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Virtual reality: Keyhole surgeons training could help meet European working time directives

Trainee surgeons who add virtual reality (VR) training to standard 'apprenticeship' training in key-hole surgery learn more quickly, work with greater accuracy and have less errors than those with no VR training, and perform as well as those who use additional video training. The finding of this Cochrane Systematic Review is important because training surgeons is time-consuming and costly, and surgeons have to develop new skills while working within the hour-limits set by European legislation.

More and more abdominal surgery is now performed using laparoscopes – instruments introduced into the patient's body through small incisions in the skin. This means that surgeons experienced in conventional surgery need to train with the new equipment, as well as newly qualified doctors who are at the beginning of their surgical careers.

The Royal College of Surgeons runs training courses that let a surgeon see what a procedure involves. With the arrival of desktop computing that has high graphic capability, software developers have built programs that enable the trainee to interact with the images. "This greater level of involvement gives the possibility that surgeons will be able to develop skills more rapidly," said Kurinchi Gurusamy, who works at the University Department of Surgery at the Royal Free Hospital, London.

To assess the impact of VR training, Gurusamy and colleagues searched for published research studies that compared VR training with other methods of training. They then undertook a detailed analysis of all the randomised trials that addressed this issue. There were 23 trials in total involving a total of 612 participants. The data clearly demonstrated the benefits of VR training.

"If we are going to meet the requirements of the European Working Time Directive, which effectively decreases the time available for training surgeons, as well as the Department of

Health's modernising medical careers initiative, we need to develop highly efficient means of teaching new surgical skills. Virtual reality techniques may fulfil that need," said Kurinchi.

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