Evaluation of quality of care is a duty of the modern medical practice. A reliable method of quality evaluation able to compare fairly institutions and inform a patient and his family of the potential risk of a procedure is clearly needed. Two articles published in this journal present their conclusions based on a similar method.

As stated by D. Boethig et al. in their discussion: “Risk adjustment is difficult and dangerous.” Difficult, because congenital heart surgery (CHS) deals with approximately 200 diagnoses and 150 procedures; combining in outcome analyses hundreds of different factors. Dangerous, because the publication of potential unfair or biased outcome evaluations upon the medical community could severely harm the reputation of an institution, when decupled by our global media.

Despite its limitations, the RACHS-1 method deserves the credit of being one of the first attempts at producing risk-adjusted outcomes in congenital heart surgery. Several biases, partially outlined in the two articles, are indeed observed in the methodology: the absence of a quantifiable method which defines the six groups, the short time (three afternoons) spent to construct the scoring system, and the impossibility of scoring associated procedures. Additionally, it is noticeable that RACHS-1 gives the same grade to procedures with potentially very different risk, omits major procedures, does not list specific procedures and is unable to score associated procedures. The same may hold true for many factors. Taking a broader view by considering complexity factors makes comparison simpler. The complexity score allows a better orientation of a given patient to the proper institution; which is finally the daily task of many pediatric cardiologists and insurance companies.

Comparing institutions requires a common nomenclature. This is now available following the considerable work done by the International Nomenclature Committee of the STS and EACTS [2]. The short lists of diagnoses and procedures form a simple and quite comprehensive nomenclature currently utilized by the congenital databases of the STS and EACTS [3,4]. The AEPC nomenclature is now linked to the STS–EACTS International Nomenclature [5]. Every effort should be made to unify these two languages.

Complexity is a new concept defined as the sum of mortality, morbidity and technical difficulty. The complexity factors are different from the risk factors. When dealing with the need of comparing all centers, not only the best ones, risk factors are insufficient, partial and labile. A risk factor like intramural coronary complicating an arterial switch can be controlled in an experienced center and not in another one, the same may hold true for many factors. Taking a broader view by considering complexity factors makes comparison simpler. The centers controlling a given complexity factor will simply perform at a different level than a center that does not. Finally, this approach allows defining different types of performance that should coexist in a given geographical area. All regions need to have access to safe basic pediatric cardiac surgery and also, to an optimal institution [6] to treat the most complex cases. The complexity score allows a better orientation of a given patient to the proper institution; which is finally the daily task of many pediatric cardiologists and insurance companies.

The verification of the data sent to the congenital databases is under investigation both at the STS and the EACTS. A recent publication from J.L. Gibbs et al. in the British Medical Journal [7], reporting the results from the national congenital database of the United Kingdom, shows that “Volunteered survival data are of little value, sometimes overestimating survival as much as 20%…,42 of the 194 deaths within 30 days were detected by central tracking but were not in the volunteered data”. This observation is stunning and very much in favor of independently verifying data in congenital databases.
Dealing with quality control requires time, work and attention to details in evaluating outcomes. Expert mathematicians cannot replace experienced clinicians when defining a case mix. Surgical practice is different from medicine because the performance of a given surgical technique has individual variations. Having been given the opportunity to comment on the RACHS-1 system and after expressing some doubts, it can be suggested that the initial method could be improved in a new version. (Those readers who the ‘RACHS-1’ phonetic reminds of music and of Rachmaninov, may agree that the ‘Rach.2’ piano concerto is the most accomplished.)

References


F. Lacour-Gayet*  
Department of Cardio-Thoracic Surgery,  
Denver Children’s Hospital, University of Colorado,  
1056 East 19th Avenue, Denver, CO 80262, USA

* Tel.: +1-303-8616624; fax: +1-303-7648022.  
E-mail address: lacour-gayet.francois@tchden.org