

Prioritizing Value-Based Healthcare Strategies: A Multicriteria Approach and Application in a Private Portuguese Healthcare Providers

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ABSTRACT: With quality, outcomes and value the “buzzwords” for this century, healthcare stakeholders are slowly changing their approach in delivering healthcare, embracing the value-based healthcare (VBH) concept. VBH is a healthcare delivery model with the overarching goal of deliver value to patients [Porter (2009)]. This model is composed by six elements, among them measuring outcomes reported by patients per medical condition and over the full cycle of care. Like any other model, its implementation is gradual. Therefore, healthcare providers should aim for a smooth start with medical conditions for which a fair amount of good data is available and with clinicians that are willing to embrace the VBH model. As such, healthcare providers must prioritize medical conditions based on clear tangible criteria.

This master thesis was developed in collaboration with José de Mello Saúde and presents a multicriteria decision model developed in M-MACBETH, that can help healthcare providers in Portugal prioritize VBH strategies, i.e. deciding which is the next medical condition and respective hospital that should be covered by this VBH model. To test the model, the José de Mello Saúde case study is presented. This Portuguese private provider has been implementing VBH since 2015 in 5 medical conditions and 3 hospitals. However, the ultimate goal is to extend the model to all medical conditions and hospitals within the group, so it is important to define a clear structured strategy for the future capable to prioritize medical conditions and hospitals. Thereby, the model was able to rank 81 VBH strategies (pair: medical condition-hospital), based on 10 criteria defined in collaboration with the clinical board of José de Mello Saúde (the decision maker in this master thesis multicriteria decision model). From those, 19 were above the good reference level. Besides that, an exhaustive cost analysis was made regarding the cost of implementing the VBH model in each of those 81 (medical condition-hospital) pair. All results were subjected to sensitivity and robustness analysis, which reflected how consistent results were. From a future perspective the model should be able to cope with other medical conditions and other providers, under a revision of criteria to make sure that reflects as far as possible the reality of each provider.

KEYWORDS: Value- Based Healthcare, Multicriteria Decision Model, MACBETH, PROMs.

1. INTRODUCTION

For several decades, the world has been dealing with two tremendous problems in healthcare: The first one is the access to care - if patients don't have access to care, the healthcare system becomes fundamentally compromised. The second one, is more complex and is related to the definition of value in healthcare (Porter and Teisberg, 2006). Traditionally, value has been defined through clinical outcomes such as improving blood test parameters, system-level outcomes, such as reducing the level of non-attendance and demographic outcomes such as mortality rates. As a result, healthcare organizations are stuck in a fragmented and ineffective system, and unfortunately for far too long, they tried to improve the system by making some discrete and incremental strategies such as grow volumes, maintain margins and

contain costs. Therefore, the healthcare sector reached an unsustainable status from both quality and costs perspectives that can no longer face the demands of an ageing population with multiple comorbidities associated with unsustainable costs that OECD foresee for the next 30 years. Given such an alarming scenario, the pressure for a fundamental change is getting bigger, but as it was already mentioned, meaningful change has been limited. The reason why the world is facing these challenges is due to an incorrect definition of value that led stakeholders to measure the wrong outcomes and pursuit for the wrong goals (Porter and Teisberg, 2006). The real definition of value in health is translated by a simple equation: value equals to the outcomes achieved for patients relative to the money spent to achieve those outcomes, over a full cycle of care of a given medical condition.

Aligned with this definition of value, back in 2006 professors Michael Porter and Elizabeth Teisberg introduced the value-based healthcare (VBH) concept, which is expected to be a turning point in the healthcare history. VBH is a healthcare delivery model with the overarching goal of deliver value to patients – not access, cost containment, convenience or customer service (Porter, 2009). The value-based healthcare system is not a project anymore. There are several examples around the world where this value-agenda was successfully implemented. Santeon, a Dutch network of seven leading teaching hospitals started this VBH journey on 2015 and in just one year and a half, achieved outstanding outcomes: it reduced in nearly 30% unnecessary inpatient stays and in 74% the rate of reoperations due to complications in breast cancer patients, just by shifting the core of its strategy from meeting protocols and guidelines, to looking to what matters most for patients (Boston Consulting Group 2018 – How Dutch Hospitals Make Value-Based Health Care Work). According to Santeon's medical professionals, providers should be pragmatic and start smoothly with medical conditions for which quality standards are already defined. This process of prioritizing medical conditions should be based on clear criteria such as improvement potential or clinical team enthusiasm. In this sense, this master thesis wants to come through this drawback by developing a tool capable to help providers prioritizing VBH strategies. Given the problem nature, this tool needs to consider all relevant criteria that can impact the prioritization process. With that said, a multicriteria decision model based on the MACBETH method is proposed.

