100% foolproof in limiting treatment or identifying patients who will benefit most. As such, we are at a time in urological history where we continue to over treat... but it is acceptable when done in a minimally invasive manner. And although it does cost a bit, it only hurts a little.

Conflict of Interest
None declared.

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Comparative assessment of three standardized robotic surgery training methods

All training adds value. A craft-based specialty such as surgery has always recognised this. The advent of advanced minimally invasive surgical technology and techniques has provided both new challenges and new opportunities for surgical performance and for the delivery of training. Conceptually, we have moved from the Halstedian model of ‘See one, do one, teach one’ [1] to an environment where skills are acquired away from the operating room in simulator, inanimate and in vivo (animal) laboratory training sessions. Increased scrutiny of credentialling and medico-legal aspects of robotic surgery have reinforced the importance of training and have led to a number of papers outlining pathways to facilitate this [2,3].

In the present paper, Hung et al. evaluate the construct validity of three standardised training methods (inanimate, simulator and in vivo) and also compare the three different platforms for cross-method training value. As others have shown, the latest generation of robotic surgery simulators have high face, content and construct validity [4,5] and the present paper confirms the value of both inanimate and simulator training for novice surgeons. In addition, the authors confirmed the construct validity of a simple in vivo exercise using the daVinci® surgical system by demonstrating that experts outperformed novices. Using Spearman’s rank correlation coefficient, the authors compared the three training methods under evaluation and concluded that they were strongly correlated for construct validity between exert and novice surgeons. While construct validation of these exercises may be established, are they useful for experts? Until realistic virtual reality surgical simulations are available, only a novice, an inexperienced or an occasional robot-assisted surgeon may benefit from virtual reality exercises.

What are we therefore to conclude from this? For certain, the advent of excellent surgical simulators and structured inanimate exercises has provided tools for novice surgeons to acquire console skills in a safe and structured environment. This will enhance their operating performance and reduce aspects of the learning curve such as operating time; however, the lack of availability of in vivo training opportunities greatly limits the applicability of this method of surgical training. In many countries (including Australia and the UK), this type of training is illegal or not available. The robotic surgery industry has strongly recommended that in vivo training should be undertaken in one of their official training facilities before surgeons are given the credentials to use this technology; however, even in the USA where most of these facilities are located, key leaders within the AUA have called for the awarding of credentials for robotic surgery ‘not to be an industry driven process, but one that is a result of a standardized, competency based, peer evaluation system’ [2]. Notably, the current AUA Standard Operating Practices (guidelines) for the awarding of credentials for robotic surgery list in vivo training as being optional.

Our view is that although all training has value, there is not enough evidence that in vivo training (particularly on an animal with a rudimentary prostate), which requires international travel and considerable expense, adds sufficient value to be mandatory in any credentialling process. In fact, we have dropped the requirement to complete in vivo training from our requirements at major robotic surgery centres in

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Australia in favour of structured Mini-Fellowship training [6]. Hung et al. have confirmed what we already knew, which is that all training adds value; however it is likely that only simulator and inanimate training adds enough value to be incorporated into standardised training in robotic surgery.

The multi-disciplinary ‘Fundamentals of Robotic Surgery’ (FRS) curriculum being created by Dr Richard Satava and associates is working on psychomotor skills tasks that include inanimate models as well as corresponding virtual reality exercises. Multi-institutional validation of the FRS or similar curricula will allow the establishment of training milestones and proficiency benchmarks. We must continue to strive for further development of robotic and surgical simulation to change the training paradigm so that surgical training does not need to be at the expense, however minor, of increased operating time or adverse patient outcome.

**Conflict of Interest**

None declared.

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