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Assessment of a Brazilian public hospital's performance for management purposes: A soft operations research case in action[☆]



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ABSTRACT

Brazil's public health management system has undergone substantial restructuring over the past decade. One of the consequences of this restructuring is the establishment of a new relationship between the Ministry of Health (MS) and the Ministry of Education (MEC) regarding the funding of Federal University Hospitals. The Brazilian Ministry of Health has implemented a certification process for the University Hospitals that requires meeting a set of financial, managerial, and educational processes related goals, and adoption of an assistance model. This article uses the MultiCriteria Decision Aid (MCDA) approach to support the development of a model that can help the university hospitals' managers assess their institutional performance to meet their joint goals with the MS/MEC and obtain the certification. This case study was conducted at a hospital within the Brazilian federal education network.

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1. Introduction

The hospitals attached to the Federal Universities in Brazil have long ceased to focus on the training of new healthcare professionals. Social and economic constraints have diverted the focus of these institutions from training to welfare practices. Known for their quality service, the University Hospitals assist many patients from the Brazilian National Health System (SUS). However, the University Hospitals can no longer sustain on the budget share allocated to the attached public higher education institutions (University) by the Ministry of Education. These hospitals also require funding from the Ministry of Health. Moreover, the exponential increase in the demand for health assistance provided by the SUS has further led to a readjustment of budget transfer policies to reflect the current situation. The federal government thus, created an inter-ministerial commission to define the necessary alterations in

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the management of University Hospitals to readjust them to the new Brazilian model of public healthcare. The commission evaluated the funding, planning, teaching, and assistance needs. The commission's final report suggested a series of modifications for the approval and release of budget funds from the SUS to the Federal University Hospitals.

The annual transfer of funds from the Ministry of Health is now contingent upon the certification of the University Hospitals by the SUS. Prior to the award or the renewal of this certificate, the following seven broad areas must be assessed: (1) health care; (2) SUS priority policies; (3) activities aimed at improving hospital management; (4) education; (5) research; (6) technological assessment and incorporation; and (7) funding.

Recognizing that each hospital is unique, the healthcare management body did not detail specific criteria for each one of these seven broad areas. Given the particularities of each University Hospital, such as size, region of location, assisted population, and delivery of postgraduate program (*strictu sensu*), among others, each hospital was asked to provide details on potential actions to help them meet the general certification goals. Thus, each hospital built its own individual criteria.

However, the decisions makers (hospitals' managers) remain unsure of the criteria that need to be assessed for the certification process due to the lack of a scientific model to define these goals.

Further, this process is a medium-term program that needs periodic re-analysis to maintain certification. Thus, one of the greatest challenges is the development of an instrument that allows for the systematic assessment of university hospitals' performance in achieving their goals. Within this context, this paper presents the use of a MultiCriteria Decision Aid (MCDA) approach to support the development of a customized model to assess performance. This model is designed to aid the managers of Brazilian Federal University Hospitals identify, operate, and measure the criteria that affect a university hospital's joint goals with the MS/MEC to obtain or renew their certification from that Ministry.

The present article is divided into six sections. Section 2 establishes the initial benchmark and explains the theoretical basis of the research. Section 3 reviews the existing literature and available methods on performance assessment models for hospital management purposes. Section 4 explains the certification requirements for the Brazilian university hospitals. Section 5 describes the construction of the assessment model for the case study. Finally, Section 6 concludes the paper with the findings and final considerations of the research.

2. Performance assessment model for hospital management purposes

The evaluation of health services in general, and in its more complex form, hospital services, present difficulties, which have been widely discussed in the literature [1–6].

Referring specifically to hospitals, the World Health Organization (WHO) defines them as being an important part of any health care system, responsible for providing care of low, medium, and high complexity [3]. In addition, hospitals are centers of knowledge and skill development. Consequently, hospitals are usually responsible for the use of most of the financial resources that a country directs toward healthcare [5].

For the referenced title, the report on the 2003 WHO Workshop [5] states that in Europe in the 1990s, hospitals were responsible for between 50% and 70% of all health-related expenses. At the same time, the report points to the reduction in the number of beds and the decreased length of stay in hospitals.