To test this model, a case study based on the clinical context of José de Mello Saúde (JMS) is presented.

1.1. Case Study – José de Mello Saúde

José de Mello Saúde is a Portuguese private corporate group of healthcare provision since 1945. Its activity is developed through a network of 7 CUF hospitals, 10 CUF outpatient clinics and 2 private-public hospitals, totalling 19 health units widely dispersed across Portugal. JMS is the biggest private healthcare provider in Portugal, that employ 8.058 people, and generate more that € 600 million in annual revenues. One of the clinical differentiating projects of JMS, is the value-based healthcare program launched in 2015. Since then, 5 medical conditions distributed by 3 CUF hospitals, were successfully covered by the program and are still running. However, the VBH program path started to be less clear when the clinical board was asked to define which VBH strategy JMS should follow next, i.e. which should be the next medical condition and corresponding CUF hospital covered by the VBH program. Therefore, this master thesis presents a tool capable to help the group prioritizing VBH strategies.

2. BACKGROUND CONCEPTS AND LITERATURE REVIEW

2.1. EUROPEAN HEALTH STATUS

According to the most recent OECD data, the scenario on health spending is similar among all EU countries: since 1970, health spending grew until a pick was reached during the financial crisis (around 2008-2010). Once health in Europe was being funded for ¾ from public sources, it was necessary to contain the spending in the sector. As a consequence, health spending fell and has been stabilized in the recent years, accounting for close to a tenth of total economic activity in 2017.

In Portugal the reality was no different. Health spending in Portugal represented 8.98% of the total GDP in 2017, which putted Portugal at the middle of the European scale, with France and Luxembourg the maximum and minimum extremes respectively.

However, OECD forecasts a growth in future healthcare expenditures and one of the main drivers is the fact that the world's population over 60 years will nearly double in the next 30 years.

With that said, monitor the ageing of populations through demographic indicators, became a primary concern. The ageing index is one of the most common demographic indicators used to relate the elderly and young populations. It is a ratio of the number of elderly people aged 65 and over, to the number of young people aged 0-14. Usually this indicator is expressed per 100 people aged under 15. Since 2001 there are more elderly people than young people in Portugal

In fact, the ageing index never stopped growing since 1961, and in 2016, Portugal was the third country in Europe with the highest ageing index of 148.7%, below Germany (158.7%) and Italy (163.4%). Unfortunately, according to the future projections of resident population of Instituto Nacional de Estatística published in March 2017, the demographic aging in Portugal will continue for the next 40 years. In detail, between 2016 and 2080 the number of young people will decrease from 1.5 to 0.9 million, while the number of elderlies will increase from 2.1 to 2.8 million, which together will more than double the ageing index from 148.7% to 317%.

Until now, Portugal has been centred on financial issues given the budget constraints. However, this only succeed as a short-term approach incapable to address the future health scenario of an ageing population with multiple morbidities, because minimizing costs was never the right goal. Increase value for patients is the ultimately goal in the healthcare sector (Porter and Teisberg, 2006). Until recently, healthcare stakeholders were not aware of the importance of measuring value, and the available metrics to do that were truly insufficient. Value was measured through clinical indicators such as percentage of surgical complications or non-programmed readmissions, and through process indicators that reflected the degree of agreement of clinical practices with guidelines. However, any of these 2 dimensions were able to evidence results

from the patient perspective. Therefore, professors Porter and Teisberg introduced a third dimension capable to reflect if care is being delivered with superior value or not from the patient perspective. In this way, information regarding patient outcomes adjusted for risk and cost of care started to be gathered and analysed.

2.2. VALUE-BASED HEALTH CARE CONCEPT

The value-based healthcare (VBH) concept emerged for the first time in 2004 with professors Michael Porter and Elizabeth Teisberg, in a Harvard Business Review article. According to Porter & Teisberg, “the way to transform health care is to realign competition with value for patients”, which lead them to redefine the value concept in health. Hence, value in health was defined as the health outcomes achieved that matter to patients, relative to the dollar of cost of achieving those outcomes (Figure 1). In this way, through a simple mathematical reflection, value can be improved by improving of one or more outcomes without raising costs and lowering costs without compromising outcomes.

