



The Cochrane Library ... the best single source of reliable evidence about the effects of health care

Strictly Embargoed until 00:01 hours (GMT), 21st January 2009

This cluster focuses on two reviews of medical technology publishing next week in [The Cochrane Library](#), 2009, Issue 1, and highlights some of the key health care conclusions and their implications for practice.

Media wishing to receive a full copy of the reviews highlighted in this newsletter, or to arrange an interview with an author, may contact Jennifer Beal on +44 (0)1243 770633 / +44 (0) 7802 468863 or by email, wbnewseurope@wiley.com.

Reviews highlighted in this newsletter:

- [**Robo-Surgery: As Safe and Capable as a Human Assistant in Key-Hole Gallbladder Removal**](#)
Using a robotic assistant to remove a patient's gallbladder by key-hole surgery (laparoscopic cholecystectomy) is as safe as working with a human assistant, a Cochrane Review has concluded.
- [**Virtual Reality – Cutting Edge 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.

Robo-Surgery: As Safe and Capable as a Human Assistant in Key-Hole Gallbladder Removal

Using a robotic assistant to remove a patient's gallbladder by key-hole surgery (laparoscopic cholecystectomy) is as safe as working with a human assistant, a Cochrane Review has concluded. Comparisons between robot- and human-assisted surgery showed that there were no differences in terms of morbidity, the need to switch to open surgery, total operating time, or length of stay in hospital.

Between 10 and 15% of the adult western population develop gallstones, placing a huge demand on health services. In the USA alone, more than 500,000 people have their gall bladder removed each year. The preferred way of doing this is now to use keyhole surgery that involves a surgeon and an assistant. In key-hole surgery, the surgeon sees inside the patient via a long camera introduced through a 1 cm abdominal cut. The camera guides the surgeon in using the surgical instruments

introduced through other small cuts (ranging from 0.5 to 1 cm). The assistant's job is to move the camera, which acts as the surgeon's eyes.

A range of robots can now perform this task: this study looked at trials involving 'Endoassist', 'Aesop', 'Passist' and 'Zeus'.

To assess how well robots were performing, a team of researchers considered data from five randomised trials that included a total of 453 patients. The results showed a marginal (though not statistical) decrease in the numbers of gallbladders that burst during robot-assisted surgery, but overall there was no appreciable difference.

"We need more trials that see whether the success rates using robotic assistants increase once surgeons have more experience using them," said lead researcher Kurinchi Gurusamy, who works at the University Department of Surgery at the Royal Free Hospital, London.

One of the aims behind using robots is that it could enable a surgeon to perform an emergency operation without having to wait for a human assistant to become available. This could have distinct advantages in countries where there are limits to the numbers of hours assistants are allowed to work.

Current data suggest that we are not yet at that point. "Robotic assistants seem to be an exciting possibility, but we are not yet at the stage that they should be used as replacements for human assistants," says Gurusamy.

Full citation: Gurusamy KS, Samraj K, Fusai G, Davidson BR. Robot assistant for laparoscopic cholecystectomy. Cochrane Database of Systematic Reviews 2009, Issue 1. Art. No.: CD006578. DOI: 10.1002/14651858.CD006578.pub2.

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Virtual Reality – Cutting Edge 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.

Full citation: Gurusamy KS, Aggarwal R, Palanivelu L, Davidson BR. Virtual reality training for surgical trainees in laparoscopic surgery. *Cochrane Database of Systematic Reviews* 2009, Issue 1. Art. No.: CD6575. DOI: 10.1002/14651858.CD006575.pub2.

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Notes for editors

1. The Cochrane Library contains high quality health care information, including Systematic Reviews from The Cochrane Collaboration. These Reviews bring together research on the effects of health care and are considered the gold standard for determining the relative effectiveness of different interventions. The Cochrane Collaboration (<http://www.cochrane.org>) is a UK registered international charity and the world's leading producer of systematic Reviews. It has been demonstrated that Cochrane Systematic Reviews are of comparable or better quality and are updated more often than the Reviews published in print journals^a.
2. The Cochrane Library can be accessed at <http://www.thecochranelibrary.com>. Guest users may access abstracts for all Reviews in the database, and members of the media may request full access to the contents of the Library. For further information, see contact details below.

