

# Clinically integrated course for training in evidence-based medicine

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# Evidence based medicine

- *Good doctors use both individual clinical expertise and the best available external evidence, and neither alone is enough. Without current best evidence, practice risks becoming rapidly out of date, to the detriment of the patient*

• Sackett 1996

# Evidence based practice

- Integrates the concepts of problem-based learning and life-long learning

## Ten questions to ask when planning a course or curriculum

R. M. HARDEN

*Centre for Medical Education, University of Dundee*

**Summary.** This brief practical aid to course or curriculum development cannot replace educational qualifications or experience, but it does examine ten basic questions, any of which may be all too easily neglected. These are: (1) What are the needs in relation to the product of the training programme? (2) What are the aims and objectives? (3) What content should be included? (4) How should the content be organized? (5) What educational strategies should be adopted? (6) What teaching methods should be used? (7) How should assessment be carried out? (8) How should details of the curriculum be communicated? (9) What educational en-

qualification or formal training in educational theory and practice. If asked to plan a course, they will depend on common sense plus three factors based on experience. These are their perception of the subject which they are teaching, the way in which they were educated themselves and current teaching practice elsewhere.

This approach may suffice but it can be improved by considering the ten questions discussed here. Whether the end product is an undergraduate degree course, a short post-graduate course or a 1-hour lecture, a systematic approach encourages timely decision-

# Learning in practice

## What is the evidence that postgraduate teaching in evidence based medicine changes anything? A systematic review

Arri Coomarasamy, Khalid S Khan

### Abstract

**Objective** To evaluate the effects of standalone versus clinically integrated teaching in evidence based medicine on various outcomes in postgraduates.

**Design** Systematic review of randomised and non-randomised controlled trials and before and after comparison studies.

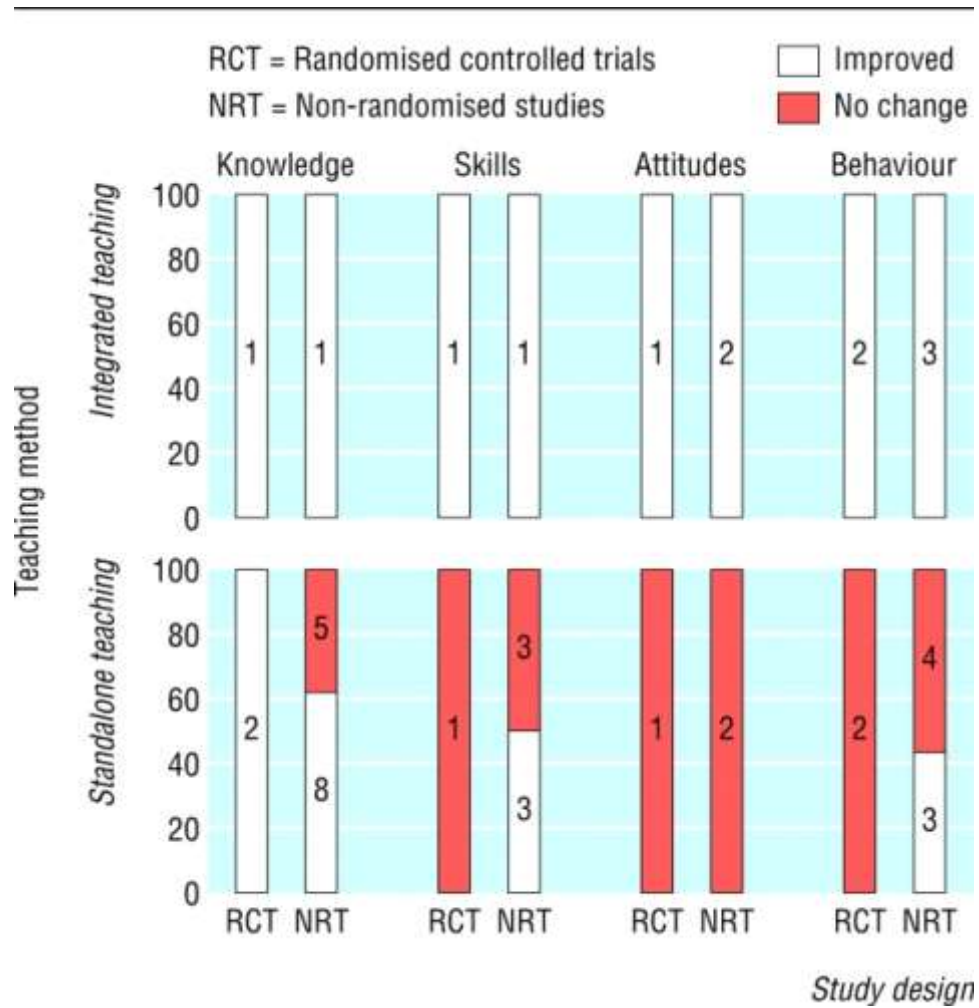
**Data sources** Medline, Embase, ERIC, Cochrane Library, DARE, HTA database, Best Evidence, BEME, and SCI.

**Study selection** 23 studies: four randomised trials, seven non-randomised controlled studies, and 12 before and after comparison studies. 18 studies (including two randomised trials) evaluated a standalone teaching method, and five studies (including two randomised trials) evaluated a clinically integrated teaching method.

Best Evidence Medical Education (BEME), and Science Citation Index (SCI) using the following search terms and their word variants: "evidence", "critical", "appraisal" or "journal club" combined with "AND" to "teach\$", "learn\$", "instruct\$", or "education". We also searched reference lists of known systematic reviews.<sup>1-4</sup> The final electronic search was conducted in April 2004.