With that, health policymakers all over the world realized there was almost no measures of outcomes reported by those who concern, i.e. patients and consequently, governments had only a partial view of how well their health systems were performing [OECD, 2017].

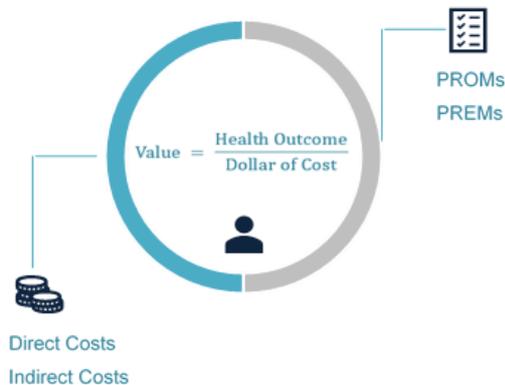


Figure 1: Health value equation

To identify the root of the problem of healthcare systems, Porter & Teisberg, 2006 defend that policymakers should look at how competition works in healthcare.

Competition in health has a unique nature that cannot be found in any other market. In every field competition improves value for the customer. That is what happen when people buy new phones with far more capabilities than their old ones by the same or lower price. In that way, if the quality of a product increases, innovation in the state of the art occurs, quality-adjusted prices fall, market expands, and more customers' needs are met. In turn, if market expands, choice expands too, and companies are forced to work towards differentiation among their competitors. As a result, best companies prosper while the worst ones go out of market.

In health the reality it totally different: by analogy, patients are the customers but here the delivered service (healthcare) is rewarded whether it delivers value for the patient or not, resulting in the so called “zero-sum competition” where a substandard healthcare quality is promoted. Therefore, Porter & Teisberg, 2006 proposed a “positive-sum competition” from which all healthcare stakeholders can benefit. If providers deliver high value healthcare services, patients will have better outcomes, health plans will achieve better outcomes and lower costs, clear information will be given to patients, coordinated care will be improved and high performing providers will be rewarded with more patients. This competition is a value-based one and is built around 8 principles (Figure 2).



Figure 2: Principles of Value-Based Competition

2.3. VBH DELIVERY SYSTEM – THE STRATEGIC AGENDA

To move from a zero-sum competition to a positive-sum competition, healthcare leaders need to restructure how healthcare delivery is organized, measured and reimbursed (Porter and Lee, 2013). It will be a full transformation process where providers, patients, health plans, employers, suppliers and policymakers will have to take action steps towards value improvement for patients. Hence, in 2006 professors Michael Porter and Elizabeth Teisberg proposed a strategic value agenda – a 6 step framework that every organization should follow to pursuit for this value transformation in healthcare (Figure 3).

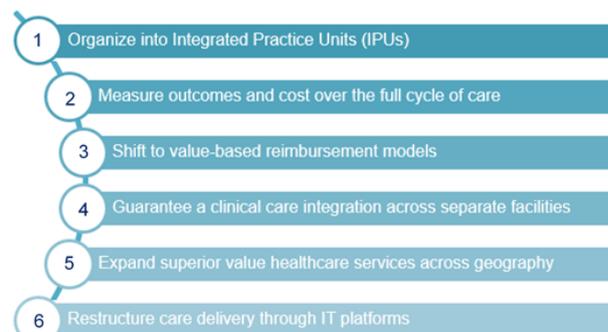


Figure 3: Value Based Health Care Strategic Agenda

2.4. COST MEASUREMENT OF QUALITY MEASUREMENT

Measuring the cost of measuring patient reported data includes measuring both fixed costs of implementing a measurement infrastructure and specific costs which can vary across each data measurement tool. Those costs can be start-up costs of learning to apply a given VBH strategy, ongoing costs of using it and processing data costs – homogenizing data from different sources, cleaning data for analysis, and packaging results from data analysis, for reporting.

Therefore, it should be clear that there is a missing link in the value agenda presented in the previous sub-chapter of this master thesis, that must be addressed, so providers can prioritize medical conditions to be covered by the value-agenda.

Aware of this information gap, José de Mello Saúde identified the need to have a solid tool capable to reflect all the relevant factors (including the cost of PROMs measurement), that should be considered to prioritizing value-based healthcare strategies across its CUF hospitals.