Faced with the need to adapt health spending to their public budgets, various nations (e.g., the United States, Australia, Canada, and several European countries) have promoted programs to accredit their health systems with the aim of improving the performance of their processes, structure, and results [2,5].

The issue of implementing accreditation programs lies in the difficulty of assessing, monitoring, and improving the performance of such programs, considering the particularities that each hospital has, such as its specific demands, geographic location, funding sources, offered medical specialties, and local health policies [4,5].

The studies, which are part of the search for answers to this problem, have advanced consistently. Veillard et al. [7] conducted a survey including more than 20 European countries, where more than 100 indicators of hospital performance were identified and classified into six dimensions. The research resulted in the development of the PATH (Performance Assessment Tool for Quality Improvement in Hospitals).

Purbey et al. [8] proposed a structure for the evaluation of healthcare processes based on the following models: (i) balanced performance measurement matrix; (ii) performance measures for time-based competition; (iii) performance pyramid systems, (iv) balanced scorecard framework; (v) Brown's input, processes, outputs and outcomes framework; and (vi) performance prism.

Oliveira et al. [9] developed the model MARCO (MultiCriteria Model to Allocate Human Resources in Community Care Programs), which is based on the use of multi-criteria decision analysis

(MCDA) as an alternative approach to traditional methods for prioritizing interventions in the healthcare sector.

Recently, in their study of public health emergencies in Brazil within the context of the International Health Regulations (IHR 2005), Teixeira et al. [10] provide more evidence on the issues raised above, particularly on the question of identification of criteria and their scales. These issues compromise the representativeness of the constructed model.

In addition to these claims, more recently, the financial pressure introduced a new dimension to the decision making process of hospitals. It affects the quality of hospital operations in terms of organizational infrastructure and processes that support the delivery of care in time, as one needs to prioritize the administration of expensive treatments in case of budget limitations. These concerns suggest the importance of looking at the problem of decision making from a strategic point of view, given that most operations require an integrated approach both at the higher levels as well as the operational level [11]. Van der Weijden et al. [12] even conducted a qualitative key-informant study with group discussions and semi-structured interviews to explore how clinical decision processes can be constructed to facilitate shared decision making. All these approaches were developed with the purpose of providing strategies to make clinical practice guidelines more reliable and representative to facilitate shared decision making. The problems presented above, however, remained unresolved.

Who should define the criteria? What criteria should be considered? How to build the scale to assess the criteria? How to integrate the criteria? Who will be responsible for updating the decision model? These are some of the macro-level decision-making questions that a framework for reasonable clinical decision-making needs to discuss, if the decision model desires to capture the trust and credibility of its users [13,14].

In addition, the existing methods for the management of hospitals are also debatable due to reasons, such as: the lack of holistic view of the organization; recognition of the peculiarities, values, and preferences of those who are responsible for using the system for decision support; and the understanding that the system developed is a performance evaluation model and therefore, it is necessary that its metrics meet the properties of measurement theory [15].

Thus, with the disclosure of the benefits and capabilities of existing approaches, as well as the critique of their practical and theoretical applications, we can formulate the question for the present study as follows: 'how to define the boundaries, the stakeholders, and what is important, and how to model all these elements to provide decision makers with the information they need to manage and improve health care units, mainly, the university hospitals under their supervision?'

University hospitals are one of the most important media to accomplish the goals of providing free health assistance to the Brazilian population, and practical experience to professors and medical students. Thus, society's expectations of performance from this environment are quite high, not only in relation to its group of medical doctors, but also in terms of the management of these hospitals. This practical research is the result of a request from one of the Brazilian university hospitals. This paper details the process of model construction for the assessment of a University Hospital's (UH) performance, using MCDA as the intervention instrument [16–18].

3. The certification process of Brazilian university hospitals within the SUS

The Brazilian National Health System (SUS) was established by the Brazilian Federal Constitution of 1988 [19] and is regulated by Law no. 8080/90 [20], with the objective to shift the inequality in

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