


VIEWPOINT

Quality of Highly Complex Care in Cardiology

Aurora Issa 

Instituto Nacional de Cardiologia, Rio de Janeiro, RJ – Brazil

Factors like the high costs of currently available technologies, the work overload of health professionals, and population aging and consequent increase of chronic diseases have highlighted the need for special attention to the quality of health care provided, especially in high-complexity cardiovascular care.¹

Although there are several definitions of health-related quality, the present analysis is grounded in the concept that aspects like efficiency, or effectiveness, are associated with the safety of care provided, which in turn is closely related to patient centrality and protection of their rights.

When the concept of quality is discussed, structural or physical factors, including material, financial and human resources, assessment tools, education and research activities, clinical protocols, and process approaches should be addressed. Process approach is a method to plan activities and processes performed by health providers who are directly involved in patient care, that can lead to (desirable or undesirable) changes in individual or population health.²

The exhaustive search for reliable processes in health care has yielded remarkable achievements such as elimination of waste, undesirable waiting, unnecessary pain, and preventable death. One example is the “Enhanced Recovery After Surgery” (ERAS), a multimodal perioperative care pathway, already validated in cardiac surgeries.³ The ERAS refers to a multidisciplinary, patient-centered, evidence-based approach aimed to optimize patients’ physiologic function in the preoperative period, leading to

improved patient outcomes and satisfaction, and reduced hospital stay, postoperative complications, and hospital costs.

In the Brazilian public health system, “highly complex” procedures are those involving technology and high costs, aiming at providing access to high-quality services that should be integrated to other levels of complexity (low and moderate complexity). The National Policy of Cardiovascular Care, launched in 2014 and updated in 2018, regulates the criteria for the habilitation of health care units and referral centers involved in the highly complex care of cardiovascular diseases.^{4,5} These health care units should provide technical conditions, physical facilities, equipment, and human resources and promote a close interaction and integration with the local and regional system. Procedures performed in these centers include adult and pediatric cardiovascular surgeries, interventional procedures, vascular, endovascular and extracardiac surgeries, and electrophysiological analyses. These units should also offer outpatient cardiovascular care, emergency care, preoperative and postoperative follow-up, laboratory tests and cardiovascular prevention measures.

The concern about the quality of care provided by institutions where cardiac surgery is performed has to do with the fact that surgical mortality rates were shown to vary across them.⁶

Indeed, the continuous analysis of mortality is crucial in the search for excellence. Mortality committee and surgical mortality meetings may help in this regard. The number and frequency of deaths, patient gender, action plans for potential failures of the processes, and the level of complexity of the cases should be analyzed. Many publications have reported the need for adjusting the risk to mortality found in cardiac intensive care units and during the postoperative period in children

Keywords

Cardiovascular Diseases: Hospitals, Special; Hospitals, Chronic Diseases/trends; Quality of Health Care/trends; Staff Committee

Mailing Address: Aurora Issa

Instituto Nacional de Cardiologia. Rua das Laranjeiras, 374, Rio de Janeiro - Brazil
Postal code: 22240-006
E-mail: auroraissa@gmail.com

and adults post-cardiac surgery.⁷⁻⁹ In addition, the length of stay in the hospital and intensive care unit of patients undergoing highly complex procedures should be continuously analyzed.

The Health Technology Assessment (HTA) aims to produce knowledge about the basis for health care, potentiate the synthesis of evidence, and test suggested or required knowledge for health system planning, to ultimately improve all dimensions of quality in care, including disease prevention. A greater participation of the HTA in the implementation and use of technologies in health would reduce inequity in health care, optimize resource allocation, and improve effectiveness and quality of services and financial sustainability of the system.¹⁰ Considering the high costs of cardiac procedures, the benefits of HTA are unquestionable.

However, it is worth to mention that measuring is essential, but not sufficient. After data are collected, they should be analyzed and an action plan for their improvement and implementation should be developed. In this regard, predictive models with computerized solutions, aimed at making improvements in patient care, are currently available.¹¹

National databases are usually difficult to be generated in most countries, but there are exceptions, notably Denmark, in which analysis of specific diseases has been successfully performed through nationwide databases. Consolidated in the country for more than 40 years, the Danish Breast Cancer Group (DBCG) was the first to create a clinical database with the purpose of research. The Danish Lung Cancer Registry (DLCR) was the first database primarily focused on the quality of care. The Danish Heart Registry (DHR) is a national database for collecting medical and administrative data on patients referred for invasive cardiovascular procedures and cardiac surgeries and is used for analytical and planning purposes in health care quality and reimbursement of institutions.^{12,13}

The Society of Thoracic Surgeons Adult Cardiac Surgery Database (STS ACSD) is another example of nationwide registry that has an important impact on cardiovascular care. The STS ACSD also allowed the development of a score that has been widely used and continuously updated, for the assessment of mortality among patients undergoing cardiac surgery.¹⁴

In Brazil, despite the dissemination of private and public centers where highly complex cardiac procedures are performed, there is an evident lack of large databases of data related to these procedures. Besides, some of

the available data are clearly underused, including the authorization for hospital admission that can provide valuable information on the diagnosis of cardiovascular diseases.¹⁵ There is also an undervaluation of data obtained from currently available registries.