Therefore, a preliminary literature was conducted but no model was found capable to address this JMS need. However, from Santeon experience multiple criteria must be considered in prioritizing VBH strategies. More than that, many of these criteria are intangible, several interest groups are involved, and a consensus must be reached in which will be the next implemented VBH strategy. Given the complex nature of the problem, it is expected that the level of conflict between which criteria are relevant, and the level of conflict between stakeholders regarding the importance of each criterion are high. Therefore, prioritizing VBH strategies is a multiple criteria decision-making problem because the several courses of action for the VBH program in JMS requires balancing multiple criteria which can conflict to a substantial extent (Belton and Stewart, 2002).

2.5. MULTI-CRITERIA DECISION ANALYSIS IN HEALTHCARE

Through a strategy research on PubMed and Google Scholar data bases, one can easily find a significant volume of Multicriteria Decision Analysis (MCDA) applications. However, only 30% are in the healthcare sector. This can be explained by the fact that healthcare decisions are not trivial. In this sector, the available information is often imperfect and can motivate heuristic decisions. MCDA is a structured approach that tries to avoid non-informed decision making when there are multiple criteria involved.

All the same, selecting a MCDA method, by itself is a hard process given the amount of available MCDA methods.

Aware of this drawback, in May 2014, the International Society for Pharmacoeconomics and Outcomes Research

(ISPOR) Health Science Policy Council, established an Emerging Good Practices Task Force that outputted a common definition for MCDA in healthcare decision making, and practice guidelines for conducting a MCDA technique in the healthcare sector.

According to the 1st report of the ISPOR MCDA Emerging Good Practices Task Force published in 2016, MCDA is defined as follows: “methods that help deliberative discussions using explicitly criteria, but without quantitative modelling”. From this definition it should be explicit that MCDA don’t make decisions for the decision maker. It only helps the decision maker to make decisions. One should also notice that the absence of quantitative modelling is a “doubled-edged sword”, i.e it allows the inclusion of relevant factors that otherwise would not be included, such as the intangible ones, but at the same time is highly sensitive to the decision maker (DM) preferences and stakeholders’ judgements. This means that a MCDA can be a really hard process if more than one DM and several stakeholders are involved, once their preferences will naturally conflict. With that said, it is clear that a formal process shall be built to avoid that the legitimacy of decision makers and stakeholders come into question.

3. METHODOLOGICAL APPROACH

3.1. MULTI-CRITERIA DECISION ANALYSIS OVERVIEW

As it was already defined, MCDA is an umbrella term to describe a collection of formal approaches that can help with decisions that matter, i.e. decisions with substantial consequences, that have a long-term impact and affect many people. (Belton and Stewart, 2002).

Axel C. Mddouhlbacher et al. (2015), says MCDA approaches can be broadly divided into multi-objective decision making (MODM) when the decision space is continuous, and multi-attribute decision making (MADM) if the decision space is discrete. In turn, MODM and MADM can be sub-divided into 3 MCDA models: value measurement models, outranking models, and reference-level models. The main differences between these models are presented below:

Value measurement models: Numerical scores are built to express how much an option may be preferred to another. Involves a partial score for each criterion that is after integrated into a global score. In such models, a bad score for one criterion is compensated for by a good score on another. Alessio Ishizaka and Philippe Nemery (2013).

Outranking models: Alternative courses of action are compared pairwise. Options are compared two-by-two through a preference degree. The compensable scores logic does not apply, and it is possible to have two options with the same score but with different behaviour and therefore incomparable. Alessio Ishizaka and Philippe Nemery (2013).

Reference-level models: Satisfactory levels of achievement are established for each criterion. Are mostly used when no subjective inputs are required. A reference-

level is predefined for each criterion and then the closest options to the reference level are identified. Alessio Ishizaka and Philippe Nemery (2013).

3.2. MACBETH METHODOLOGY

MACBETH stands for Measuring Attractiveness by a Categorical Based Evaluation Technique and is highly differentiating for its ability to measure the attractiveness of options through only qualitative judgements, that give rise, by linear mathematical programming, to numerical scores for the options in each criterion and to weights to each criterion (Carlos A. Bana e Costa et al. 2015). MACBETH is a value measurement model that shapes this master thesis model and has 4 main phases: context, structuring, evaluating and recommending.