We included studies that evaluated the effects of postgraduate EBM or critical appraisal teaching compared with a control group or baseline before teaching, using a measure of participants' learning achievements or patients' health gains as outcomes. Learning achievement was assessed separately for knowledge, critical appraisal skills, attitudes, and behaviour.

Knowledge relates to issues such as remembering materials as well as grasping the meaning, for example defining and



Coomarasamy, A. et al. BMJ 2004;329:1017

# Clinically integrated EBM course

- Provides postgraduate training in EBM for OBGYN trainees
- Uses clinically integrated teaching and learning methods combined with e-learning
- Incorporates the *WHO Reproductive Health Library*

**Learning opportunity identified in a Clinical Setting**



**Formulate 'Structured Question'**

**Module 1**



**Select Keywords**



**Search the literature**

**Module 2**



**Obtain full (relevant) review article(s)**



**Check the review article for validity**



**Check the primary studies included for validity**

**Module 3**



**Check results for importance and present them in clinically meaningful measures**



**Assess for applicability to local population**

**Module 4**



**Prepare a critically appraised summary of the review**



**Disseminate the evidence**

**Module 5**



**Use the evidence to guide practice**



# Each module consists of:

- **Clinically integrated part**
  - Contact with tutor, identification of learning opportunities in a real clinical scenario
- **E-learning**
  - self-directed learning
  - Online assessments
- **Assignments**
  - Activities related to the content of each module

# E-learning in the course

- 15-20 minutes sessions (online or CD-ROM)
- Provide the theoretical background for participants to apply in a real clinical setting
- Audio and visual components
- Interactive features

Module 1 -  
Asking clinical questions in  
a structured way



Outline Thumb Notes Search

Slide Title	Duration
▶ 1. Evidence-based m...	01:11
2. Learning objectives	00:55
3. Recognizing knowl...	01:30
4. Prioritizing questio...	00:35

9 Minutes 39 Seconds Remaining

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Evidence-based module course

RHL The WHO Reproductive Health Library  
Evidence-based Medicine Course



Slide 1 / 10 | Stopped

00:00 / 01:11



# Trial

A cluster randomised controlled trial to evaluate the effectiveness of the e-based clinically integrated EBM course

# Objectives

- to evaluate if the RHL-EBM course has meaningful advantages in improving knowledge, skills and competencies over standalone dissemination of resource materials.
- a secondary objective will be to assess the impact on the educational environment.

# Partners

- Centro Rosarino de Estudios Perinatales, Argentina
- University of Campinas, Brazil
- University Hospital Kinshasa, DRC
- All India Institute of Medical Sciences, India
- University of the Philippines, Philippines
- University of Pretoria, South Africa
- Khon Kaen University, Thailand
  
- GFMER, Switzerland
- Birmingham University, UK
- WHO/RHR, Switzerland

# Methods

- Survey to identify possible participating centres in partner countries
- 50 eligible centres in 7 partner countries

# Methods

<b>Intervention</b>	<b>Control</b>
Baseline assessment	Baseline assessment
RHL-EBM Clinically integrated course: duration max. 8 weeks	dissemination of RHL training material
Final assessment	Final assessment



# Course outcome assessments

- Knowledge gain
  - Multiple choice questions
- Skills
  - based on OSCE (*‘objective structured clinical examination’*)
- Attitude towards EBM
  - Questionnaire
- Educational environment
  - Questionnaire



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MCQ1

MCQ2

MCQ3

MCQ4

MCQ5

MCQ99



## Assessment Module 2

Indicate the correct answer for each question by clicking on it.

**Q1: You are responsible for the development of protocols used in your department. You have to revise an outdated protocol. As you do not want to be overloaded with information, you decide to use an efficient strategy to look for the most appropriate guidance. In which order would you get what you need both, easily and reliably?**

**Please click on the correct answer.**

- a.  Asking experts, primary studies, Evidence based guidelines, Systematic reviews
- b.  Evidence based guidelines, Systematic reviews, Primary studies, Asking experts
- c.  Asking experts, Systematic reviews, Evidence based guidelines, Primary studies
- d.  Primary studies, Asking experts, Systematic reviews, Evidence based guidelines

**Q2: By using the Boolean operator "AND", the number of studies retrieved:**

- a.  Is increased
- b.  Remains the same
- c.  Is decreased

**Q3: In Pubmed one can use search filters to search for specific types of studies. These are named:**

- a.  Related resources
- b.  Clinical Queries
- c.  Matcher

**Q4: As a doctor at the antenatal clinic, you see a 23 years old women at 34 weeks gestation with a blood pressure of 150 / 105 mmHg and ++ proteinuria. You decide to admit her and while waiting for her paper work to be completed think about any medication for eclampsia prevention. You see your colleague working in labour ward on the way to the ward who tells you that it is advisable to use magnesium sulfate rather than giving nothing. You know that magnesium sulfate is effective for treating convulsions but unsure if it is useful for prevention. Before deciding on what to do you conduct a literature search while the patient is taken to the ward. Indicate for each answer 'true' or 'false' by clicking on it.**

# Additional

- Translation
- Certification: local OBGYN societies, universities
- Wider dissemination after the trial:
  - Other countries
  - Other specialties

# Acknowledgement

The course is based on the pilot project developed by 11 partners within the framework of the Leonardo da Vinci vocational programme of the European Union: the **EU-EBM Unity Project**

*Coppus BMC Medical Education 2007*

*Kulier BMC Medical Education 2008*

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- <http://www.rhl-ebm.org/>
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