)

In the private sector, the main users of information are investors and lenders. In the public sector, users may have diverse interests beyond profit information, such as socially relevant objectives. The main ones are the recipients of the services (citizens) who seek to know, in addition to financial information, whether the public sector is complying with what was agreed. (Budding; Helden, 2022)

Van Helden and Budding present that managers, despite considering the cost information potentially important, do not use it. The information can be usable, without actually being used. In order to be used, the information can potentially support the solution or dissolution of these problems or reduce concerns. To measure the users' needs, the predominant methods used are questionnaires, interviews and presentation of information to test the user's understanding, asking them to propose improvements in the documents, based on their experiences. For the authors, two issues should be considered as determinants of the use (or non-use) of the information: the relevance and comprehensibility of the information. They add that it is difficult to balance the comprehensiveness of the information with its relevance, ease of use and comparability. They add that managers do not use the information because it is not relevant to them, and it is necessary to include information on efficiency so that it expands the relevance and understanding of the information. (2022) (Budding; Helden, 2022)

In addition, the quality of the information is also a relevant factor in the use, and it is necessary to balance several factors. On the one hand, users, accountants, who want documents and are able to understand them, and on the other, lay users, who run the risk

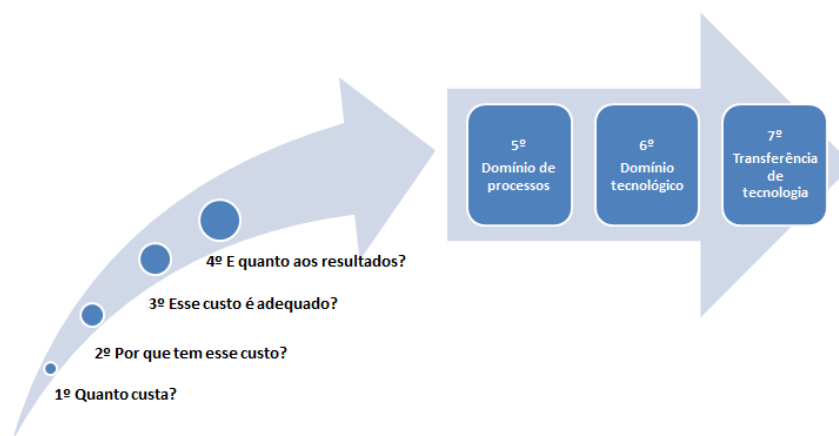
of not being able to understand the reports and depend on additional explanations. Balance between long reports or too aggregated. Balancing accuracy and complexity on the one hand, and comprehensibility, clarity and digestibility of such financial information on the other.

UNDERSTANDING OF THE MANAGERIAL PATH OF COST INFORMATION IN THE HEALTH SECTOR

In order for cost information to be used beyond a trivial tool for cutting costs, it is necessary to understand the information as metainformation. Metadata is a summary of other non-financial information, in addition to "how much does it cost?", usually analyzed in the lines of the financial statements (Gonçalves et al., 2016)

This understanding is presented in German when describing the internal managerial path of the levels of understanding of cost information, as represented in Fig.1. (2017)

Figure 1 – Levels of understanding of cost information



Source: (ALEMÃO, 2017)

As presented, the first level of complexity seeks to answer the simplest, quickest, and most basic question: "How much does it cost?". Despite the complexity of answering this question, as it is the beginning of the process of information construction and requires the organization of processes for methodological validation in its construction, it still represents the beginning of the understanding of cost information. By delving deeper into the complexity, we seek to answer a second question of greater complexity: "Why does it have this cost?". Answering this question requires a deeper understanding of how resources are consumed by products and services, in addition to understanding the care and administrative processes that led to the consumption of these resources. Increasing the complexity of understanding, another question must be answered: "Is this cost adequate?".

The answer to this question becomes an even greater challenge because it requires an analysis beyond the purely financial view. It is necessary to understand the qualitative dimension, involving the value judgment of managers and care, because in order to analyze the adequacy of costs, it is necessary to understand the adequacy of the processes of construction of this service/product cost. This question aligns the understanding that, if the processes are already defined as adequate, what results will be generated/expected. Thus, there is a complete cycle of understanding starting from the 'how much it costs' to what 'results' were achieved and their paths taken, which corresponds to having the "*mastery of processes*". Thus, we have the fifth envelope in the path of understanding cost information as metainformation, where the domain of processes means that the process for building the service or product is known in an adequate and optimized way. From the process domain, we move on to the sixth level of information understanding, which is the "*technological domain*". Having technological mastery means that you know how to do it, what processes and inputs are necessary for the production of adequate services/products that generate an expected result. From the technological domain, we have the seventh and last level, which is the "*transfer of technology*". We can then say that to perform, for example, a femoral fracture treatment, knowing that it costs X reais (1st level - "how much does it cost?"), the inputs that make up this service (2nd level - "why does it cost?"); the assessment that this process x cost is adequate (3rd level – "is it adequate?") and what is the expected result (expected infection rate, number of days of hospitalization, for example) (4th level – "and the result?"); which means that I know the processes that involve a femoral fracture surgery (5th level – "process domain") that represents I know how to do it, that there are care protocols (6th level – "technological domain") and I can pass on these care processes to other hospitals (7th level – "technology transfer").

CONCLUSION

The objective of this article was to discuss the use of cost information as a tool for managing resources in public health. It was found that the most important thing is to understand the concept, in order to provide useful and timely information to users. Speaking of users, in public management, there are legal provisions that state the need for cost information for health management. Although the existence and availability of information is not denied, users are not prepared to interpret it correctly. Understanding cost information is a key factor for management. The subject deserves to be widely debated and empirical studies should be carried out in order to understand the current scenario of the usability of cost information by public health managers.



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