3.3. PROPOSED METHODOLOGY

MACBETH is a socio-technical approach because it has not only of technical elements, but also social aspects. With that said, the proposed methodology in this master thesis, presents a socio-technical design capable to reflect both the social and technical decisions involved (Figure 4). The social component is responsible for engage all the key players during the modelling process. According to L.Philips and C.Bana e Costa, "(...) socio-technical process improves communication (...), develops shared understanding (...) and generates a sense of common purpose (...)". Hence, questions such as "Who?", "When?" and "How?" shape the social element of a MCDA. This component is materialized in decision conferences, which are moments that gather together all key players who are assisted by an impartial facilitator responsible for conducting the discussing process, for developing a model and for exploring the outputs of it, without contributing to the content of discussions. (Lawrence D.Philips, 2006).



Figure 4: Elements of the Socio-Technical Design of any MCD model

To be aligned with the good practice guidelines for conducting a MCDA model to aid healthcare decision making, all the recommendations established by ISPOR in

2014 on MCDA Emerging Good Practices Task Force, were highly considered.

Hence, the socio-technical methodology used to address this master thesis challenge is represented in Figure 5.

The proposed methodology starts with the identification of the model inputs, namely the problem context, the screening criteria, the options to be considered and the relevant available data to be included. All those inputs were gathered in a raw state, during exploratory interviews with stakeholders. During this process, the problem was contextualized under the decision maker point of view and under JMS inner features. In this sense it was set that some data would be uncertain for confidential reasons, that only CUF hospitals should be considered, and only data from July 2017 to June 2018 would be available. Combining this information with some literature review, a value measurement model based on the MACBETH method was developed to support the decision problem.

3.4. PROBLEM CONTEXT

Betting on a culture of clinical excellence, José de Mello Saúde constituted in 2015 in collaboration with the International Consortium for Health Outcomes Measurement (ICHOM), the "Value-Based Healthcare Program". This program is focused on delivering patient-centred healthcare by considering not only the traditional clinic health indicators but also the patient reported outcomes since time zero, when the patient is admitted in a CUF hospital, up to 5 years after the patient is discharged. As it was mention in Chapter 1, back in 2015 when the program was designed, the clinical board of JMS identified 13 medical conditions with high potential to be pilots of the program: [REDACTED]

[REDACTED]. Furthermore, only [REDACTED] CUF hospitals were considered by the program: [REDACTED]. Therefore, adding the [REDACTED] CUF hospitals, the [REDACTED] medical conditions and the fact that not all CUF hospitals treat all [REDACTED] medical conditions, the decision maker (advisory clinical board) faced the challenge of ranking 81 VBH strategies (Table 4.1).

3.5. STRUCTURING – SELECTING AND STRUCTURING CRITERIA

When all process participants were comfortable with the decision problem definition, several decision conferences with the project manager and the non-clinical health director had place in the head office of JMS in order to explore which were the relevant criteria that should be included in the model. In the first iteration, 15 criteria were selected to be integrated in the model. However, a deepest

