

Bolstering the surgical response to COVID-19: how virtual technology will save lives and safeguard surgical practice

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The authors of 'COVID-19 and urology: a comprehensive review of the literature' have written a perceptive article which clearly outlines the complex challenges that COVID-19 is posing to urological surgeons and, indeed, the global surgical community at large [1].

As described in the article, COVID-19 is already having a profound impact on the way in which urological surgeons provide care and allocate resources. Non-urgent procedures are being postponed indefinitely as bed space and intensive care facilities typically dedicated to surgical patients are re-allocated to those with COVID-19. Multi-disciplinary teams are facing seemingly unimaginable decisions with regard to the provision of care for oncology and transplant patients. Moreover, the risk of COVID-19 to surgeons themselves further compounds the plight of an already over-stretched health service and is likely to result in increased clinician 'burnout'. Consequently, surgeons on the frontline will be increasingly required to operate in unfamiliar environments and with new teams.

There is little doubt that the complexities posed by COVID-19 are unprecedented and require a robust response from the international surgical community.

Virtual technology solutions, such as the Proximie platform, can form the basis of a responsive approach to the surgical challenges posed by the pandemic. As one of the first specialties to adopt robotic technology, urological surgeons are ideally suited to lead the widespread implementation of teleproctoring and telementoring technology in everyday surgical practice.

By remotely connecting surgeons in a live environment, such technologies can enable surgeons in isolation to amplify their expertise and provide invaluable support to colleagues on the frontline, including trainees who may be required to perform procedures without direct supervision. As the platform can be accessed via laptop, tablet or phone, the technology can also help reduce the spread of infection to vulnerable patients, such as those who have undergone transplant surgery, by

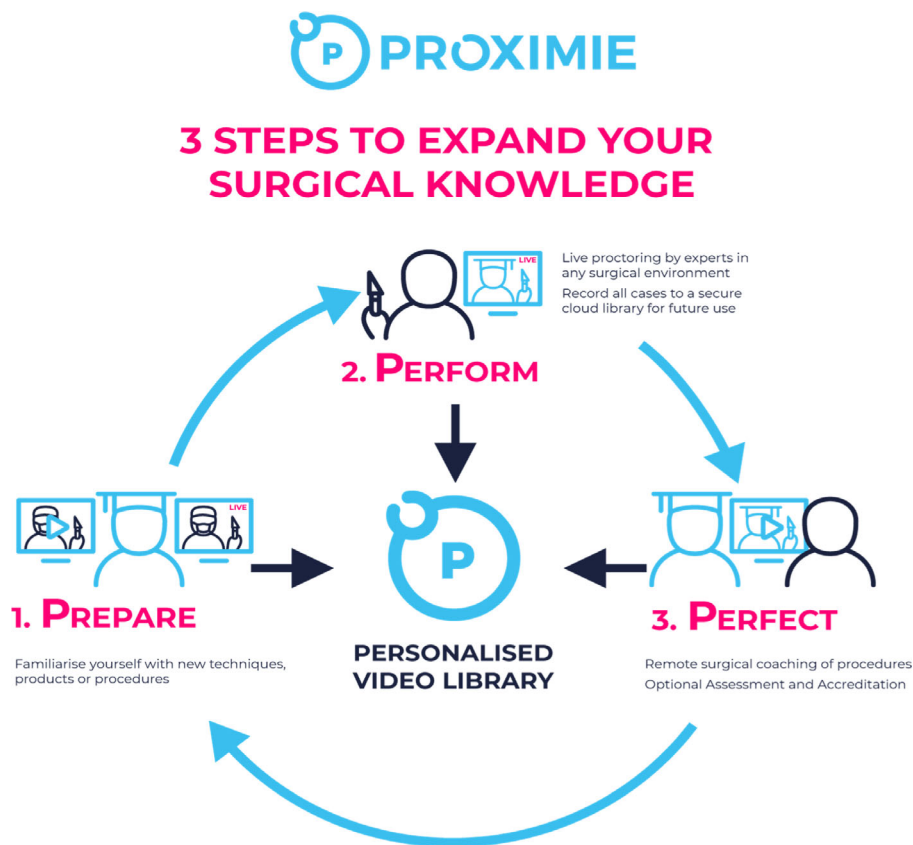
limiting the number of individuals who are required to be physically present in a clinical or procedural environment. Proximie's augmented reality telehealth solution can additionally be used to support multi-disciplinary meetings for oncology and transplant patients. The platform's unique surgical library is an effective means of monitoring wound healing and can provide useful information prior to revision or 'second-look' surgeries; particularly at a time when turnover of surgical teams is expected to be high as a result of self-isolation and re-deployment measures [2].

Whilst management of the acute phase of the pandemic is daunting for global healthcare systems, challenges will inevitably endure for months and perhaps even years following its conclusion. Health systems will need to increase capacity to provide for the numerous patients who were unable to undergo elective and semi-elective procedures during the pandemic. Surgeons will require support to re-engage with performing routine procedures after a period of de-skilling.

Virtually interactive, telesurgical and telementoring platforms will be instrumental in helping to address these longer-term concerns by providing a safe environment for surgical coaching for clinicians who may require support when returning to active service. Using the Proximie interface, surgeons can both remotely access live procedures by expert surgeons and also use the tool to record their own surgeries and review video of their performance with a mentor. Proximie's 3-P system (please refer to Fig. 1) also provides a framework for surgeons to re-engage with performing routine procedures. For example, a trainee who is becoming re-acquainted with performing radical robot-assisted prostatectomy surgery can review the procedure in Proximie's video library, perform surgery with remote guidance from a senior clinician and subsequently review video of their performance at a later date with a mentor.

The COVID-19 pandemic is testing the urological and greater surgical community in a unique way. Global healthcare systems must use innovation to adapt to meet these challenges. Virtual

Fig. 1 The Proximie 3-P system: Prepare, Perform, Perfect.



technology provides surgeons with the ability to share solutions and help save lives, now and in the future.

Conflict of Interest

Dr Karim is the Head of Research at Proximie. This is a full-time paid position and she receives personal fees from Proximie. Proximie is an independent company that receives funding from personal investors and grants. Dr Hachach-Haram is the Founder and CEO of Proximie. Prof. Dasgupta is the Chief Scientific Officer at Proximie (Honorary) and the Editor of the *BJUI*.

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