



Evolution of technologies in urology: full steam ahead?

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As we move forward in urology there can be no denying that advances have come in many shapes and forms, particularly in the past decade or so: robotic-assisted laparoscopic surgery, digital formats including histopathology and imaging, 3-D printing, interventional radiological techniques, single-use flexible pyeloscopy, mini-percutaneous nephrolithotomy, new biomaterials, positron emission tomography computed tomography (PET-CT) relevant in prostate cancer to name a few [1–11]. These are all advances that have been embraced with great enthusiasm and are discussed in this topic issue.

However, how do we introduce, and train for these new technologies? [4, 12]. Perhaps, more importantly, how are they funded and are they cost effective? A prime example would be prostate-specific membrane antigen PSMA PET-CT and its use in prostate cancer where many consider that the cart had been placed “before the horse” [1]. The same critique of robotic-assisted laparoscopic surgery which has even greater implications on training has also been criticised [3]. Both technological advances are explored in detail in this issue including PSMA for imaging and in the operating room as well as robotics in territory well outside North America and the promise finally of some competition.

With any technology the first issue is training and accreditation as key elements discussed in this issue [4] and the ethics of introduction of new technology on the public—should they be afforded the respect of a trial or simply be swept along and accept that urologists will be ethical in their approaches?

Of course not all jurisdictions are encumbered by cost restrictions but many are—so what is the real value of new technologies and are the advances (if any truly at all) worth it even if they can be funded? The opposite is also true that

if we fail to advance then over time our ability to investigate and treat conditions will plateau.

Hence, we need to evaluate each innovation in great detail. This topic issue helps to broach some of the issues alluded to above. At the same time we must also acknowledge tensions with other specialties such as should embolisation of prostatic arteries be undertaken by radiologists untrained in the subtleties of benign prostatic hyperplasia [8]. All issues are worthy of thought and consideration.

We should also acknowledge that this issue is also strongly represented and supported by members of the Société Internationale d’Urologie (SIU) Young Innovators Committee. The SIU has been instrumental in allowing the discussion, development and dissemination of innovation as a key platform for the organisation and is to be congratulated in this regard. The SIU Academy, annual congress and other initiatives will again be available to all as well as topic issues such as this one supported by the World Journal of Urology.

In summary, many may consider urologists innovators and “early adopters” of technology. However, this approach comes at a cost and thought needs to be given to data driving such technology, how we can train for skill acquisition and maintenance but importantly consider costs and the ability to maintain innovations which is far easier in some health systems. To a certain degree it is “full steam ahead” but even trains must stop to refuel and change drivers—something that is beginning to be understood and explored in this current supplement.

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