

Assessing the VALUE in Cardiac Surgery with a Multi-Stakeholder Perspective: The Italian Cardiac Surgery VALUE Framework

Assessing the VALUE in Cardiac Surgery with a Multi-Stakeholder Perspective: The Italian Cardiac Surgery VALUE Framework

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Background

In recent years, the shift of the conceptual paradigm guiding decisions in healthcare provided by recognition that the demand for health care services is growing faster than the overall economic framework is becoming a challenge and focus in defining and implementing (Petrakis, Arnesen and Callea, 2020). Considerable attention has been directed towards value and in this field it is important to define what value means (Evans and Mitchell, 2015). Technological advances played a major role in

Aims and goals

This work contributes to the ongoing debate on the value of cardiac and oncology care programs in multidimensional value frameworks identifying the relevant dimensions of value for cardiac surgery with the final aim to propose a set of indicators for the assessment of cardiac surgery performance, supporting continuous learning through success case studies.

The framework brings a multi-stakeholder perspective on the value of cardiac surgery by using investigators, involving non-physician caregivers, but also patients, caregivers, administrators, hospital managers, patients' representatives, academic and the

Methods

We applied a case study methodology based on a set of methods used in qualitative research to discuss and find a consensus on the relevant dimensions of value, with progressive involvement of stakeholders' categories.

Results

Five dimensions of value were identified (Figure 1)

Discussion

This is the first value framework specifically designed for cardiac surgery. It is characterized by a multi-stakeholder perspective. One of the wide spectrum of stakeholders involved in the project through the utilization of a composite methodology aimed to ensure the highest possible level of robustness.

The framework aims to value the health care (as it considers a higher number of clinical outcomes, resources) used of cardiac surgeons professional assessment in practice (as it considers also non-clinical dimensions). Moreover, the framework pays a great attention to the assessment of safety outcomes.

References

Schlesinger S, Petrakis S, Wilson P, et al (2021) Pre-operative physical performance as a predictor of in-hospital outcomes in older patients undergoing elective cardiac surgery. *European Journal of Internal Medicine*, 122:121.

Petrakis S, Arnesen P, Callea G. A Value-Based Revolution in Health Care: Perspectives, Challenges, and Emerging Approaches in Defining and Measuring the Value of Health Care Technologies. *Class' (Thompson)*, 45(1): 11-14.

Evans R, Mitchell R (2015) *Value-Based Healthcare: The New Paradigm for Improving Patient Outcomes*. London: Sage.

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BACKGROUND

In recent years, the shift of the conceptual paradigm guiding decisions in healthcare generated by recognition that the demand for health care services is growing faster than the overall economy fostered a flourishing debate on how to define and how to measure it (Federici, Armeni and Callea, 2020).

Cardiovascular is among the most innovative sectors and is the first therapeutic device area for sales volume (EvaluateMedTech, 2018). Technological innovation played a major role in advancing the field of cardiothoracic surgery. Recently, several cardiac surgeons pointed out the need to measure quality of care in cardiac surgery and changes in performance over time and with respect to other providers to maintain and improve the quality itself (Coulson et al, 2017) and to allow a fair distribution of health care resources to all members of the society. Shapira (2014). To the purpose of encourage improvement of clinical outcomes through benchmarking, professional associations established collaborative registries in the USA (e.g., the Society of Thoracic Surgeons (STS) Adult Cardiac Surgery Database) and Europe (e.g., the European Association of Cardio-Thoracic Surgery (EACTS) Quality Improvement Programme Adult Cardiac Database). In Italy, the public National Outcome Program (Programma Nazionale Esiti PNE) routinely monitors volumes and mortality at 30 days after Coronary Artery Bypass Graft (CABG) and heart valve replacement.

AIMS AND GOALS

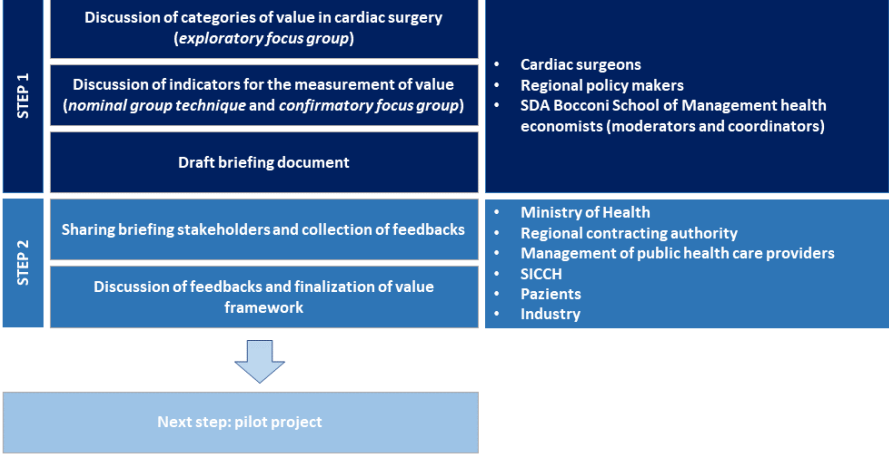
This work contributes to the ongoing debate on the value of medical technologies and proposes a multidimensional value framework identifying the relevant dimensions of value for cardiac surgery with the final aim to propose a set of indicators for the measurement of cardiac surgery performance, supporting continuous benchmarking across time and centers.