In this brief analysis of highly complex care in cardiology, we conclude that:

- High-quality care not only gives the patient the best opportunity to achieve the results they seek, but also avoid inefficiency and waste;
- Improvement of quality and safety of care is challenging and has long term results, requiring the involvement of all members of the organization;
- Assessment is essential but not sufficient. Solving the problems detected requires action;
- An effective interaction between research, care, and management translates into better quality;
- Adequate registries of data are still scarce;
- Implementation of HTA is essential not only for the evaluation but also for the achievement of better results.

Author contributions

Conception and design of the research: Aurora Felice Castro Issa. Acquisition of data: Aurora Felice Castro Issa. Analysis and interpretation of the data: Aurora Felice Castro Issa. Writing of the manuscript: Aurora Felice Castro Issa. Critical revision of the manuscript for intellectual content: Aurora Felice Castro Issa.

Potential Conflict of Interest

No potential conflict of interest relevant to this article was reported.

Sources of Funding

There were no external funding sources for this study.

Study Association

This study is not associated with any thesis or dissertation work.

Ethics approval and consent to participate

This article does not contain any studies with human participants or animals performed by any of the authors.

References

1. Fisher Elliott S, Shortell Stephen M. Accountable care organizations: accountable for what, to whom, and how. *JAMA*. 2010 Oct 20;304(15):1715-6. DOI: 10.1001/jama.2010.1513
2. Donabedian A. *The Definition of Quality and Approaches to Its Assessment*. Michigan: Health Administration Press; Ann Arbor;1980. 163 p.
3. Brown JK, Singh K, Dumitru R, Chan E, Min PK. The Benefits of Enhanced Recovery After Surgery Programs and Their Application in Cardiothoracic Surgery. *Methodist Debaquey Cardiovasc J*. 2018;14(2):77-88. doi: 10.14797/mdcj-14-2-77.
4. Brasil. Ministério da Saúde. PORTARIA Nº 1169/GM Em 15 de junho de 2004; Instituir a Política Nacional de Atenção Cardiovascular por meio das redes estaduais e regionais de atenção de alta complexidade em território nacional. https://bvsms.saude.gov.br/bvs/publicações/portaria_ac.htm
5. Brasil. Ministério da Saúde. PORTARIA Nº 1.846, DE 21 DE NOVEMBRO 2018; atualizacritérios para habilitação de hospitais como centros de referência em alta complexidade cardiovascular no âmbito do Sistema Único de Saúde. http://bvsms.saude.gov.br/bvs/saudelegis/sas/2018/prt1846_10_12_2018.html
6. Huckman RS, Pisano GS. The Firm Specificity of Individual Performance: Evidence from Cardiac Surgery. *Management Science* [Internet]. 2006 [cited 2021 Feb 16];52(4):473-488. Available from: <http://www.jstor.org/stable/20110527>
7. Jacobs JP, Mavroudis C, Lewis JM, Bohdan M, Tchewenkov CI, Lacour-Gayet FG, et al. What is operative mortality? Defining death in a surgical registry database: a report of the STS Congenital Database Taskforce and the Joint EACTS-STG Congenital Database Committee. *Ann Thorac Surg*. 2006;81(5):1937-41. doi: 10.1016/j.athoracsur.2005.11.063.
8. Goldfarb M. Risk-adjusted overall mortality as a quality measure in the cardiovascular intensive care unit. *Cardiol Rev*. 2018;26(6):302-6. doi: 10.1097/CRD.0000000000000200.
9. Issa AF, Bassan F, Monassa FJP, Pereira VM, Paco PM, Barros GR, Mota CB, et al. Variáveis associadas com a opção terapêutica no tratamento a doença arterial coronariana crônica. In: 33 Congresso de Cardiologia da SOCERJ, 2016 Rio de Janeiro. *Int J Cardiovasc Sci*.2016;29(suppl A):43-6.
10. Novaes HM, Soárez PC. Health technology assessment (HTA) organizations: dimensions of the institutional and political framework. *Cad Saúde Pública* 2016;32(Suppl 2):e00022315. doi: 10.1590/0102-311X00022315.
11. Graham MM, James M, Spertus JÁ. Decision Support Tools: Realizing the Potential to Improve Quality of Care. *Can J Cardiol*. 2018;34:821-6. doi: 10.1016/j.cjca.2018.02.029.
12. Özcan C, Juel K, Lassen JF, Von Kappelgaard LM, Mortensen PE, Gislason G. The Danish Heart Registry. *Clin Epidemiol*. 2016 Oct 25;8:503-8. doi: 10.1016/j.cjca.2018.02.029
13. Danish Heart Registry [Internet]. 2020 [cited 2021 Feb 17]. Disponível em: <https://www.danishhealthdata.com/find-health-data/Dansk-Hjerteregister>
14. Thourani VH, Badhwar V, Shahian DM, Edwards FH, O'Brien S, Habib RH. The Society of Thoracic Surgeons Adult Cardiac Surgery Database: 2017 Update on Research. *Ann Thorac Surg*. 2017;104:22-8. doi: 10.1016/j.athoracsur.2017.05.013.
15. Escosteguy CC, Portela MC, Medronho RA, Vasconcellos MTL. O Sistema de Informações Hospitalares e a assistência ao infarto agudo do miocárdio. *Rev Saude Publica*. 2002;36(4):491-9. doi: 10.1590/s0034-89102002000400016.