A number of countries have national provisions by which some or all of their residents are able to access The Cochrane Library for free. These include:

Australia	http://www.nicsl.com.au/Cochrane	
England	http://www.library.nhs.uk	
Finland	http://www.terveysportti.fi	
India	http://www.icmr.nic.in/	
Ireland	http://www.thecochranelibrary.com	
Latin and Central America and Caribbean		http://cochrane.bireme.br
New Zealand	http://www.moh.govt.nz/cochranelibrary	or http://www.nzgg.org.nz/ or http://www.cochrane.org.nz/
Northern Ireland	http://www.thecochranelibrary.com	
Norway	http://www.cochrane.no	
Poland	http://www.aotm.gov.pl	
Scotland	http://www.nes.scot.nhs.uk	
South Africa	http://www.sahealthinfo.org/evidence/databases.htm	
Sweden	http://www.sbu.se	
Wales	http://www.thecochranelibrary.com	
The Canadian Province of New Brunswick		http://www.gnb.ca/0003
The Canadian Northwest Territories, Nunavut, Yukon		http://www.thecochranelibrary.com

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The US State of Wyoming

<http://www.thecochranelibrary.com>
<http://www.library.dal.ca/kellogg/ahkp/cochrane.htm>
<http://wyld.state.wy.us/dbloginform.html>

3. The Cochrane Library is available with free one-click access to all residents of countries in the World Bank's list of low-income economies (countries with a gross national income (GNI) per capita of less than \$1000). Access to The Cochrane Library for low-income countries is via Wiley-Blackwell IP recognition, a system which recognises the country a user is in. Users in low-income countries can access The Cochrane Library via <http://www.thecochranelibrary.com>.

There are also several programmes, such as the Health InterNetwork Access to Research Initiative (HINARI) and the International Network for the Availability of Scientific Publications (INASP) that provide access in developing countries. To find out whether your country is included in any of these programmes/provisions, or to learn how to get access if you don't already have it, please visit: <http://www.thecochranelibrary.com>.

4. The Cochrane Database of Systematic Reviews received its first Impact Factor ever in 2007 and has an IF of 4.654, giving it a ranking of 14 out of 100 in the ISI category Medicine, General & Internal.
5. As of January 2009 The Cochrane Library is proud to introduce its first ever Editor-in-Chief, Dr David Tovey. Dr. Tovey was previously Editorial Director of the BMJ Evidence Centre and editor of Clinical Evidence. He graduated from Bristol University in 1983. After completing vocational GP training, he was senior partner in a large, inner city practice in South London, and a postgraduate CPD tutor until 2003, when he joined the BMJ Group. He is a Fellow of the Royal College of General Practitioners.
6. As of Issue 4 2008, the Cochrane Database of Systematic Reviews includes Systematic Reviews of Diagnostic Test Accuracy. Diagnostic test accuracy reviews are full-text systematic reviews of studies that assess the accuracy of a diagnostic test or tests for a given target condition in a specific patient/participant group and setting.
7. The Cochrane Library Issue 1, 2009 Podcasts: a collection of podcasts on a selection of Cochrane Reviews by the authors will be available from <http://www.cochrane.org/podcasts> from Wednesday 21st January 2009.

For Issue 4, 2008, the podcasts are:

- **Post-operative radiotherapy for ductal carcinoma in situ of the breast**
- **Early discharge hospital at home**
- **Interventions for treating obesity in children**
- **Virtual reality training for surgical trainees in laparoscopic surgery**
- **Robot assistant for laparoscopic cholecystectomy**
- **Street lighting for preventing road traffic injuries**
- **School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6-18**
- **Publication bias in clinical trials due to statistical significance or direction of trial results**
- **Acupuncture for tension-type headache & Acupuncture for migraine prophylaxis**
- **Orthotic devices after stroke and other non-progressive brain lesions**
- **Interventions for preventing weight gain after smoking cessation**

Podcasts of the top 20 most accessed reviews of 2007 will also be available from www.cochrane.org/podcasts from 21st January

If you would like to see a full list of Reviews published in the new issue of The Cochrane Library, or would like to request full access to the contents of The Cochrane Library, please contact:

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^a Jadad AR, Cook DJ, Jones A, Klassen TP, Tugwell P, Moher M, et al. Methodology and reports of systematic Reviews and meta-analyses: a comparison of Cochrane Reviews with articles published in paper-based journal.