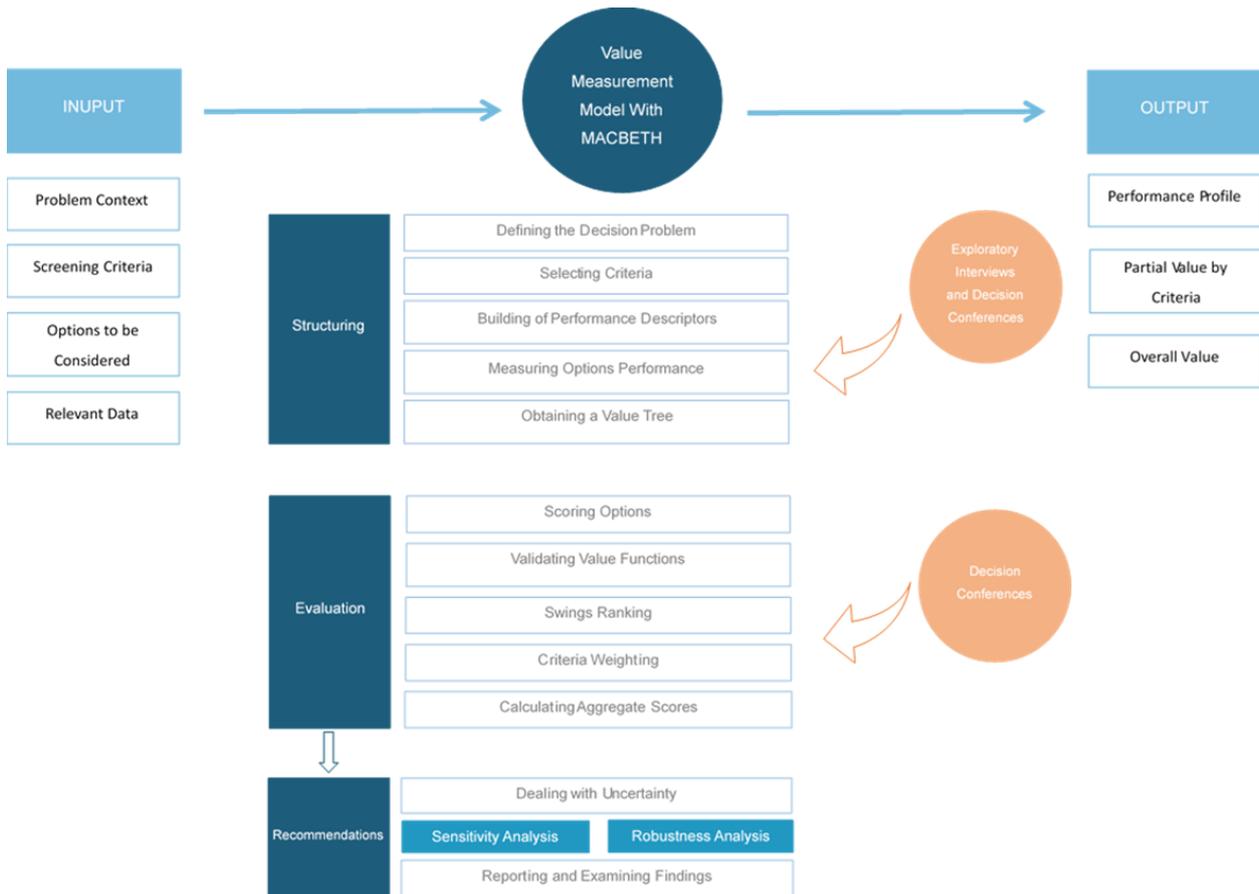


Figure 5: Proposed Methodology Overview

analysis lead to the screening of 4 criteria since some of them were redundant and others were interdependent. Also, 1 criterion was defined as a screening criterion - during the decision conferences, it became clear that the VBH program was not approved whenever the clinical team was not committed to engage with the VBH program. Hence, the level of clinical engagement was defined as a screening criterion.

Therefore, the 81 VBH strategies were appraised against 10 criteria (Figure 6), (highlighted in red) and 7 non-criteria nodes (highlighted in grey) clustered in 2 concern areas: implementation and monitorization drivers of the VBH program (A1), and implementation and monitorization costs of the VBH program (A2) (Figure 6).

To be operational, each criterion must be fully described, and performance descriptors with plausible impact levels must be selected. It was assumed that all performance levels attributed to any descriptor should follow a logic of best plausible impact level, good and neutral reference levels and worst plausible impact level.

When all criteria were properly defined and described, the participants of the decision conferences, adopted a top-down model-structuring strategy that led to the following value – tree (Figure 6).

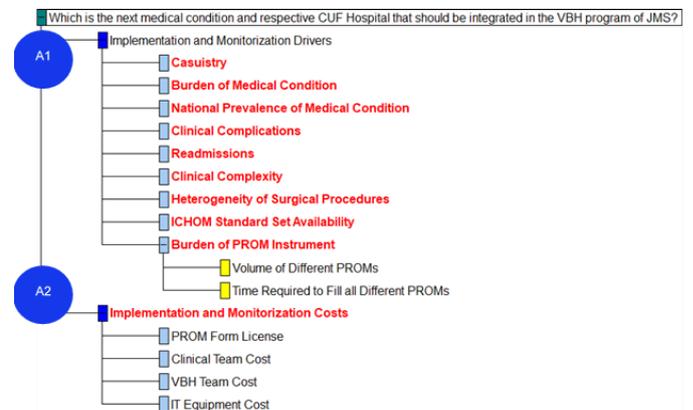


Figure 6: Value-Tree

3.6. EVALUATING – SCORING OPTIONS

In the evaluation phase of MACBETH, the qualitative judgments were collected and inserted in the judgment's matrix of M-MACBETH software. Once there were no inconsistencies, MACBETH presented value scales to decision makers for validation. Hence, decision makers were adjusted when needed, within the allowed limits and the final value functions were obtained.

Although all value matrixes and respective value functions were analysed the “Case-by-case” criterion value function is analysed in detail in this chapter because of its interesting S curve behaviour.

