

A magnifying glass with a wooden handle and a metal rim is positioned over a document. The lens is focused on the text, which is slightly blurred. The background is a dark, textured surface, possibly a book cover or a folder. The lighting is dramatic, with a bright spot on the lens and a soft glow around the handle.

# Evidence-Based Reviews in Surgery:

A new  
educational program  
for ACS Fellows,  
Candidates, and  
Resident Members

by  
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**A** 53-year-old general surgeon laments, “Everything I do in my practice today is different from what I learned in residency.”

Breast-preserving operations are the standard and recently she has started doing sentinel lymph node dissection. “Dr. X” adopted the laparoscopic approach to performing cholecystectomies in the mid-1990s and now does laparoscopic Nissens, and she has recently started doing laparoscopic colectomies for colon cancer. She performs total mesorectal excision for all rectal cancers and reconstructive surgery for both low rectal cancers and ulcerative colitis and treats many trauma patients nonoperatively. She participates in multidisciplinary tumor board rounds and most patients receive neoadjuvant therapy. She has access to advanced imaging techniques such as magnetic resonance and positron emission tomography scanning as well as interventional procedures for performing biopsy on masses and draining abscesses.

What perhaps astounds her the most, however, is that she now performs tension-free inguinal hernia repairs whereas during her residency she was taught the Bassini repair (which was described in 1887) and she assumed it would be the standard repair for another 100 years. Dr. X is concerned that while she has adopted these changes, she is uncertain whether they actually lead to improved outcomes in her patients. Furthermore, there are continuous new developments in technology and other treatments and she is worried about how she will keep up.

Dr. X’s concerns are not uncommon. It is estimated that there are more than 2 million new articles published each year in the medical literature.<sup>1</sup> Thus, it is a daunting task for practicing surgeons to always practice best medicine. Traditional continuing medical education (CME) courses have been shown to yield little change in practice.<sup>2</sup> Often surgeons continue to do what they learned in residency many years ago or are highly influenced by advertising or detailing by pharmaceutical and surgical instrumentation companies. The latter are often biased toward their own products and do not necessarily have strong evidence to support their use.

Critical appraisal skills enable one to apply certain laws of logic to clinical investigative and

published data in order to estimate their validity, reliability, credibility, and utility.<sup>3</sup> In other words, such skills allow physicians to determine if the reported data are “true” and if they are applicable to one’s own practice. Although most clinicians are mainly interested in determining whether a treatment is effective, knowledge of natural history, causation, risk factors, diagnostic tests, and measurement are equally important in order to treat patients appropriately.

To critically appraise an article requires some knowledge of research design and methodology, statistics, and possibly economics, as well as an understanding of decision analysis, meta-analysis, and guideline development. Finally, essential to critical appraisal is the physicians’ clinical knowledge, which allows them to put the information in perspective. Not only are critical appraisal skills necessary for reading the literature, they allow physicians to quickly evaluate an article to see if it is even worth reading—an essential skill given the overwhelming number of articles published monthly in the literature. Furthermore, critical appraisal skills are essential to the practice of evidence-based medicine in order to apply the best evidence to the treatment of individual patients.

Beginning in October, Fellows, Candidates, and Resident Members of the College will have access to Evidence-Based Reviews in Surgery (EBRS), an Internet-based journal club designed to teach practicing general surgeons and residents critical appraisal skills. EBRS was initiated by the Canadian Association of General Surgeons (CAGS) in 2000 and, as a result of its success in Canada, is now being jointly sponsored by CAGS and the ACS. It is supported by an educational grant from Ethicon, Inc., and Ethicon Endo-Surgery, Inc., divisions of Johnson & Johnson, Inc., and Ethicon and Ethicon Endo-Surgery, both units of Johnson & Johnson Medical Products, a division of Johnson & Johnson, Inc.

EBRS consists of eight monthly packages per academic year, from October to May. Each package includes a clinical article that is relevant to the practice of general surgery, plus a methodological article that can be used to assist in the evaluation of the clinical article. In addition, methodological and clinical reviews are provided by experts in the field and surgeons may also

participate in an expert-led listserv discussion of the article. Selected articles cover a spectrum of important clinical and methodological topics. It is hoped that participants will be able to evaluate the clinical article being reviewed, further their knowledge in the clinical topic, and learn critical appraisal skills that can be used to evaluate other articles that they read in the future.

