

On the left or on the right... side of the table. Where do you stand?

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Abstract

Being able to perform surgery first-hand represents the backbone of every training program and the key to successful development of the new generation of skilful surgeons. In this issue of the Journal, Comanici et al. presented a thorough systematic summary of the current evidence on the outcomes of cardiothoracic operations performed by trainees.¹ Taking for granted the importance of training young surgeons, it is paramount to identify and tackle any potential obstacles hindering the surgical growth of a trainee.

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Being able to perform surgery first-hand represents the backbone of every training program and the key to successful development of the new generation of skilful surgeons. In this issue of the Journal, Comanici et al. presented a thorough systematic summary of the current evidence on the outcomes of cardiothoracic operations performed by trainees.¹

Taking for granted the importance of training young surgeons, it is paramount to identify and tackle any potential obstacles hindering the surgical growth of a trainee.

Firstly, there is an ever-growing scrutiny on the performance of each surgeon with publicly available reports on mortality and morbidity.² In the United Kingdom, public reporting was systematically implemented by the Society for Cardio-Thoracic Surgery in 2004 following the Bristol enquiry.^{3,4} The benefits of public reporting are well-recognized and includes improved transparency, higher accountability of healthcare providers and informed patient's choice. However, downsides should also be acknowledged. Trainees may be direct innocent victims of public reporting due to the tendency of surgeons to safeguard their publicly scrutinized outcomes. Under the erroneous assumption that trainee-led cases can lead to worse outcomes, surgeons may be hesitant to allow trainees to perform the operation as first operators. This does not only reduce the absolute number of cases performed by trainees but also limits surgical exposure to only selected less complex procedures. Reports such as the one of Comanici et al. are pivotal to provide compelling evidence that trainee cases are not likely to negatively impact surgeons' outcomes.

Secondly, the cohort of patients presenting for surgery is continuously evolving and changing. Patients are now older, with a greater burden of comorbidities and more advanced disease.⁵ Traditionally, a trainee case is described as a low-risk case in which there is ample space for education and supervision, however, sticking to this paradigm would sharply reduce the number of eligible patients for trainees given the increasing higher risk surgical population. However, surgeons should not be discouraged to let trainee operate first-hand also on high risk profile patients. There are previous reports that focused on this issue and showed that regardless of the increased risk of nowadays patients trainee cases have similar favourable outcome than when performed by trainers and patients welfare is still preserved and prioritized.^{1,6,7} Extension of training to complex operations also facilitates the always challenging transition from trainee to consultant position.

Thirdly, there is a subjective variability within surgeons when it comes down to teaching regardless of the complexity of the patients. Surgeons can have a different level of comfort in letting a trainee perform the surgery and this can clearly reduce the opportunities for trainees working with less self-confident surgeons. Also, training is an educative experience above all and as such it should be acknowledged that some surgeons may be more willing to teach or better at it than others. Identifying these educational skills and rewarding them in their professional career could help improve the quality and quantity of training.

Another source of heterogeneity is related to how much a surgeon feels the trainee needs to perform during the operation. This is clearly reflected in the diverging definitions of a "trainee case" in published reports. It would appear logical that the ideal definition is a skin-to-skin operation, however, this does not always match the educational needs of a trainee. Training should be based on a skill-oriented program which progressively exposes the trainee to the surgical steps (e.g., sternotomy, proximal than distal anastomosis of coronary grafts) of each procedure until all the pieces are dexterously performed and can be put together to perform the whole procedure. Therefore, this definition should be approached pragmatically considering that a skin-to-skin procedure can be suitable for senior trainees, whereas smaller surgical bits more appropriate for junior trainees.

Finally, a new problem is providing exposure to technique like minimal access and robotic cardiothoracic surgery. The limits here are even more impeding. These techniques and particularly robotic platforms and expertise are not readily available in every cardiac unit, and the volume of procedures is much lesser than conventional surgery. These factors create a "training gap" difficult to fill. Simulation curricula can in part fill this gap by means of wet labs and virtual reality simulators which have been shown to provide proficient expertise level.⁸ Considering the potentiality of minimal access and robotic surgery in the future, surgical programs should start to consider the implementation of means to train the surgeons of tomorrow in these ever-evolving technologies.

Concluding, there is a substantial body of evidence in the literature and well-summarized by Comanici et al. that support the safety of surgical training. This should eradicate any remaining reluctance towards trainee-led cases. Today's well-trained doctors will be tomorrow's good surgeons, trainers and guarantor of

patient welfare.

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