The “Case-by-case” criterion is a quantitative, direct and continuous criterion and for that reason the scale is represented in a plot (Figure 7). In MACBETH, value functions are piecewise functions once the difference in attractiveness between two consecutive levels may be distinct from the difference in attractiveness between two other consecutive levels. That is precisely what happens with “Case-by-case” criterion: It is more attractive to pass from a volume of 75 JMS clients to a volume of 125 JMS clients, than to pass from 25 JMS clients to 75 JMS clients. As a result, the value function acquires an S-shaped curve with a concave behaviour (when the volume is increased up to 75 JMS clients) and a convex behaviour (when the volume is increased up to 175 JMS clients). According to stakeholders, moving from 25 to 75 JMS clients is an unsatisfactory improvement because 75 JMS clients is a neutral number of JMS clients. On the other hand, moving from 125 to 175 JMS clients is almost as attractive as moving from 25 to 75 JMS clients because when the good reference level is achieved, the increasing attractiveness impact is lower.

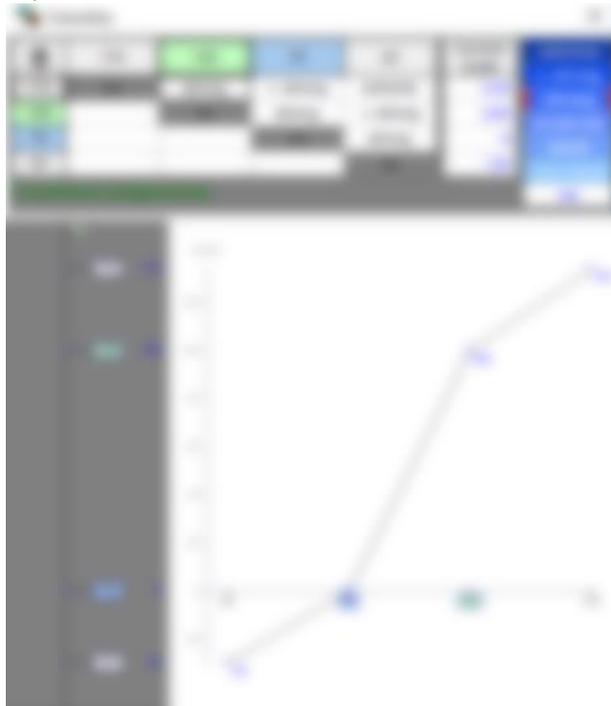


Figure 7: Case-by-case Value Function

3.7. EVALUATING – WEIGHTING CRITERIA

The weighting criteria step attributes a scale coefficient to each criterion according to its contribution in the calculation of each option’s overall score.

The weighting procedure used in this master thesis is the so-called swing weighting procedure that involves 2 steps:

1- Ranking swings neutral-to-good by decreasing order of preference – During decision conferences, stakeholders were asked to consider all criteria in the neutral performance level i.e levels with a zero score. Then, questions a and b were posed to stakeholders until all criteria were covered:

a. “If it was possible to choose one and only one criterion to go from a neutral performance (zero score) to a good performance (100 score), which one would you select?”

b. “Excluding the chosen criterion, which criteria would you choose now to go from a neutral performance (zero score) to a good performance (100 score)?”

It is important to mention that it was explained to stakeholders that they should ask those questions by looking at the attractiveness of improvement and not to criteria per se, to avoid the most common critical mistake of decision making (Bana e Costa, 2012).

Hence, the rank of swings by decreasing order of preference, obtained during decision conferences revealed “Case-by-case” at the top and “ICHOM Standard Set Availability” at the bottom of the rank.

2- Qualitatively judging differences of overall attractiveness – criteria weights are also obtained through qualitative judgments access by pairwise comparison of the swings. Once this weighting matrix is complete, weights are automatically assigned to criteria by the software, but stakeholders can adjust the weights within certain limits consistent with the weighting matrix. In this sense, the already validated weights of each criteria are presented in Figure 8.

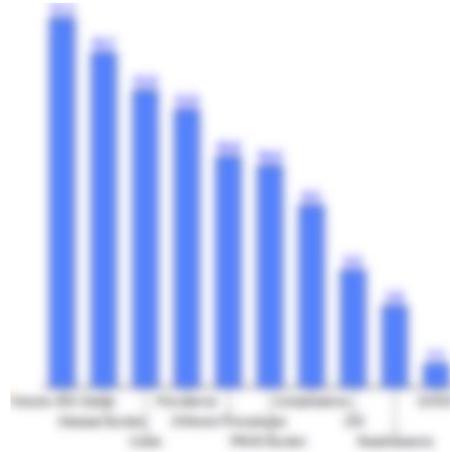


Figure 8: Criteria Weights

4. RESULTS AND DISCUSSION

Being the model built, the M-MACBETH software displays the table of global scores of each VBH strategy.