The framework brings a multi-stakeholder perspective on the value of cardiac surgery life-saving technologies, involving not only cardiac surgeons, but also policymakers, contracting authorities, hospital managers, patients' representatives, academia, and the industry.

The proposed value framework will provide with a detailed picture of the Italian cardiac surgeries in terms of characteristics and regional regulatory framework, level of innovativeness (in terms of attitude towards standard, mini- and micro-invasive approaches), outputs and outcomes provided to the patients, and resources spent.

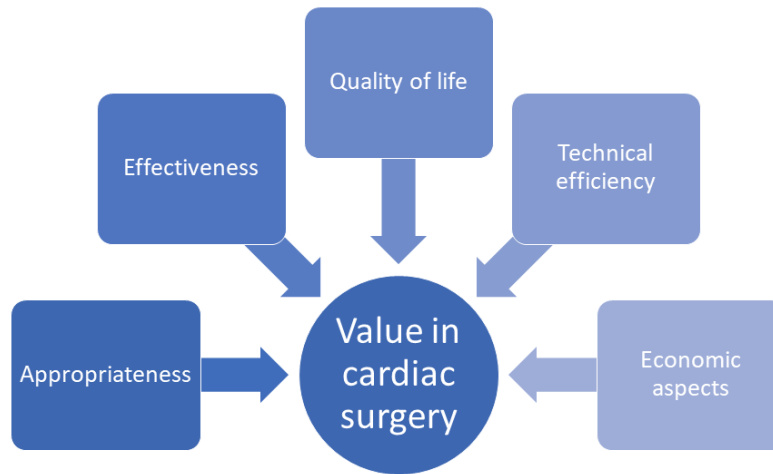
METHODS

We applied a composite methodology based on a mix of methods used in qualitative research to discuss and find a consensus on the relevant dimensions of value, with progressive involvement of stakeholders' categories.

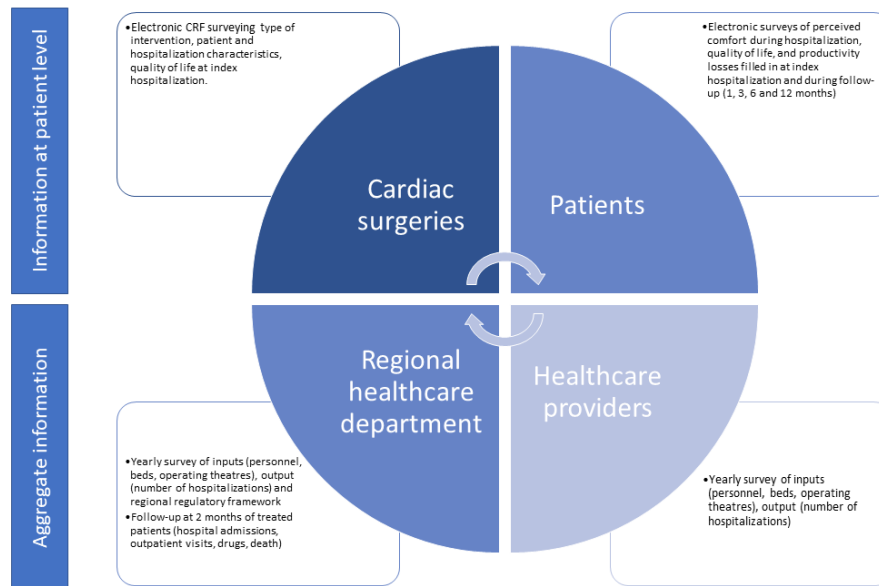


RESULTS

Five dimensions of value were identified (Figure 1).



The framework is fed by multiple stakeholders (Figure 2).



Several quantitative measures were defined within each dimension together with the set of information (i.e., data on inputs, outputs, outcomes and costs) necessary to calculate the indicators. The final output is a multidimensional key performance measures dashboard aimed to allow a benchmarking across hospitals and areas, supporting evidence-based decisions regarding resource allocation (Figure 3).

