

TITLE

MCDA for Medical Devices evaluation in Lombardy Region

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TOPIC OF THE PAPER

Health Technology Assessment

Background

The technological trend in healthcare asks for a systematic analysis of the apparent innovativeness of healthcare technologies and related health benefits that can sustain an equitable access opportunity to different patients. Since the equitable access to health care is considered as one of the complexities that the industrialized countries have to face (Catananti, Cicchetti and Marchetti, 2005), many jurisdictions have implemented policies aiming at rationalizing healthcare resources, while improving the efficacy and efficiency of care (Catananti, Cicchetti and Marchetti, 2005).

The rising healthcare costs, combined with the demand for high quality medical care have forced clinicians and policy makers to express great interest in topics as “evidence based medicine” (EBM), “comparative effectiveness research” (CER), and “health technology assessment” (HTA) (Drummond *et al.*, 2008).

In particular, the Health Technology Assessment (HTA) has emerged as “a multidisciplinary process that summarises information about the medical, social, economic and ethical issues related to the use of a health technology in a systematic, transparent, unbiased, robust manner [...] to inform the formulation of safe, effective, health policies that are patient focused and seek to achieve best value” (EUnetHTA). At this aim, HTA was developed as a multidisciplinary field that aims at analyzing the medical, social, ethical and economic implication of the development, diffusion and use of healthcare resources (Fattore *et al.*, 2011; Ciani, Tarricone and Torbica, 2012), in order to support decision making by providing timely and relevant existing knowledge (Catananti, Cicchetti and Marchetti, 2005; Learmonth and Harding, 2006; Ciani, Tarricone and Torbica, 2012).

In this context, Italy has adopted policies oriented towards the widespread of HTA and, in particular, the Lombardy Region accumulated experience in the HTA context for the evaluation of medical devices (Garrido *et al.*, 2008). Starting from the introduction of the VTS Framework (Radaelli *et al.*, 2014), many advancements have been implemented towards the implementation of a MCDA process for conducting HTA in Lombardy Region.

Objectives

Given the necessity to widespread the knowledge of HTA practices in the Italian context (Lucioni and Jommi, 2017), this study aims at contributing at the diffusion of the knowledge of the use of HTA in Italy, by presenting the MCDA methodology adopted in Lombardy Region.

MCDA is defined as an emerging tool to take decisions in healthcare, which allow the systematic and explicit consideration of different factors that are able to influence the decision (Tony *et al.*, 2011a). One of the key principles of MCDA is the consideration of multiple objectives when judging the

desirability of a specific health technology, since it is unlikely that a single technology can satisfy all possible objectives (Keeney and Raiffa, 1993). Each objective, therefore, can be seen as a different criteria, against which importance (weight) and performance (score) are assigned (Marsh, Goetghebeur, *et al.*, 2017).

Methodology

In order to present the method implemented in the Lombardy Region, the Generic MCDA decision-making process has been adapted with modifications from Marsh, K., Goetghebeur, M., et al. (2017). In particular in Lombardy region, weighting is executed before scoring. Following this framework, the identification of the key steps that should be addressed to conduct MCDA process will be presented.

Preliminary Results

According to preliminary results, some benefits can be associated with the implementation of the described model. First, through the active participation of different stakeholders, the method facilitates the manifestation of personal and group judgments. Second, the consideration of the criteria and the dimensions selected allow researchers to address the principal requirements for a multiple criteria decision analysis: completeness, non-redundancy, mutual independence and operability. Third, there is the possibility to complement the priority index with additional qualitative comments not embedded in the aggregate measure but considered for the final decision. Last, different instruments can be considered in the different stages of the assessment.