According to the final results, JMS must first include in its VBH program the following 19 VBH strategies: coronary artery disease in HCIS and HCP, pregnancy and childbirth in HCD, low back pain and varicose veins in all hospitals where these conditions are treated, breast cancer in HCD, obesity in HCP and colorectal cancer in HCIS and HCP.

Comparing these results with the past decisions made by JMS, it turns out that the decision maker past decision is highly misaligned with the model results – from the 19 strategies with a global score above 100 outputted by the model, only 3 were coincident with the first group of VBH strategies covered by the VBH program of JMS, i.e. breast cancer in HCD, low back pain in HCIS and coronary artery disease in HCIS. Apart from these 3 strategies, JMS had also selected knee osteoarthritis in HCD, cataracts in HCIS and breast cancer in HCIS that appear between the good and the neutral levels, and finally cataracts in HCD and HCC that fall below the neutral level in the score table. When confronted with these results, the decision maker explained that at the time the market was really focused in hip and knee osteoarthritis and cataracts medical conditions. In fact, the ICHOM global outcomes benchmarking program had just launched two pilot benchmarking programs for these 2 medical conditions and by October 2016, 25 providers were participating in the hip and knee osteoarthritis pilot and 55 in cataracts, including JMS. Furthermore, OECD revealed in 2017 that PROMs have been more commonly used to measure the outcomes of patients following elective surgeries, particularly knee and hip replacement and cataracts surgeries. OECD explained this is due to the nature of these medical conditions that do not present as many challenges in survey design and implementation comparing to chronic or long-term medical conditions. As such, the decision maker was not surprised with these misaligned results.

It is also interesting to look just to the CUF hospitals associated to the 19 first strategies. With low back pain and varicose veins as exceptions, all strategies are linked to the 3 biggest CUF hospitals – HCIS, HCD and HCP, which in turn are the hospitals with the higher volume of JMS clients. This reality is coherent with the past decisions of JMS, once all VBH strategies were linked to HCIS and HCD. Here the pair “CAT-HCC” deserved more attention once HCC is considered a medium dimension CUF hospital. When asked, the decision maker explained that the priority was to move to HCP, however the HCP cataracts team, was not engaged with the VBH program.

5. CONCLUSIONS AND FUTURE WORK

Through this master thesis it should be clear that health systems need better information regarding the value of its healthcare services. Historically, value has been measured by means of clinical, process and demographic indicators incapable to assess outcomes from the perspective of those most concerned – patients and their families. However, this reality has been changing, and nowadays healthcare providers, José de Mello Saúde included, are using PROMs to measure value. Although an effort is being made to fully implement the value-agenda, most providers are stuck in the first steps. This master thesis identifies two main missing steps that can be at the origin of such difficulties to move forward in the implementation of the value-agenda:

- Providers must prioritize the VBH strategies based on clear criteria. They should begin with conditions that have clear improvement potential.

- The cost of quality measurement must be included in the cost element of the value equation.

Therefore, a multi-criteria decision model was developed to address these missing steps, helping providers to prioritize VBH strategies and to know the real value of their delivered services. This model was built in the context of the JMS case study, but it can be applied to any other provider. From the results obtained in the previous chapter, the model was able to rank the 81 VBH strategies of JMS, based on 10 criteria, which allowed JMS to review the all VBH program and to redesign the future of the program. As an example, it became clear that pregnancy & childbirth, colorectal cancer and breast cancer are the most expensive medical conditions to be integrated into VBH program, and that lung cancer PROMs have the higher burden. From this model, it is expected that JMS can easily collect and share transparent, high-quality outcome data, reduce unjustifiable variations in clinical practice, change the behaviours within the CUF network and ultimately enhance value.

From a future perspective, JMS should build a safe learning environment and keep up the pace toward transparency, in order to generate enthusiasm for the VBH approach and cover as many medical conditions as possible. In the future, JMS will need to prioritize other VBH strategies, and the model should be able to cope with that. However, the clinical board must review the model to make sure that it stays up-to-date.

Furthermore, this VBH strategies prioritization problem can evolve to a portfolio problem where a limited budget exists and must be respected.

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