Appropriateness	
Adherence to clinical guidelines	<ul style="list-style-type: none"> • % of patients treated according to international and national clinical guidelines • % of patients evaluated by heart team • % of patients aged 70+ with geriatric evaluation • % of hospitalizations without surgical intervention • % of urgent hospitalizations with surgical intervention within 24 hours from admission • % of patients referred to hospital-based cardiac rehabilitation within 24 hours from admission • % of patients referred to home-based cardiac rehabilitation within 24 hours from admission • % of hospitalizations with adverse events
Activity	<ul style="list-style-type: none"> • % of SAVR over TAVI • % of PCI over CABG

Effectiveness	
Clinical effectiveness (short- and medium-term clinical endpoints)	<ul style="list-style-type: none"> • Mortality rate (during index hospitalization, after 30 and 90 days) • Complication rate (during index hospitalization, after 30 and 90 days) • Readmission rate at 30 and 60 days • Reopening rate • Reoperation rate for same clinical condition

Quality of life	
Frailty and cardiovascular risk	<ul style="list-style-type: none"> • SPPB • STS score • EUROSCORE • 6 Minute Walking test pre- e post-intervento • Seattle Angina Questionnaire (for CABG)
Subjective health-related QoL	<ul style="list-style-type: none"> • Average utilities calculate through generic HRQoL scales (EQ-5D-6L and SF-36) at index hospitalization and after 1, 3 6, and 12 months • % of HRQoL questionnaires gathered on total number of treated patients per year
Subjective non-health-related QoL	<ul style="list-style-type: none"> • Patient and relatives' customer satisfaction (e.g., perceived comfort, personnel courtesy, time requested for hospitalization) • Length of waiting list • Supply of psychological support to patients
Objective QoL	<ul style="list-style-type: none"> • Productivity losses • % of patients returned to work after 1, 3 6, and 12 months from the intervention

Technical efficiency	
(Hospital level)	<ul style="list-style-type: none"> • Average number of interventions per center per year by approach (standard, mini-, and micro-invasive) • Number of interventions per unit of personnel • Number of interventions per operating room • Average length of stay (total, pre-operative, post-operative) by type of intervention and approach • Average number of days of stay per unit of personnel by type of intervention and approach • Average duration of intervention • Average number of cardiac surgery beds per million population • Average number of cardiac rehabilitation beds per million population • Average number of operating room opening days per unit of personnel • Average number of operating room opening hours per unit of personnel • Average waiting time in emergency department • Average waiting list (for elective interventions)

Economic aspects	
(Hospital level)	<ul style="list-style-type: none"> • Average expenditure for medical devices per intervention • % of patients from other regions • % of hospitalizations not covered by the NHS (i.e., paid by the patients) • % of not self-sufficient patients

DISCUSSION

This is the first value framework specifically designed for cardiothoracic surgery. It is characterized by a multistakeholder perspective, fruit of the wide spectrum of stakeholders involved the project through the adoption of a composite methodology, aimed to ensure the highest possible level of inclusiveness.

The framework scope is wider than both the PNE (as it considers a higher number of clinical outcomes measures) and of cardiac surgeons professional associations registries (as it considers also non-clinical dimensions). Moreover, the framework poses a great attention on the assessment of elderly patients frailty (Baldessaroni et al, 2021).

The results will be shared with the Italian Society for Cardiac Surgery, hospital managers and national and regional policy makers to identify best practices and strategies to obtain higher levels efficiency, support considerations regarding the value generated by cardiac surgeries and an evidence-based allocation of resources.

REFERENCES

Baldessaroni S., Pratesi A., Stefano P., et al (2021) Pre-operative physical performance as a predictor of in-hospital outcomes in older patients undergoing elective cardiac surgery. *European Journal of Internal Medicine*, 84:80-87.

Federici C., Armeni P, Callea G., A Value-based Revolution in Health Care: Perspectives, Challenges, and Emerging Approaches to Defining and Measuring the Value of Health Care Technologies, *Clinical Therapeutics*, 42(1), 11-14.

DISCLOSURES

CONFLICTS OF INTEREST: The authors have no conflicts of interest to declare

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ABSTRACT

OBJECTIVES : The sharp increase in healthcare costs in recent years has stimulated a flourishing debate on value and how to measure it. Numerous value frameworks for medical technologies were proposed. The aim of this work was to develop the first framework for cardiac surgery, proposing a set of performance measurement indicators. **METHODS**: To achieve this goal, a composite methodology based on a mix of methods used in qualitative research (exploratory focus group, nominal group technique and confirmatory focus group) was applied to discuss and find a consensus on the relevant dimensions of value of cardiac surgery life-saving technologies. In order to bring a multi-stakeholder perspective, the discussion involved an expert panel of all the relevant stakeholders, including cardiac surgeons, policymakers, hospital managers, patients and their representatives, contracting authorities, academia, and the industry. **RESULTS**: Five dimensions of value were identified: appropriateness, effectiveness, quality of life, technical efficiency, and economic aspects. Several key performance indicators were defined within each dimension together with the set of information (i.e., data on inputs, outputs, outcomes and costs) and the level of detail (i.e., patient, ward, hospital, region) necessary to calculate the indicators. The final output is a multidimensional key performance measures dashboard aimed to allow a benchmarking across hospitals and areas, supporting evidence-based decisions regarding resource allocation. **CONCLUSIONS**: Thanks to the implementation of the framework, the policymakers will get a clear picture of cardiac surgeries output, level of innovativeness, resources dedicated to care and patient outcomes. Discussion of the results will allow to identify best practices to converge and support continuous benchmarking across time and centres.