The future of cardiac surgery: find opportunity in change!†

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Received 17 April 2012; received in revised form 27 July 2012; accepted 9 August 2012

Keywords: Education • History • Professional affairs • Minimally invasive surgery

Many cardiac surgeons are worried about their current position and importance, and even more about how they will evolve in the coming years. The development of endovascular techniques is considerably changing patient care and will most probably continue to expand as patients express their preference for less-invasive interventions. As a result, cardiac surgery has already dramatically changed, as reflected by the dramatic reduction in open surgical bypass cases. Change is happening, but change will not necessarily imply a negative future. In fact, it is quite the opposite. Cardiac surgeons are ready and willing to Find Opportunity in Change.

Change is nothing new to cardiac surgery. Since its inception, cardiac surgery has faced resistance and required adaptation. It took a lot of pioneers, a lot of leadership and inspiration, for cardiac surgery to become what it is today, a critical part of patient care. For several decades, cardiac surgeons have actually been able to adapt to new technologies, to embrace innovation and drive change. Times are different, but the direction is the same: the ability to change will continue to determine cardiac surgery’s future.

It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change —Charles Darwin.

Looking ahead, several irreversible trends will transform cardiac surgery in the years to come. And in many ways, it started a few years ago. The most obvious one is the development of minimally invasive therapies. Patients and their families prefer less-invasive techniques, as they offer a smaller incision and scar, lower risk of infection, less bleeding, less trauma, a potentially decreased hospital stay and a quicker return to normal activities. To embrace these new treatment options, cardiac surgeons have to be ready to acquire wiring skills and master catheter-based techniques, not as a replacement, but as a complement to their skill sets.

As a consequence, and this is the second noticeable trend, the emergence of ‘Heart Teams’ is profoundly transforming patient diagnoses, treatment and aftercare follow-up. Cardiac surgery, and most of the other medical practices, will not be performed in isolation of the others in the future. Taking into account the patient care pathway, as well as the need for improved efficiency in most of the health economic systems in Europe, will continue to demand a team approach to the patient’s diagnosis and treatment. Staff regrouping within several specialties, including cardiac surgery, will provide the best of several worlds to patients in a cost-effective way. The surgeon of the future may well be a hybrid physician, maybe the merging of a surgical interventionist and an interventional surgeon, but certainly he/she will be different and will have to acquire new skills - like their predecessors did.

However, the patient population is also changing simultaneously. Patients entering the operating rooms are now much older and sicker. Therefore, the complexity of cases has dramatically increased for some, if not most of them. Not all patients will be candidates for catheter-based techniques, and a significant number of them will actually require multiple interventions. The same rationale applies to minimally invasive and endovascular techniques; the ability to perform concomitant procedures for these patients will not only improve the outcomes but also the cost-efficiency of cardiac surgery over other options.

In summary, there will always be a role for cardiac surgeons. There are multiple indications, like concomitant valve replacement or aortic root replacement that will invariably be operated on surgically. However, surgeons should also embrace percutaneous techniques like transarterial aortic valve implantation, and later on, transcatheter mitral valve replacement. Being the only ones able to do both, they will be a unique asset for the heart teams.

SEIZE SIMPLICITY!

Cardiac surgeons’ greatest value is not only in their technical skills but is also found in their ability to make precise decisions. This is by far the greatest contribution the surgeons can make to their heart teams. However, in a world that is becoming increasingly more complex and where change accelerates, surgeons must seize simplicity to make those decisions.

While industry has a role to play in continuing to invest in innovation, it will also be critical to focus on simplifying the
product-selection process, with specific designs that help surgeons consider the variety of patient indications and anatomies they see every day.

The ‘one size fits all’ approach would not make the life of surgeons easier, nor would it support their judgment. That approach would force them to adapt to devices rather than to have devices adapting to patient specificity.

Simplicity is needed for the multitude of decisions surgeons have to make. Adoption of peer-reviewed guidelines and homogeneity of techniques are a guarantee to perform a homogenous service to the patient population and provide payers with more certainty on the cost efficacy of the delivered treatment. The strategic intent to agree on best practices, shared by the whole surgical community, will make cardiac surgeons a stronger and more focused community that more rapidly adapts to change as a group, rather than an aggregation of multiple and heterogeneous practices, techniques, beliefs and experiences.

The role of scientific societies like European Association for Cardio-Thoracic Surgery that facilitate discussion around the creation and communication of evidence-based guidelines will become more critical than ever. Surgical educational programmes and training should then also reflect these guidelines.

Guidelines also have to be widely communicated, beyond the cardiac surgeons to general cardiologists, and must be enforced in the heart team’s decision-making process. However, this will only happen when and if they are in the first instance widely adopted by cardiac surgeons themselves. Once that process is in place, the treatment of patients will be simpler and more effective and will assist all clinicians in finding opportunity in change.

Fortunately, cardiac surgeons are ready for change. In a recent survey (Stealing Share, Cardiac surgery survey for Medtronic, November 2012) of 215 cardiac surgeons in the USA, Canada and Europe, a vast majority of 99% of surgeons confirmed that they must stay vigilant to recognize change. Another 97% recognized that their success depends on their ability to stay abreast.

There are many technological and scientific innovations on the horizon for cardiac surgeons. Better surgical valves with improved haemodynamics and durability will come, some even sutureless. Recapturability of transcatheter valves is around the corner. New percutaneous mitral valve repair and replacement techniques are being developed. But also, significant improvement of ventricular assist devices, miniaturized systems and better batteries, will dramatically change the field of transplant. And there are many other examples.

Like their great predecessors, cardiac surgeons can adapt to their evolving environment. Their future is in their hands if they adopt innovation, acquire complementary skill sets, seize simplicity and comply with peer-de fined scientific guidelines. As it did in the past, cardiac surgery will evolve, and for this reason, cardiac surgeons can Find Opportunity in Change!

Conflict of interest: none declared.