Some topics covered in previous years include the following:

- Comparison of laparoscopic versus open colectomy for cancer
- Risk of cancer in Barrett's esophagus
- Role of computed tomography angiography in the diagnosis of suspected acute mesenteric ischemia
- Guidelines for the management of ductal carcinoma in situ and breast cancer
- Accuracy of FAST (focused assessment with sonography for trauma) performed by trauma surgeons
- Meta-analysis of bowel preps in colon surgery
- Evaluation of techniques for ventral hernia repair
- Risk factors for retained foreign bodies at surgery

EBRS has been highly successful in Canada since its inception. Virtually all of the general surgery training programs have adopted EBRS as a means to teach critical appraisal skills to their residents. In 2000, before making EBRS available to the general membership of CAGS, members were solicited to participate in a randomized, controlled trial to assess the effectiveness of EBRS.<sup>4</sup> Participating general surgeons were randomized to receive either a clinical article only or the EBRS package of material plus participation in the listserv discussion. At the end of the one-year trial, participants completed a validated examination to test their critical appraisal skills.<sup>5</sup> Those in the intervention group performed significantly better than those in the control group. Since 2001, EBRS has been available to all members of CAGS. The listserv continues to generate lively debate and discussion among participants and feedback has been uniformly positive. Surgeons practicing in rural communities have found it to be particularly worthwhile because it gives them an opportunity

## Steering Committee of Evidence-Based Reviews in Surgery

Robin McLeod, MD, FACS, FRCSC, *Toronto, ON*  
(Chair)

Karen Brasel, MD, FACS, *Milwaukee, WI*  
Jeffrey Barkun, MD, FACS, FRCSC, *Montreal, QC*

Bill Fitzgerald, MD, FRCSC, *St. Anthony, NL*  
Andrew Kirkpatrick, MD, FACS, FRCSC,  
*Calgary, AB*

Harry Henteleff, MD, FACS, FRCSC, *Halifax, NS*

Steve Latosinsky, MD, FRCSC, *Winnipeg, MB*  
Helen MacRae, MD, FACS, FRCSC, *Toronto, ON*  
Leigh Anne Neumayer, MD, FACS, *Salt Lake City, UT*

David Rogers, MD, FACS, *Springfield, IL*  
Mark Taylor, MD, FACS, FRCSC, *Winnipeg, MB*  
Eric Webber, MD, FRCSC, *Vancouver, BC*

to discuss issues with other surgeons and receive MainCert credits (the Canadian equivalent of CME credits) from any location and without taking time away from their practices.

EBRS can be used in several different ways. If surgeons wish to participate in the current monthly discussion, they must register for the listserv. If they do, they will then receive a monthly e-mail reminder to read the articles. EBRS is completely available electronically so participants do not have to go to their library to obtain the monthly articles; they simply have to click on a link, which will bring them to a PDF version of the article. In addition, a clinical scenario—which serves to highlight the issues in the clinical article for discussion—will be posted on the listserv and users can participate in the discussion, either actively or by reading the comments of other participants and the experts.


The listserv discussion generally lasts for two weeks, after which the methodological and clinical reviews are posted and participants are asked to complete an evaluation and return it electronically. In addition, if they complete a

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series of multiple-choice questions, they will receive six CME credits. Alternatively, members of the College can access the articles and reviews whenever they wish. EBRS now has a library of more than 40 indexed articles and reviews, which is becoming a valuable resource for surgeons wishing to obtain current best evidence on some topics. However, CME credits cannot be obtained by reviewing past packages. Finally, EBRS maintains electronic subscriptions to approximately eight to 10 medical and surgical journals, including the Cochrane Database System Reviews. These journals can be accessed at any time to download other articles not reviewed within EBRS.

EBRS is available free of charge to all Fellows, Candidates, and Resident Members of the American College of Surgeons. EBRS may be accessed by going to the Division of Education page on the ACS Web site ([www.facs.org](http://www.facs.org)).

The first topic to be discussed in October of this year is the management of asymptomatic primary hyperparathyroidism. The remaining topics for the year will include a review of quality of life following laparoscopic colectomy, a meta-analysis of drains in gastrointestinal surgery, a decision analysis on the timing of elective colectomy in diverticulitis, usefulness of a decision aid for breast cancer surgery, prognostic factors in melanoma, and management of occult pneumothorax.

The members of the Steering Committee of Evidence-Based Reviews in Surgery are listed in the box on page 10. Comments regarding EBRS are welcome at any time and may be directed to Robin McLeod via e-mail at [rmcleod@mtsinai.on.ca](mailto:rmcleod@mtsinai.on.ca). For more information about accessing EBRS or to register for the listserv discussion, please contact Marg McKenzie, EBRS administrative coordinator, via e-mail at [mmckenzie@mtsinai.on.ca](mailto:mmckenzie@mtsinai.on.ca), or via postal mail at Room 1560, Mount Sinai Hospital, 600 University Avenue, Toronto, ON, Canada M5G 1X5. 

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