

# Chapter 5

## Multi-Criteria Decision-Making Process for Decentralized Healthcare Services Assessment

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### ABSTRACT

*Home health service, as decentralization form in many health systems, has an objective to deliver high-quality, long-term care inside the patient's home. However, management of those services is about handling a complex decision problem related with the care delivery process composed by technologies, patients, structures, and professionals. Consequently, the decision problem requires finding effective ways to involve assessment and management of several criterias to achieve continuous quality improvement. For this purpose, its useful implements structured approaches with multiple criteria decision analysis (MCDA) techniques. Nevertheless, there are many MCDA methods available and these differ not just in how they are put into practice but also in terms of fundamental theories underpinning them. Therefore, this chapter contributes with a methodological approach to establish a decision analysis for assessing home health services through MACBETH and ULOWA techniques. To demonstrate the feasibility of the methodology, a study case was applied into a homecare service.*

### INTRODUCTION

Decentralization in healthcare can adopt many different forms. One of them are home health services, which has the objective to deliver high-quality long-term care achieving better health outside of traditional facilities and inside of patient's home. Additionally, their management is about handling the complexity of the care delivery process composed by users, technologies, patients, structures, and professionals.

In order to maintain the interaction and stability of these elements, management strategies are required to plan and assess the process quality. Consequently, a decision problem is generated coming from the results of these strategies, which involves find effective ways to encompass both assessments and man-

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agement of several criteria's as a way to achieve continuous quality improvement. Thus, patient safety, technology reliability and service effectiveness could be provided to produce quality of suitability for use.

Summarizing existing literature on decentralization and health systems performance (Panda & Thakur, 2016) literature review inspect 76 publications with the objective to clarify key concepts, essential variables, and develop a framework. (Panda & Thakur, 2016) results explain that the flexibility of decentralization has tremendous impact on health service functions; consequently, they must be adopted as a reform measure to increase efficiency and quality of service delivery.

Regarding to health outcomes, (Panda & Thakur, 2016) propose four categories:

1. Health status, which improve patient's health into hospital or a community health program;
2. Health-related knowledge, which concerns with the level of knowledge of the patient about preventive health procedures;
3. Health-seeking behavior, which include patient activities for improve or maintain health;
4. Satisfaction with care, which concerns with quality of care received.

Last but not least (Panda & Thakur, 2016) presents four challenges in assessment health service decentralization:

1. Measure decision making requires combine process and products;
2. Measure efficiency and quality in high and low levels;
3. Quality is a multidimensional element affected by process input/outputs that can be achieved through quantitative expressions;
4. Incomplete assessment from lack of fundamental references.

For this purpose, structured approaches as multiple criteria decision analysis (MCDA) into management strategies are useful due to the decisions involves multiple criteria that improve the quality of decision making. In addition, one things that should be consider by the MCDA users is that there are many methods available, which differs not just in how MCDA is put into practice but also in terms of the fundamental theories that underpinning them.

Therefore, the aim of this book chapter is to contribute with a methodological approach able to establish the implementation of a decision analysis process for assess and manage decentralized home health service through MACBETH and ULOWA multi-criteria decision-making techniques. A study case it was applied into a homecare service for chronic pulmonary diseases in order to demonstrate the feasibility of the methodological approach with several levels of management structures: rehabilitation center, regional development departments, municipalities and outsourced company.

The remainder of the chapter is organized as follows. Section II, Background, presents fundamentals of how measurements and decision making are put together to interact with decentralized health services . Section III, Main Focus of the Chapter, describes the three steps research methodological approach implementing MACBETH and ULOWA methods to establish a decision-making process for decentralized healthcare services assessment. Section IV, Results, presents a study case in a homecare service where it was applied the decision-making methodological approach as well as a standard representation of the decision analysis. Finally, discussions and conclusion are presented in Section V.

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